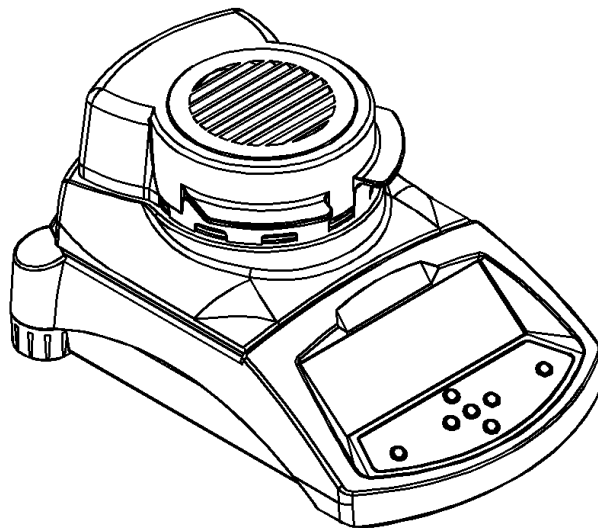


## PMB Moisture Analyser

Software Version 1.44



Adam Equipment strives to be more environmentally focused and uses recycled materials and environmentally friendly packaging where possible. As part of this initiative we have developed a short form manual that uses less paper and ink to describe the main functions of your new Adam moisture analyzer. A more detailed manual for this product, as well as manuals for all our current products, are available at [www.adamequipment.com](http://www.adamequipment.com). Thank you for your support of Adam Equipment and we hope that you enjoy your new moisture analyzer.



## SAFETY

This Moisture Analyzer complies with the European Council Directives and international standards for electromagnetic compatibility, and safety requirements.



- Improper use or handling can result in damage or injury.
- To prevent damage to the equipment, read these operating instructions thoroughly. Keep these instructions in a safe place.
- The Moisture Analyzer is used for determination of the moisture in samples. Do not use it for any other purpose. Improper use is dangerous and can cause injury or damage to others and property.
- The Moisture Analyzer must be operated as described in this manual. The environment must be controlled so that hazardous materials or conditions are not present.
- The Moisture Analyzer must be operated only by trained personnel who are familiar with the properties of the samples used and with the operation of the instrument. Do not leave the analyzer unattended when running a test.
- Make sure before getting started that the voltage printed on the rear panel is identical to your local voltage.
- Your Moisture Analyzer is supplied with a 3-pin power cable with a grounding conductor. Use cables that meet the safety standards for your location and include the earth ground conductor. The power connection uses a standard IEC C13 socket on the cable with a plug suitable for the location. Do not use adaptors if the plug does not match your power supply.
- The fuse should only be replaced with a time lag type fuse with high breaking capacity, 5Amp current rating.
- DO NOT disconnect the earth ground connection.
- The mains cable should not touch the enclosure where it can be heated during the test.
- Remove the power cable if the Moisture Analyzer is serviced.
- Protect the Moisture Analyzer from external liquids. Clean any spills immediately.
- If there are any visible damage to the Moisture Analyzer or the power cable, Stop using the instrument immediately. Unplug the power and isolate the analyzer. Do not use until the faults have been repaired.
- All repairs must be done by a trained technician. There are no user serviceable parts in the enclosure.
- Contact Adam Equipment or your dealer for assistance or questions.



### HOT SURFACES

- During test the cover of the heating chamber can become very hot, especially near the top vent. Keep all material away from the vent area. Do not touch hot surfaces.
- Leave 20 cm (about 8 inches) around the moisture analyzer and 1 m (3 ft.) above.
- Samples will be hot after a test. Do not use bare fingers to pick up any samples pans or touch the materials. The internal surfaces of the weighing chamber may be hot for some time after a test.



### MATERIALS

- The PMB moisture analyzer is not suitable for all materials. During the drying process samples will be heated to high temperatures. Materials that are flammable or explosive should not be tested.
- Materials that emit toxic, caustic or noxious fumes should only be tested in suitable fume hoods or with other ventilation.
- Materials that will have a film on the surface during drying may cause high internal pressures to be present. These materials should not be tested using this method.
- Materials that emit aggressive or corrosive fumes (such as acids) should be tested using small quantities of material in an area with good ventilation.



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P.N. 3076610544, Revision D, February 2017

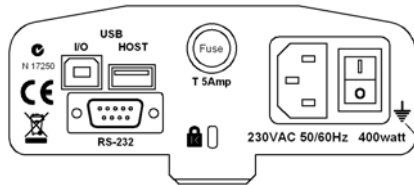
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**You use this equipment at your own risk. Adam Equipment, its affiliates and partners will not be liable or responsible for any damage that arises to persons or property when using this moisture analyzer.**

## 2.0 OPERATION

### 2.1 TURNING ON THE ANALYZER FOR THE FIRST TIME

Set your analyzer in a well ventilate room and away from any flammable substances. Ensure that you are using the correct voltage for the analyzer. The voltage is shown on the back of the unit.



