

AE 503 INDICATOR

Easy Reference:

Model name of the indicator:	
Serial number of the unit:	
Software revision number (Displayed when power is first turned on):	
Date of Purchase:	
Name of the supplier and place:	

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P.N. 7.00.6.6.0413, Revision A, September 2018

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1.0 INTRODUCTION

- The **AE 503** from Adam Equipment is an accurate, fast and versatile general purpose weighing indicator with built in label printer that fulfills both weighing and data printing needs through a range of easy to operate functions including parts counting, percentage weighing and check-weighing.
- The **AE 503** provides clear and visible indication when a weight is below the low limit, between the limits or above the high limits using LCD symbols showing LO, OK and HI. These symbols can also work in conjunction with an audible alarm for check weighing.
- Supplied with a RS-232 bi-directional interface and real time clock (RTC) allowing you to set parameters and keep data print outs organised.
- The **AE 503** has a sealed colour coded keypad and a large easy to read liquid crystal type display (LCD) supplied with a backlight.
- Includes automatic zero tracking and accumulation facility that allows the weight to be stored and recalled as an accumulated total.

2.0 SPECIFICATIONS

INPUT SECTION	
Load Cells	Up to 8 , 350 ohm load cells
Connection	4 wire Auto compensation for long distance < 10 meters
Excitation	5Vdc
Sensitivity	0.02uv/e
Zero Range	Power on + - 20 % Manual + - 4%
Signal range	- 20mV - 20mV
ADC Sensitivity	0.01862uv/ADC (Maximum input voltage approximately 18.6 mV)
DIGITAL SECTION	
Maximum Range	Typically 1kg – 600000kg
Divisions	Up to 60,000
Weigh units	kg / g / lb / oz / lb:oz / ct / dr / mm / T
Stabilisation Time	2 Seconds typical
Operating Temperature	0°C - 40°C 32°F - 104°F
Power supply	12V 3 A
Battery	Internal rechargeable battery 6V 10AH
Calibration	Automatic External
Display	6 digits LCD digital displays with symbols for units
Indicator Housing	ABS Plastic
Overall Dimensions (wxdxh)	300 x 170 x 125mm
Net Weight	2.8 kg / 6 lb
Applications	Weighing and check weighing
Functions	Weighing, Check Weighing, Parts counting, check-counting, , Animal Weighing, Accumulating memory,
Interface	RS-232 bi-directional interface English, German, French, Spanish and Italian

3.0 INSTALLATION

3.1 UNPACKING

This indicator must be connected to a load cell platform and calibrated as necessary to match the platform and user requirements.

The user's application and the technical specifications of the platform or load cell will determine the necessary configuration.

3.2 LOCATING



- The indicator should not be placed in a location that will reduce the accuracy.

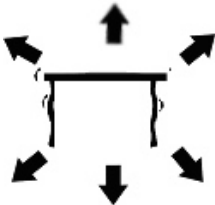
- Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.

- Avoid unsuitable tables. The table or floor must be rigid and not vibrate.



- Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.

- Do not place near vibrating machinery.



- Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the indicator in water.

- Avoid air movement such as from fans or opening doors. Do not place near open windows or air-conditioning vents.



- Keep the indicator clean. Do not stack material on the indicator or platform when not in use.

3.3 CONNECTION

This indicator must be connected to a load cell platform and calibrated as necessary to match the platform and user requirements.

The AE 503 has a connector configured for a 4-wire load cell. Connect the load cells/platform to the indicator as shown below. The cable length should be as short as possible, using a large size wire to minimise errors due to resistance in the leads.