The master **on /off** switch is located on the back. To turn on the unit press the **on / off** switch at the rear of the analyzer, the display will show the serial number and software revision before starting its self test sequence. The display will show zero weight accompanied by the **→0←** symbol. There is a power button on the front that turns the screen off and sets the analyzer into standby mode.

It is a good idea to let the analyzer achieve a stable internal temperature before use – normally 30-60 min warm up time is advisable.



A stable sign **~** is shown when the analyzer is in stable condition. It will turn off if the analyzer is not stable. Exact zero is shown when the “**→0←**” symbol is on to the left of the display area.

**NOTE:** If a passcode has been set to limit access to the weighing functions the display will show “**PASSCODES**”. The display will change to show 7 digits set to zero with the rightmost digit flashing. Use the keypad to enter the secure code. See Supervisors Menu to see how to set the security code.

### 2.2 SETTING THE TEST PROCEDURE

The analyzer can be set up via the keypad, recalled from memory (internal or USB), or via a PC using the RS232 or USB. For information on using the computer interface for communicating with the analyzer please consult the full manual. Information on using the USB can be found under the section USING THE USB.

The PMB can perform 4 types of moisture tests:

- % moisture =  $100 \times ((\text{initial mass} - \text{dry mass}) / \text{initial mass})$
- % solid =  $100 \times (\text{dry mass} / \text{initial mass})$
- % moisture vs. dry weight =  $100 \times ((\text{initial mass} - \text{dry mass}) / \text{dry mass})$  Also called ATRO Moisture
- % solid vs. dry weight =  $100 \times (\text{initial mass} / \text{dry mass})$  Also called ATRO Solid

ATRO Moisture or Solid tests are special applications specific to some industries. %Moisture and %Solid are the more common calculations.

To set a test press the **[Test]** key

Display shows **rESULT**  
Options are: Moisture, Solid, ATRO  
Moist, ATRO Solid

Use arrow keys, **[Dspl]** and **[Test]**,  
to change and press **[Setup/Enter]**  
to continue.

Display, shows **HEAT**  
Options are: Single, Ramp, Step

Use arrow keys, **[Dspl]** and **[Test]**,  
to change and press **[Setup/Enter]**  
to select.

Use arrow keys,  
**[Dspl]** and **[Test]**,  
to change up and  
down. The **[Print]**  
and **[PST]** key to  
move to the right  
or left. Press  
**[Setup/Enter]** to  
continue.

Option **SINGLE**  
A single temp setting to heat to

<b>SINGLE °C</b>
123

Option **RAMP**  
Will ramp up to a temperature with  
a user defined time

<b>RAMP °C</b>
123

<b>RAMP TIME</b>
06:00

Option **STEP**  
Heats to one temperature for a set  
time then to another temperature  
for another period of time. There  
are a maximum of 3 settings.

<b>STEP 1 TEMP °C</b>
100

<b>STEP 1 TIME</b>
03:00

<b>STEP 2 TEMP °C</b>
120

<b>STEP 2 TIME</b>
03:00

<b>STEP 3 TEMP °C</b>
140

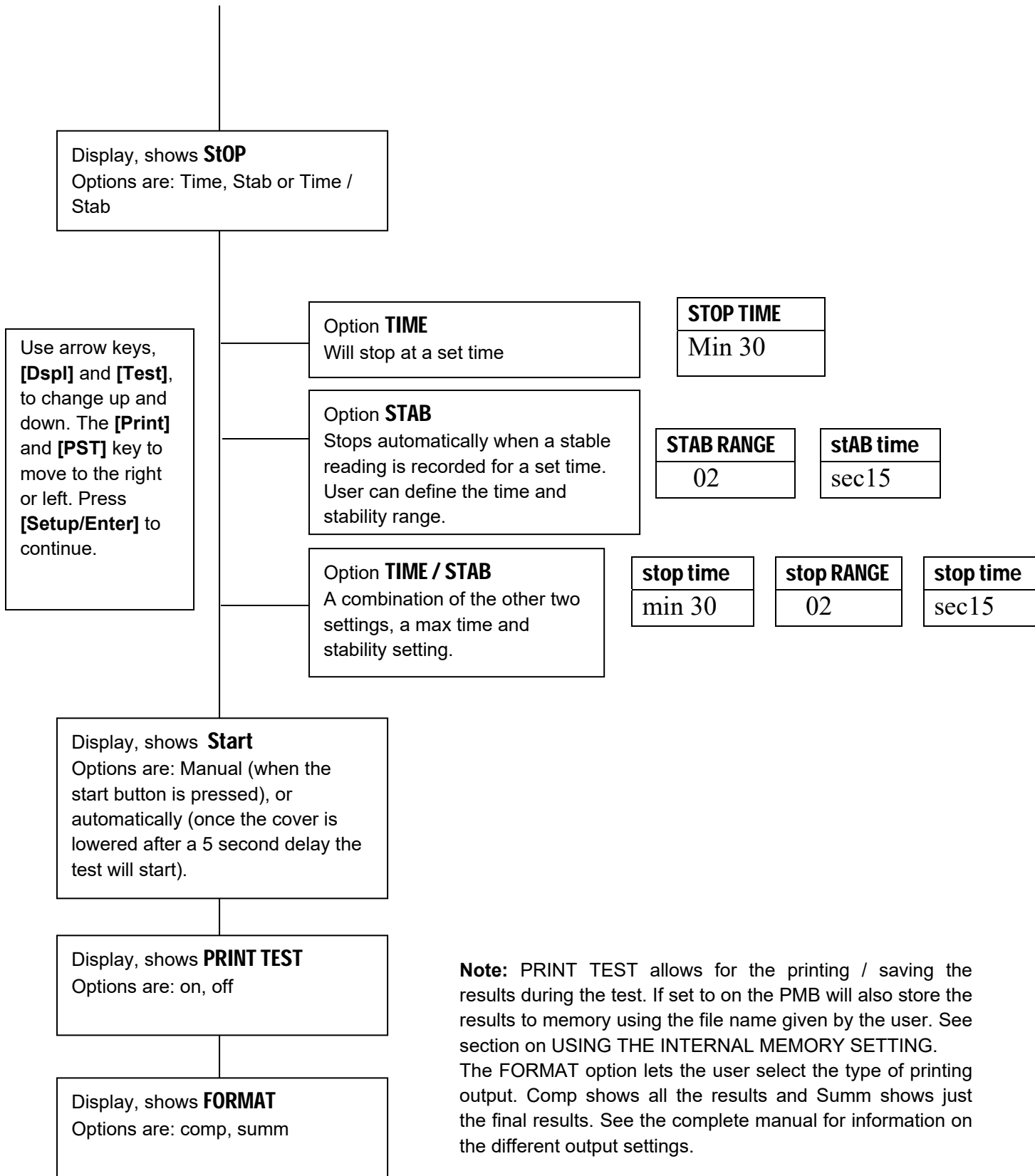
<b>STEP 3 TIME</b>
03:00

Display, shows **INTERVAL**  
Set the time interval at which the  
results are computed, displayed  
and printed. Range is 1 to 99 sec.

<b>INTERVAL</b>
SEC 10

Display, shows **RAPID** (not enabled  
with RAMP heating)  
Options: On, Off or manual (manual  
asks each time the user runs a test)

**Note:** RAPID heat will cause the target temp to be 145% or 160°C (whichever is less) of the value set for single or the first ramp step for a time of 3 minutes.  
Rapid – off means the function is disabled, on means it will always work for every test and manual will ask the user each time the test is run.



The user can print the current configuration by pressing the **[Print]** key during the process providing the second function for that key is not needed.

## 2.3 RUNNING A TEST

Once the test procedure has been set then a test can be run using the current settings. A test can also be recalled from memory See USING THE INTERNAL MEMORY.

Place an empty sample pan on the analyzer.  
Press **[Tare]** to zero the weight.

<b>MASS</b> 23°C
0.000g

Remove and fill the sample pan with the sample.

Place the filled pan on the analyzer.

<b>MASS</b> 23°C
5.670g

Lower the lid of the weighing chamber,

- If automatic start has been selected the test will begin after a 5 second delay.
- If Manual start has been selected press the **[Start]** key.

The display will show the current test settings if the Preview function is on, then the test will begin. See section 5, Menu Structure.

### Rapid Function

If the rapid heat function has been set to MANUAL the user can select if they wish to enable that option now.

The display will show the last setting used, either:

<b>OFF</b>
rapid

<b>ON</b>
rapid

Use the **[Up]** or **[Down]** keys to change the option, then press **[Enter]** to continue the test.

### Alternate Displays

During the test the **[Dspl]** key can be pressed to see other information such as current mass, other results such as %Solid, time remaining if time limit is set for the test. Each alternate display is shown for 5 seconds then normal display is returned. If **[Dspl]** is pressed again the next alternate display is shown.

The Alternate displays in order are:

- Mass
- % Moisture
- % Solid
- % Atro Moisture
- % Atro Solid
- Time Remaining for test if time limit set

### Stopping the Test

During the test the user can stop the test at any time by pressing the **[Start]** key again. Otherwise it continues until the stop condition is met.



When the test has stopped the beeper will sound 3 short beeps (if enabled) and the display will show the end result:

<b>12:44 ASTOP</b>
76.47%

This display shows the test was automatically stopped as stability was reached in 12:44 minutes. If it had stopped at the end of the time period it would have TSTOP on the top line and if manually stopped it would have MSTOP.

At this time the final results are displayed. These results will include elapsed time of the test and final % result.

Display other data by pressing the **[DspI]** key to show the initial mass, final mass and the file name used by the PMB to store the results in internal memory.

<b>Start mass</b>
5.670g

<b>End MASS</b>
1.334g

<b>RES00033</b>
STORED

The final values for the results can be printed again to the serial interface by pressing the **[Print]** key. If the print test function is enabled in the test settings then the PMB will also store the results into one of 99 memories. See USING THE INTERNAL MEMORY SETTING

To return to normal weighing press the **[Tare]** key.

### 3.0 USING THE INTERNAL MEMORY SETTING

#### 3.1 STORING TEST SETTINGS

It will be possible to store up to 49 test procedures/settings. There is also a factory default that is permanently stored as PST 00.