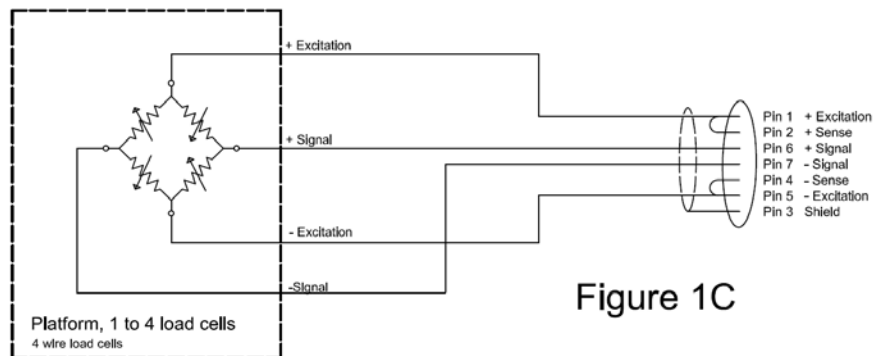
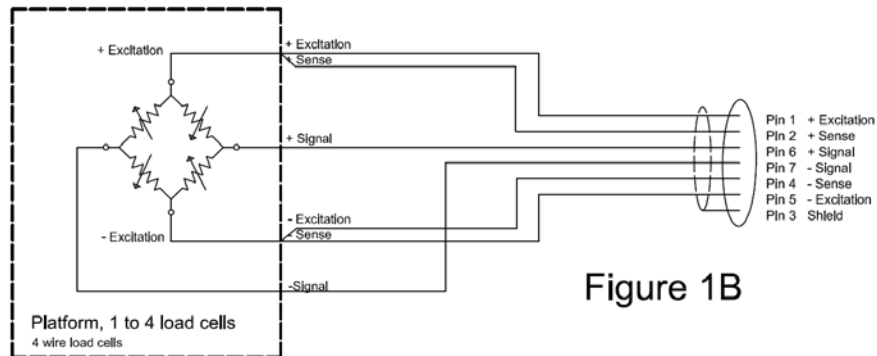
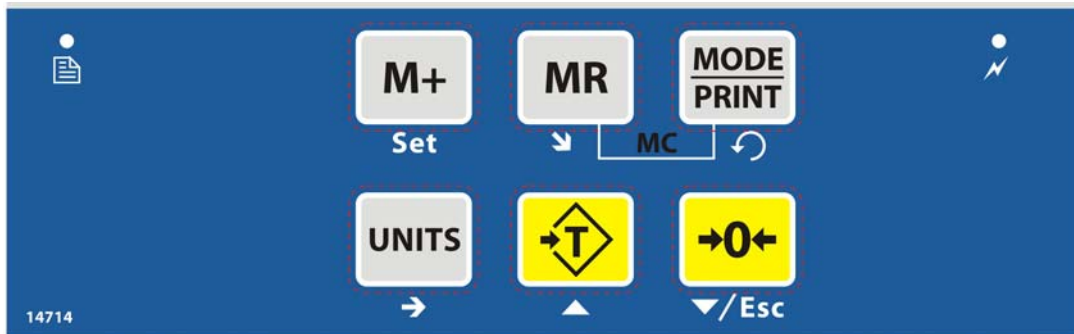



Figure 1B shows a preferred method to attach a 4 wire load cell, using a 6 conductor cable to go from the indicator to the platform or load cell where it connects to the 4 wires from the load cells. The Excitation and sense wires are connected together near the load cell.

For less exacting applications you can connect the excitation to the sense at the connector.

4.0 KEYPAD AND DISPLAY

4.1 KEYPAD



KEYS	PRIMARY FUNCTION	SECONDARY FUNCTION
→0←	Sets the zero point for all subsequent weighing. The display shows zero.	Decrease displayed value Exit from Menu
	It tares the indicator and stores the current weight in memory as a tare value, subtracts the tare value from the weight and shows the results. This is the net weight.	Increase displayed value
UNITS	This is used to select the weighing units from a preset list of available units.	To change parameter value in menus To move to next digit in check weighing settings
<u>MODE</u> PRINT	It is used to print or output the results to a PC or printer using the RS-232 interface.	Press and hold print key to enter check weighing settings Select next menu item
M+	Used for weight memory accumulation	Press hold to get into setting menu
MR	Recall memory accumulation results	Select next menu function