To Store the current settings press the **[PST]** key. The display will give the user the option to store, recall or delete a Preset Test. The display will show **PST STORE** or **PST RECALL** or **PST DELETE**. Use the up/down arrow keys, **[DspI]** and **[Test]**, to select either store or recall.

<b>PST STORE</b>

If Store is selected the display will then show **PST STORE XX** with the number showing the ID for the next empty location. For example if PST 01, 02, & 03 are already stored the next number is PST 04. If the user wishes to overwrite a previously stored value they can change the number and continue. Using the up/down arrow keys, **[DspI]** and **[Test]**

<b>PST STORE</b>
04

Press **[Setup/Enter]** to select the PST number shown. If this number already has a test method stored, the user is asked if the test should be overwritten.

<b>OVERWRITE?</b>

To continue the user must press **[Setup/Enter]** to overwrite the old results and store new ones. Pressing the **[Tare]** key will escape without clearing the old result.

When storing a test procedure the user has the option of adding a text or numeric name to the test. The top display will show **PST NAME** then show - - - - - . To enter a name, use the up/down arrow keys to cycle through numbers and letters. Use the left right arrows to move the flashing digit to the left or right.

— . / 0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Up to 10 characters can be used to describe the test. Press **[Setup/Enter]** at any time to finish the description. If no name is added the field will be shown as blanks when the name is shown during the recalling process.

<b>PST NAME</b>

<b>BREAD-4</b>

### 3.2 RECALL TEST SETTINGS

Recalling the test settings can be done by selecting **PST RECALL** then scrolling through the stored settings using the up/down arrow keys to find the desired settings and then pressing the **[Setup/Enter]** key to recall them. When the **PST XX** number has been selected the name given to the test will be displayed

If PST 00 is selected the default test settings are recalled. These can never be cleared or overwritten. If a test is not stored it is not displayed, i.e. If only 3 tests are stored then only those 3 plus the default are seen when recalling the test settings.

<b>BREAD-3</b>
PST 07

Press the **[Setup/Enter]** key to recall PST 07.

The display will show:

<b>RECALL OK</b>

The analyzer will then return to normal.

### 3.3 DELETE TEST SETTINGS

To delete a test setting select **PST DELETE**, then scroll through the stored settings using the up/down arrow keys to find the desired settings, and then press the **[Setup/Enter]** key to delete it.

The display will then show the next test setting stored or, if the memory is empty a message will be shown. Press **[Tare/Esc]** to return to normal operation.

### 3.4 REVIEW TEST SETTINGS

To review the current settings press the **[Test]** key then advance through the settings by pressing the **[Setup/Enter]** key at each option to retain the current value.

### 3.5 STORING TEST RESULTS

If the test settings include the printing of results being enabled, the test results will be stored using the file name given to it automatically by the analyzer in the form RESxxxxx

The PMB is capable of holding up to 99 test results. If the analyzer memory is full the display will show a **MEM FULL** message. Delete some of the stored results to make room for new test results.

### 3.6 RECALLING TEST RESULTS

During normal weighing mode press the **[Dspl]** key. The display shows:

<b>PRINT</b>

Pressing the **[Dspl]** or **[Test]** will change the option to **PRINT**, **DELETE** or **DELETE ALL**.

When the selection shows **PRINT**, press **[Setup/Enter]** and the display will show the first stored test result using the file name given it when stored.

<b>RES00032</b>

Press the **[Dspl]** or **[Test]** key to change the file name to the next available. When the desired test result is found press the **[Setup/Enter]** key to recall the details and print them in the same format in which they were stored.

Pressing **[Tare]** will return the analyzer to normal operation.

### **3.7 DELETING TEST RESULTS**

When test results have been stored in the analyzer memory they can be deleted individually or all at one time.

To delete all test results from memory, during normal weighing mode press the **[Dspl]** key until the display shows

<b>DELETE ALL</b>

When the selection shows **DELETE ALL**, press **[Setup/Enter]** to delete all test results. The display will ask if you are sure you want to delete all results. Press **[Setup/Enter]** again. The display will count down from 99 to 0 during the time it takes to remove all the files.

To delete an individual test result, continue as above except press the **[Dspl]** or **[Test]** to change the option to **DELETE**.

When the selection shows **DELETE**, press **[Setup/Enter]** and the display will show the first stored test result using the file name given when it was stored.

<b>RES00033</b>

Press the **[Dspl]** or **[Test]** key to change the file name to the next available. When the desired test result is found press the **[Setup/Enter]** key to delete just this file. The display will show **DELETED** then the next available file. Press **[Setup/Enter]** to delete this file if desired. Pressing **[Tare]** will return the analyzer to normal operation.

## 4.0 COMMUNICATION / INTERFACES

### 4.1 USING THE USB

The USB can be used to store results, test settings and configurations. For more detailed information on the type of files and file structures please refer to the complete operators manual.

### 4.2 STORING AND RECALLING TEST SETTINGS FROM USB MEMORY

To store or recall test settings on a USB memory device, simply plug the device into the USB hub interface. The PMB will detect the memory has been inserted and display a screen to guide you.

A message will be displayed showing the USB device is inserted, then the last setting:

VERIFY	CONFIG LD
USB	USB

To select the option of storing all of the test settings stored in the internal memory to the USB memory device press the **[Dspl]** key to change the menu option to select Preset Store, **PST ST**.

PST ST
USB

Press **[Setup/Enter]** to enter the test saving function.

Once the file has been saved the display will show for 2 seconds then return to the USB display.

SUCCESS
USB

PST ST
USB

To recall any stored test procedure press the **[Dspl]** key to show the test load screen.

PST LD
USB

Press the **[Setup/Enter]** key to enter the test load function. The display will show the file name of the first test file found.

PST 01
PSt

To load this file press the **[Setup/Enter]** key again. Or to choose a different file press the **[Dspl]** key to advance through the other available files, then press the **[Setup/Enter]** key when the desired file is shown.

After loading the file the display will show a success message and return to the USB screen.

To continue, the USB device should be removed. The analyzer will return to normal weighing automatically. Or press the **[Tare]** key to escape back to normal weighing.

To store or recall other test files plug the USB memory device back into the PMB.

### **4.3 STORING RESULTS IN USB MEMORY**

A memory stick plugged into the USB host connector will allow for mass storage of test results. The procedure is similar to the method used to store test settings

To store the results of a drying test on a USB memory, simply plug the memory into the USB hub interface. The PMB will detect the memory has been inserted and display a screen to guide you.

A message will be displayed showing the USB memory is installed, then it will display the first selection of actions that can be performed.

<b>RESULT ST</b>
USB

To select other options press the **[Dspl]** key to change the display to select Result Store, PST Store, PST Load, Configuration store or Configuration load.

To store test results select

<b>RESULT ST</b>
USB

Press **[Setup/Enter]** to enter the test saving function. All of the test results stored in the internal memory will be copied to the USB memory. The file names will be the same as those used to store internally.

Once the file has been saved the display will show for 2 seconds, then return to the USB display.

<b>STORE OK</b>
USB

<b>CONFIG Ld</b>
USB

#### 4.4 STORE AND RECALL CONFIGURATION SETTING FROM USB MEMORY

To store or recall PMB settings on a USB memory, simply plug the memory into the USB hub interface. The analyzer will detect the memory has been inserted and display a screen to guide you.

A message will be displayed showing the USB is installed.

To select the option of storing the configuration data to the memory press the **[Dspl]** key to change the display to select Configuration Store **CONFIG ST**

<b>CONFIG ST</b>
USB

Press **[Setup/Enter]** to enter the configuration saving function. The display will show a suggested file name. The name will be the next logical name for the configuration file based on what data is already on the USB memory. For example if CONFIG1 and CONFIG2 are already stored, then it will display CONFIG3.

<b>CONFIG3</b>
USB

<b>CONFIG3</b>
Store

Press **[Setup/Enter]** to confirm the action or, press **[Tare]** to escape back to the original USB display.

Once the file has been saved the display will show for 2 seconds then return to the main USB display.

<b>STORE OK</b>
USB

<b>CONFIG LD</b>
USB

To recall any stored configuration press the **[Dspl]** key to show the configuration load screen.

Press the **[Setup/Enter]** key to enter the test load function. The display will show the file name of the first file found.

<b>config1</b>
USB

To load this file press the **[Setup/Enter]** key again. Or to choose a different file press the **[Dspl]** key to advance through the other available files.

<b>config1</b>
LOAD

To continue the USB device should be removed. The PMB will return to normal weighing automatically. Or press the **[Tare]** key to escape back to normal weighing. To store or recall other files plug the USB memory back into the analyzer

#### **4.5 SERIAL INTERFACE**

There is an RS-232 and USB interface that allows for both input and output of data to computers and printers. For the USB serial interface a driver is required which can be found at [www.adamequipment.com](http://www.adamequipment.com).

Settings for the serial output can be configured under the supervisors menu. The RS-232 interface is a simple 3 wire connection.

Connector: 9 pin D-sub miniature plug

Pin	Type	
Pin 2	Input to analyzer	RXD
Pin 3	Output from analyzer	TXD
Pin 5	Signal ground	GND

Handshaking is not applied.