4.2 DISPLAY

The LCD has unique symbols to indicate the following:

→0←

The display is at Zero

O

The indicator platform is Stable

Net

Net weight- The scale has been tared

Kg / Lb / g / ct / dr / oz /
lb:oz / mm / T / Ton

Symbols shown for the units

LO-BAT or 

Low Battery



The indicator is in Tare mode

%

The indicator is in Percent weighing mode

PCS

The indicator is in Parts counting mode



The indicator is in Check weighing mode

:

The colons “:” are used to separate pounds from ounces and for the real time clock.



value

Indicator is in dynamic mode showing holding

5.0 BATTERY

- The indicator can be operated from the rechargeable battery, if desired. The battery life is determined by the number and impedance of the load cells connected. With a single load cell and without use of the print function the battery life can last up to 150 hours before needing to be recharged.
- When the battery needs charging the low battery symbol will appear on the top right of the LCD display indicating the battery needs charging. The indicator will still operate for a period of time before the display will show the flashing symbol “**LO-BAT**” meaning the indicator can no longer be used until recharged and will automatically switch off.
- To charge the battery, simply plug into the mains power supply. The indicator does not need to be turned on. Once fully charged remove the mains power supply to help protect the battery.
- The battery should be charged for 8 hours for full capacity.
- To the right of the display is a LED to indicate the battery charging status. When the indicator is plugged into the mains power the internal battery will be charged. If the LED is red the indicator needs to be put on charge, the LED will continue to stay red until the battery is fully charged. When the indicator is fully charged the LED will turn green.

5.1 BACKLIGHT

The backlight for the LCD can be set by the user to always off, always on or automatic (on only when the indicator is in use or a key is pressed). See setting of the parameter “**P3 FUN BL**” in section 10.3.

5.2 SLEEP MODE

Sleep mode can be set by the user to disable the feature or to a pre-set time interval. See setting of the parameter “**P3 FUN PWR**” in section 10.3.

6.0 OPERATION

6.1 ZEROING

- You can press the **[Zero]** key at any time to set the zero point from which all other weighing and counting is measured. This will usually be necessary when the platform is empty. When the zero point is obtained the display will show the zero indicator.

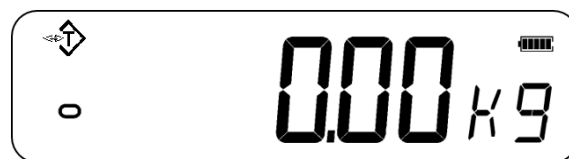


- The indicator has an automatic re-zeroing function to account for minor drifting or accumulation of material on a connected platform. However, you may need to press **[Zero]** to re-zero the indicator if small amount of weight is still shown when the platform is empty.

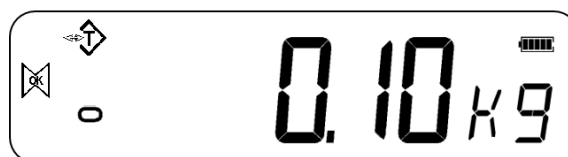
6.2 TARING

6.2.1 Manual tare

- Zero the indicator by pressing **[Zero]**. The zero indicator will be on. Place a container on the pan and its weight will be displayed.
- Press **[Tare]** when the reading is stable. The weight that was displayed is stored as the tare value and it is subtracted from the display, leaving zero on the display. The stable and Tare will be on.



- As a product is added only the weight of the product will be shown. The indicator could be tared a second time if another type of product was to be added to the first one. Again, only the weight that is added after taring will be displayed.



NOTE:

When the container is removed a negative value will be shown. If the indicator was tared just before removing the container, this value is the gross weight of the

container plus all products which were removed. The zero indicator will also be on as the platform is back to the same condition it was when **[Zero]** was pressed last.

If the value to be tared is very large the scale may not allow you to tare the value as the negative value will not fit on the display area. In this case the scale will beep twice when the **[Tare]** key is pressed and then return to normal weighing without setting tare.

6.3 WEIGHING

To determine the weight of a sample, first tare an empty container if used, then place the sample in the container. The display will show the weight and the unit of weight currently in use.

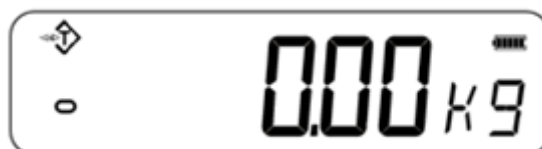


To change the weighing unit, press the **[Units]** key. The various weighing unit options can be enabled by the user in the parameters section. See section 10.

6.4 PARTS COUNTING

The indicator can be used to count parts based on the average weight of a sample weighed. When more parts are added the total number of parts are displayed.

- If a container is to be used, place this container on the platform before entering parts counting and press **[Tare]**.



- Ensure Parts Counting is enabled in the parameters section. See section 10.
- To enter the Parts Counting mode, when in normal weighing mode press **[Units]** until 'PCS' is displayed. Check if the reading is "0", if not, press **[Zero]** and the zero symbol will be displayed.



- Put the desired sample on the weighing platform in order to determine its average weight. Once stable, press **[Mode/Print]**, “N – XXX” will be displayed which stands for the sample quantity. For example, if 20 parts are placed on the platform then 20 would needed to be entered as the sample quantity. This is needed in order to determine the average piece weight.
- Press **[Units]** to shift the flashing digit and use **[Tare]** to increase and **[Zero]** to decrease the value as necessary.
- Press **[MR]** to weigh the samples and determine an average piece weight.



- If the parts are too light to measure accurately, the count may become faulty. It is suggested that the samples to be weighed should each weigh more than the resolution of the indicator.
- After the sample has been weighed the indicator will count any other parts added by applying the average piece weight to the weight of the parts to be counted.



- The **[Tare]** key works normally during this time, so it is possible to tare the display with a container on the platform.
- To count a different sample quantity press **[Mode/Print]**. The display will show the last used sample size. Either use this sample size with a different part or enter a new sample size as above.




Press **[Units]** to return back to normal weighing mode. If the sample is left on the platform the weight of the sample will be displayed.

6.5 CHECK-WEIGHING

Check-weighing is a procedure that can be displayed on the indicator or via an alarm when the weight on the platform meets or exceeds the values stored in the memory. The memory holds values for a high limit and a low limit. Either or both the limits can be set by the user.

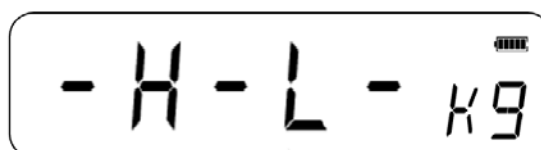
NOTE:

The LCD display will indicate whenever the weight is within or exceeds the limits by showing 'OK', 'HI' or 'LO'.

	Mass on the platform is above the high limit
	Mass is between the limits
	Mass is below the low limit

6.5.1 Setting up check weighing parameters

- In normal weighing mode, hold down **[Mode/Print]** to enter the check weighing function.
- The limits are displayed in the weighing unit in use.
- The display will show “- H - L -”. The hyphens represent the audible alarm whilst the “H” represents the high limit and the “L” represents the low limit. The alarm can also be set to OFF.



- When the displayed hyphens flash, this is an indication that the beep is ON.