Baud rate: 2400, 4800, 9600, 19200, 38400

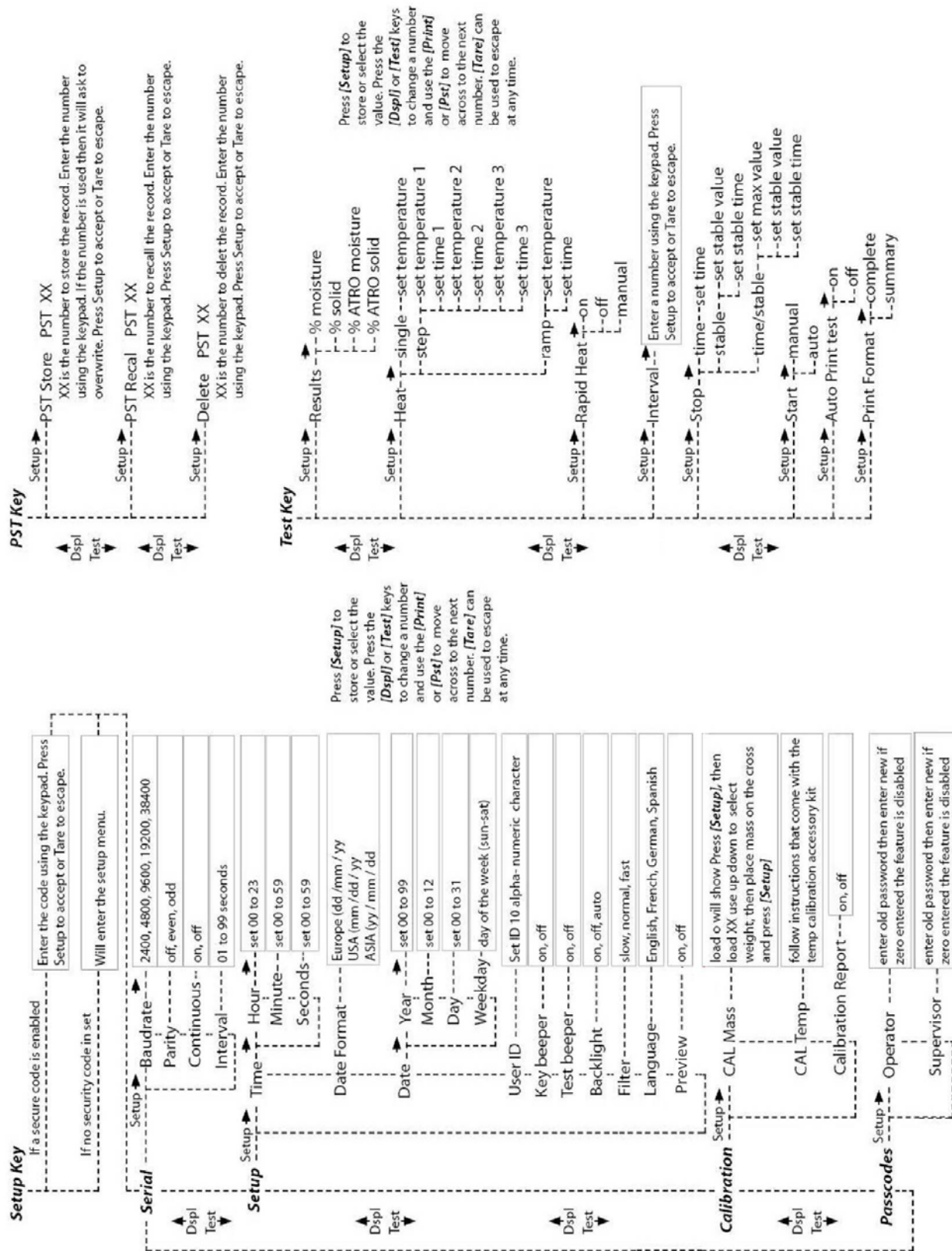
Parity: NONE (=8N1), EVEN (=8E1) or ODD (=8 O 1)

All lines are terminated with carriage return and line feed (<CR><LF>).

In continuous output mode, the serial output format will be a single line in the form "12.567 g<CR><LF>".