There are 6 various customisable alarm options:

- H L	The beep is on when the weighing mass is more than the set high limit.
H - L	The beep is on when the weighing mass is between the set high and low limit.
H L -	The beep is on when the weighing mass is below the set low limit.
- H L -	The beep is on when the weighing mass is both more than and below the set limits.
- H - L	The beep is on when the weighing mass is in between the set limits and more than the set high limit.
H - L -	The beep is on when the weighing mass is in between the set limits and below the set low limit.

NOTE: The single hyphen depicted in the table above represents the flashing hyphen which means the beep is on.

- Press **[Units]** to select the desired alarm setting.
- Press **[Mode/Print]** to save the selected alarm setting and to move on to setting the high and low limits.
- The display will show “H000.00” with one digit flashing.
- To set the high limit, Press **[Units]** to select the digit.
- Press **[Tare]** to increase the flashing digit and **[Zero]** to decrease the flashing digit as necessary.
- Press **[Mode/Print]** to accept the high limit and move on to set the low limit. The display will show “L000.00” with one digit flashing. Use the same method to set the low limits and press **[Mode/Print]** to confirm the low limit. The parameters will be saved and return to normal weighing mode.

6.5.2 Setting up while parts counting or % weighing

During parts counting and percent weighing the limits are set in the same way as above. The limits are displayed in pcs or %.

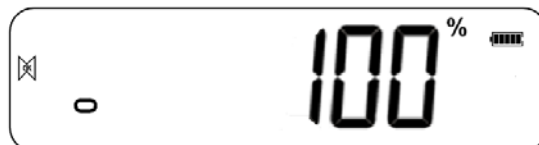
6.6 PERCENT WEIGHING

The indicator can be set to perform percent weighing.

The indicator will use a mass on the platform as the 100% reference weight.

- In normal weighing mode, press **[Units]** until the display shows “**PCS**”.
- Press **[Mode/Print]** twice to move into percentage weighing.
- The display will show “**S – 100%**” which stands for the 100% reference weight (or object).
- Add the reference weight to the to the platform and press **[MR]** The indicator will set the sample mass on the platform as 100% reference weight and enter percentage weighing.

NOTE: if there is no reference weight on the platform and percent weighing function is entered, this function will not work and the indicator will return back to PCS and to normal weighing mode.



- Remove the sample weight. When another item with a different weight value is put on the pan, the relative % value will be shown against the initial reference sample value. For example, if 3500g is placed on the platform and percent weighing is selected, the display will show 100.00%. Remove the 3500g weight and place a 3000g weight. The display will show 86% as 3000g is 85.7% of 3500g.

NOTE: decimal points will be rounded up or down depending on the place value when weighing against the reference weight.



- Press **[Units]** to return to normal weighing.

6.7 ANIMAL (DYNAMIC) WEIGHING

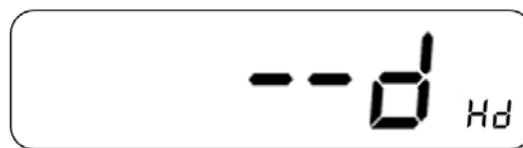
The indicator can be set to animal (dynamic) weighing for weighing any items that are unstable or may move. Ensure this function is turned on; See section 10.3.

The indicator uses a special filter to minimise the effects of any movement on the platform.

- Hold down **[M+]** for 3 seconds. The first option is “**P1 UNT**”, press the **[MR]** key 2 more times to display “**P3 FUN**”.



- Press the **[Mode/Print]** key. “**OFF PWR**” will be displayed. Press the **[Mode/Print]** key to advance to the third function, “**XXd - Hd**”, Animal weighing.

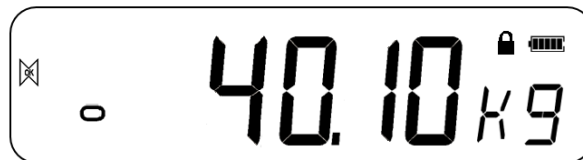


- To use the Animal Weighing function it is necessary to set the amount of filtering required for the animals to be weighed. More active animals will require a higher level of filtering to give a stable result.
- The display will show “**XXd - Hd**” where x is a value from 10 d to 70 d. The higher the value the greater the amount of filter there will be. To increment the value shown press the **[Units]** key, to decrease the value press **[Zero]**. Press the **[Mode/Print]** key to accept it. Press **[MR]** twice, then press **[Zero]** to return to weighing mode.

The indicator is now ready to weigh in Animal weighing.

6.7.1 Animal weighing procedure

- With the platform empty the display will show zero weight. Place containers or blankets onto the platform and press the **[Tare]** key to zero the display. The indicator may go into the animal weighing procedure when the items are placed on the platform but will return to showing zero when the **[Tare]** key is pressed.
- Place the animal to be weighed on the platform.
- When a stable reading is found, the display will show this value, and the display will temporarily lock. A beep and padlock symbol will appear on the display to indicate a stable reading has been found.



- Manual unlocking and Peak hold options are available within the animal weighing function. Enter the animal weighing function as instructed in the above section.
 - To select the manual unlocking option within animal weighing, the display will show “XXd - Hd”. Use the **[Tare]** key until the display shows “MNU”. This is the Manual unlocking option within the animal weighing function. This will hold the stable value and can be manually unlocked using the zero key. Press **[MR]** twice and then press **[Zero]** to return to normal weighing.
 - When using the manual unlocking option within animal weighing, press **[Zero]** to manually unlock the held weight.
- To select the peak hold function within animal weighing, use the same method as above until “PEK” is displayed. Press **[MR]** twice and then press **[Zero]** to return to normal weighing. The peak hold function allows the peak weight to be held and displayed even after the load has been removed.
- To weigh a second animal press the **[Tare]** key if necessary to zero the display, and place the next animal on the platform. It is also possible to simply place the next animal on the scale without clearing the last value first. The indicator will detect the new weight and hold it as before.
- The indicator will remain in animal weighing mode until the function is turned off. See section 10.3.

6.8 ACCUMULATED TOTAL

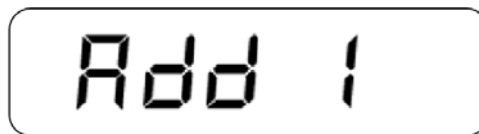
The indicator can be set to accumulate when a weight is added to the platform.

NOTE:

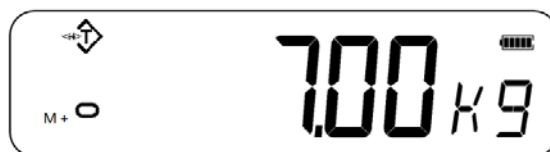
1. The accumulation function is available only during weighing. It is disabled during parts counting or percent weighing.
2. The accumulated weights will be stored in depending upon the weighing unit in use.
3. If at any time the weighing units are changed, the accumulated data will be lost.

6.8.1 Accumulation procedure

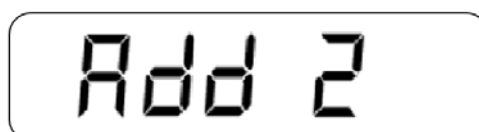
- In normal weighing mode, add the sample to the platform and press **[M+]** to save the present weight. The display will show “**ADD XX**” (XX stands for the records serial number).



- The display will show the total weight and automatically return to weighing mode. The symbol “**M+**” will show on the left-hand side of the display to indicate that the user is still in the accumulation procedure.



- When the indicator is at zero place a second weight on the platform. When stable press **[M+]** to accumulate the weight. The display will show “**ADD 2**” for 2 seconds and then show the new total before automatically returning to normal weighing.