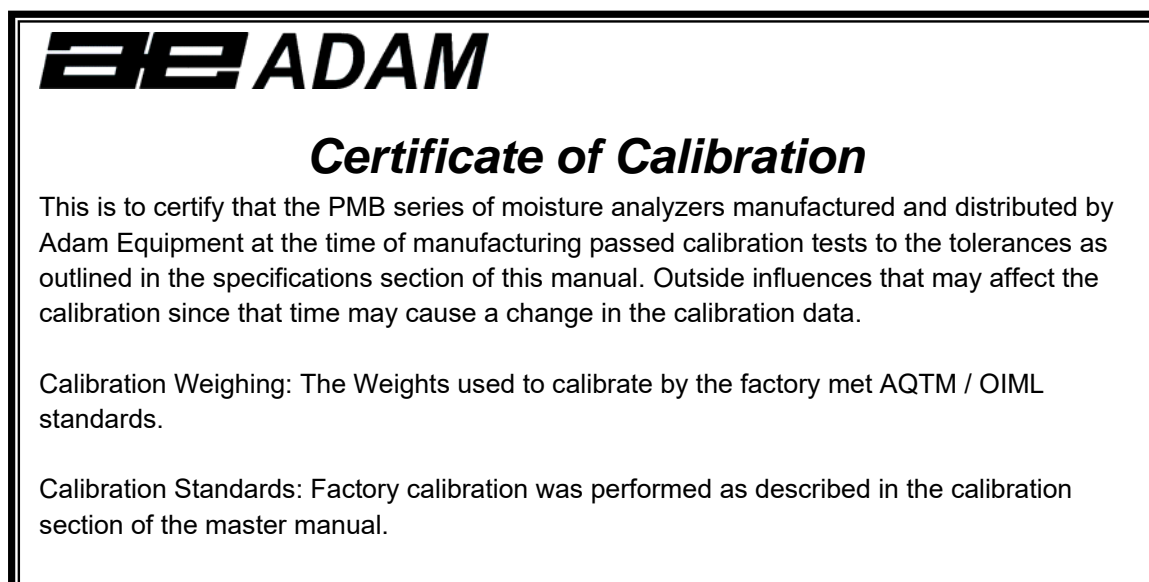


# 5.0 MENU STRUCTURE



## 6.0 CALIBRATION

It is possible to calibrate both the weighing results and temperature sensor. The mass calibration allows you to calibrate with 20g or 50g for the PMB 53, 100g or 150g for the PMB 163, and 100g or 200g for the PMB 202. Although the analyzer is calibrated at the factory prior to shipping it is recommended that you calibrate the moisture analyzer regularly for optimum performance. See complete manual for full calibration instruction for temperature and mass (basic mass calibration can be done via the menu structure section)



## 7.0 WARRANTY

Adam Equipment offers Limited Warranty (Parts and Labor) for the components failed due to defects in materials or workmanship. Warranty starts from the date of delivery.

During the warranty period, should any repairs be necessary, the customer must inform the supplier or Adam Equipment. The company or its authorised Technician reserves the right to repair or replace any components at its own discretion. Any shipping costs involved in sending the faulty units to a service centre is the customers responsibility.

The warranty will cease to operate if the equipment is not returned in the original packaging and with correct documentation for a claim to be processed. All claims are at the sole discretion of Adam Equipment.

This warranty does not cover equipment where defects or poor performance is due to misuse, accidental damage, exposure to radioactive or corrosive materials, negligence, faulty installation, unauthorised modifications or attempted repair or failure to observe the requirements and recommendations as given in this User Manual.

Repairs carried out under the warranty does not extend the warranty period. Components removed during the warranty repairs become the company property.

The statutory right of the purchaser is not affected by this warranty. The terms of this warranty is governed by the UK law. For complete details on Warranty Information, see the terms and conditions of sale available on our web-site.

## 8.0 SAMPLE PREPARATION

Sample preparation is the single most important item for accurate results. The sample must be prepared so the whole of the sample is heated uniformly and the moisture is near the surface of the material.

For powders no further preparation is necessary. For most other materials the sample should be ground, chopped, grated or otherwise made as fine as possible. Liquids or paste may need to be spread onto or sandwiched between glass fibre pads to distribute them evenly and thinly. Some materials that may splatter as they are heated (oils, butter) may need to be spread on the glass fibre pads or mixed with dry sand. If a substance is likely to form a surface skin when heated from above then it should be covered by a pad.

Trial and error is often the only method to find the best method for the material.

When the sample is placed on the weighing pan it should be spread as thin and evenly as possible, do not compact the material. Ensure enough material is used to assure good repeatability of the results. Typically samples of 3 to 8 grams are used. Larger sample sizes will usually produce more accurate and consistent results.

Some materials will require special preparation. For example when testing cheese, if the cheese is very soft it may be necessary to use dry sand as a buffer material so it does not splatter or form a skin. To do this it would be necessary to prepare the sand by drying it in an oven until you are certain no moisture remains. Put the sand on the sample pan and tare the analyzer. Mix the sand with the cheese so you have smooth mixture, spread this mixture on the sample pan and then do the test.

An alternative to this preparation is to spread the cheese on dry spun glass gauze to assist in spreading the heat and preventing splatter or skins forming. Remember to tare the analyzer with the gauze in the weighing pan for accurate results.

Other materials will hold water within them in a way that is not suitable for this type of test. For example sugar will bind the water to the sugar molecules so strongly that heat will not remove the water before the sugar is burned.

Some plastics also are not suitable for this type of method due to the very low percent moisture and the heat required to extract this moisture.

MOISTURE ANALYZER EXAMPLES

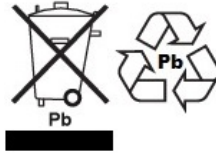
MATERIAL	SAMPLE MASS (g)	DRYING TEMPERATURE.(° C)	STROBE TIME(s)	AVERAGE WATER CONTENT	STANDARD DEVIATION	DRYING TIME(min)
BUTTER	2-5	138	15	16.3	0.1	4.5
CEMENT	8-12	138	15	0.8	0.1	4-5
CHARCOAL	8-10	120	10	3.8	0.1	8-10
CHOCOLATE POWDER	2-4	100	5	1.9	0.1	4
COCOA POWDER	2-3	106	20	0.1	0.1	2
COFFEE CREAMER POWDER	2-3	130	15	3 to 8%	0.1	6-8
CORNFLAKES	2-4	120	15	9.7	0	5-7
DRY APPLE PULP	5-8	100	10	7.5	0.1	10-15
DUST	5-10	104	10	7.3	0.3	8-15
FLOUR	8-10	130	10	12.5	0.1	4-5
GROUND COFFEE	2-3	106	5	2.8	0.1	4
MARGARINE	3-4	138	20	16	0.1	10
MAYONNAISE	1-2	138	20	56.5	0.4	10
MILK	2-3	120	15	88	0.2	6-8
MILK CHOCOLATE	2-5	106	15	1.3	0.1	3.5
MILK POWDER	2-4	90	15	5	0.2	6
MUSTARD	2-3	130	20	76.4	0.7	10
PAPER	2-4	106	20	6.4	0.1	10
POLYAMIDE	2-5	138	20	2	0.2	75
POTATO FLAKES	3-4	106	15	6.9	0.1	7.5
POWDERED SOUP	2-3	80	15	3	0.2	4.5-7
RED WINE	3-5	100	15	97.4	0.1	15-20
SLIME	11-12	130	15	80	-	90
SUGAR	4-5	138	15	11.9	0.1	10
SUNFLOWER OIL	10-14	138	20	0.1	0	2
WET APPLE	5-8	100	10	7.5	0	5-10
WHITE GLUE	2-5	136	15	54.3	0.1	6-8
YOGHURT	2-3	110	15	86.5	0	4.5-6.5

This list will be extended as information becomes available. If you wish to supply any information that may help others, please contact Adam Equipment or your dealer.

## 9.0 SPECIFICATIONS

	PMB 53	PMB 163	PMB 202
Capacity	50 g	160 g	200 g
Readability (S.D) +/-	0.001g / 0.01%		0.01g / 0.05%
Repeatability weighing (S.D) +/-	0.002 g		0.02g
Stabilisation Time Weighing	Typically 3 sec.		
Suggested Minimum Sample size	2g		5g
Repeatability moisture determination (Sample is sodium tartrate dihydrate)	3g sample 10g sample	0.15% 0.05%	5g sample 10g sample 0.4% 0.2%
Pan size	90mm		
Test method	%moisture %solids	%moisture / dry weight %solid / dry weight	
End Criteria	Manual stop Auto Stop with time Auto stop change < set amount/time		
Maximum test time	99 minutes (1.5+ hours)		
Heaters	Custom Halogen Lamp, 400 Watt 230VAC or 115VAC 50/60Hz.		
Temperature chamber	50 -160°C set in 1°C steps		
Temperature profile	Standard (one step) Step, up to 3 temperatures Ramp, vs. time Rapid option for Single and Step methods		
I/O	RS-232 Bi-directional Serial port USB Serial Output USB HUB Serial interface		
Stored Test Setting	1 Default setting, 49 User Settings Stored by number and alpha/numeric name		
Stored Test results	Up to 99 test results stored by name		
Data Output	Ability to send data out via RS232 or USB Serial port. Ability to store test results and test settings to USB memory device using USB Host interface.		
Beeper	To sound when keys are pressed or to announce end of a test, independently enable/disable		
Language	English, German, French or Spanish		
RTC	Real Time Clock Date formats, YMD, DMY, MDY Time 24 hour clock		
Calibration	Manual calibration using external mass		
	20 or 50g	50 g or 150 g	100 or 200g
Power	Factory set, 115VAC or 230VAC, 50-60Hz., 400 watt.		
Fuse	5A, time lag, High Breaking capacity, 5 x20mm		
Environment	0°C to 40°C up to 90% RH. non-condensing		

## WEEE 2012/19/EU



This device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements. Disposal of batteries (if fitted) must conform to local laws and restrictions.

Cet appareil ne peut être éliminé avec les déchets ménagers. L'élimination de la batterie doit être effectuée conformément aux lois et restrictions locales.

Dieses Gerät nicht mit dem Hausmüll entsorgt.

Dispositivo no puede ser desechado junto con los residuos domésticos

Dispositivo non può essere smaltito nei rifiuti domestici.

## FCC / IC CLASS A DIGITAL DEVICE EMC VERIFICATION STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules and Canadian ICES-003/NMB-003 regulation. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## CALIFORNIA PROPOSITION 65 - MANDATORY STATEMENT

WARNING: This product includes a sealed lead-acid battery which contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



Adam Equipment products have been tested with, and are always supplied with mains power adaptors which meet all legal requirements for the intended country or region of operation, including electrical safety, interference and energy efficiency. As we often update adaptor products to meet changing legislation it is not possible to refer to the exact model in this manual. Please contact us if you need specifications or safety information for your particular item. Do not attempt to connect or use an adaptor not supplied by us.

**ADAM EQUIPMENT** is an ISO 9001:2008 certified global company with more than 40 years' experience in the production and sale of electronic weighing equipment.

Adam products are predominantly designed for the Laboratory, Educational, Health and Fitness, Retail and Industrial Segments. The product range can be described as follows:

- Analytical and Precision Laboratory Balances
- Compact and Portable Balances
- High Capacity Balances
- Moisture analysers / balances
- Mechanical Scales
- Counting Scales
- Digital Weighing/Check-weighing Scales
- High performance Platform Scales
- Crane scales
- Mechanical and Digital Electronic Health and Fitness Scales
- Retail Scales for Price computing

For a complete listing of all Adam products visit our website at [www.adamequipment.com](http://www.adamequipment.com)

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