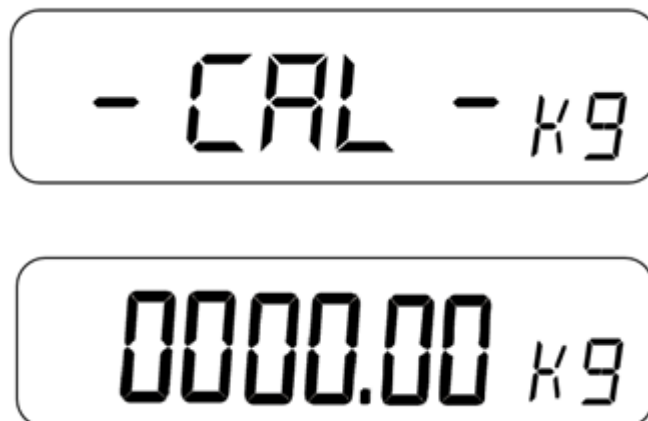
- Continue until all weights have been added. This can continue up until the memory capacity is reached of 99 entries.
- To view the total in memory, press the **[MR]** key when the indicator is at zero. The display will show the total number of accumulation "**ADD XX**" and the total weight before returning to zero.
- To exit the accumulation procedure, hold down **[MR]** and press **[Mode/Print]**. The display will show "**CLr**", this will delete the record and return to normal weighing mode.
- The Accumulation function can also be set to function automatically, See Section 10.3 for automatic accumulation.

7.0 CALIBRATION

- The AE 503 indicator can be calibrated using a range of different unit weights, depending on the weighing unit selected at the time of calibration.
- Calibration before use is recommended for best accuracy. It is suggested that the indicator be calibrated when first installed and any time the indicator is moved to a different environment.

7.1 SIMPLE CALIBRATION

- To start the calibration, in normal weighing mode ensure all weights are removed from the platform. Hold down **[Tare]** for 3 seconds to enter the calibration function, the display will show “-CAL-” and then the calibration weight value.



- Enter the desired calibration weight value using **[Units]** to move the flashing digit, **[Tare]** and **[Zero]** to increase or decrease the value, the display will now show the calibration mass expected.
- Place the weights onto the platform, when the stable symbol is displayed press the **[Mode/Print]** key to confirm the calibration. The display will then return to normal weighing and display the calibrated result.

NOTE:

If the calibration result is outside the calibration value selected by more than double or less than half then the calibration cannot pass.

8.0 RS – 232 SPECIFICATION

The AE 503 indicator is supplied with bi-directional RS-232 interface as standard. The indicator when connected to a printer or computer outputs the weight with the selected weighing unit through the RS-232 interface.

Default Specifications:

RS-232 output of weighing data

ASCII code

9600 Baud (user selectable)

8 data bits

No Parity

Connector:

9 pin d-sub miniature socket

Pin 3 Output

Pin 2 Input

Pin 5 Signal Ground

The indicator can be set to print text in various languages.

8.1 PRINT OUT DATA FORMAT

Data format will be different depending on the data format mode. See section 10.2 for more information on the different data output modes.

8.1.1 Continuous mode output

S	T	,	N	T	,		1		2	3	4	.	5	6		k	g	CR	LF
Header1			Header2				Data (8 digits in length)								Unit		0D 0A		

Header1										Header2															
S	T	,	STABLE										N	T	,	NET									
U	S	,	UNSTABLE										G	S	,	GROSS									
O	V	,	OVER WEIGHT										T	R	,	TARE									

Weighing data is in ASCII code which may show follow words:

“0” - “9” ----numbers

“ ” ----- blank

“ . ”-----Point

“ - ” -----negative sign

8.1.2 Answer mode output from PC

R		T		CR		LF	
Header				13		10	

Header(order)			HEX
R	N	Read net weight	52 4E
	G	Read Gross weight	52 54
	T	Read Tare weight	52 47
	C	Read ad code	52 43
	U	Read unit weight (counting scale)	52 55
	Q	Read quantity (counting scale)	52 51
S	Z	Zero	53 5A
	T	Tare	53 54
	U	Change Unit	53 55

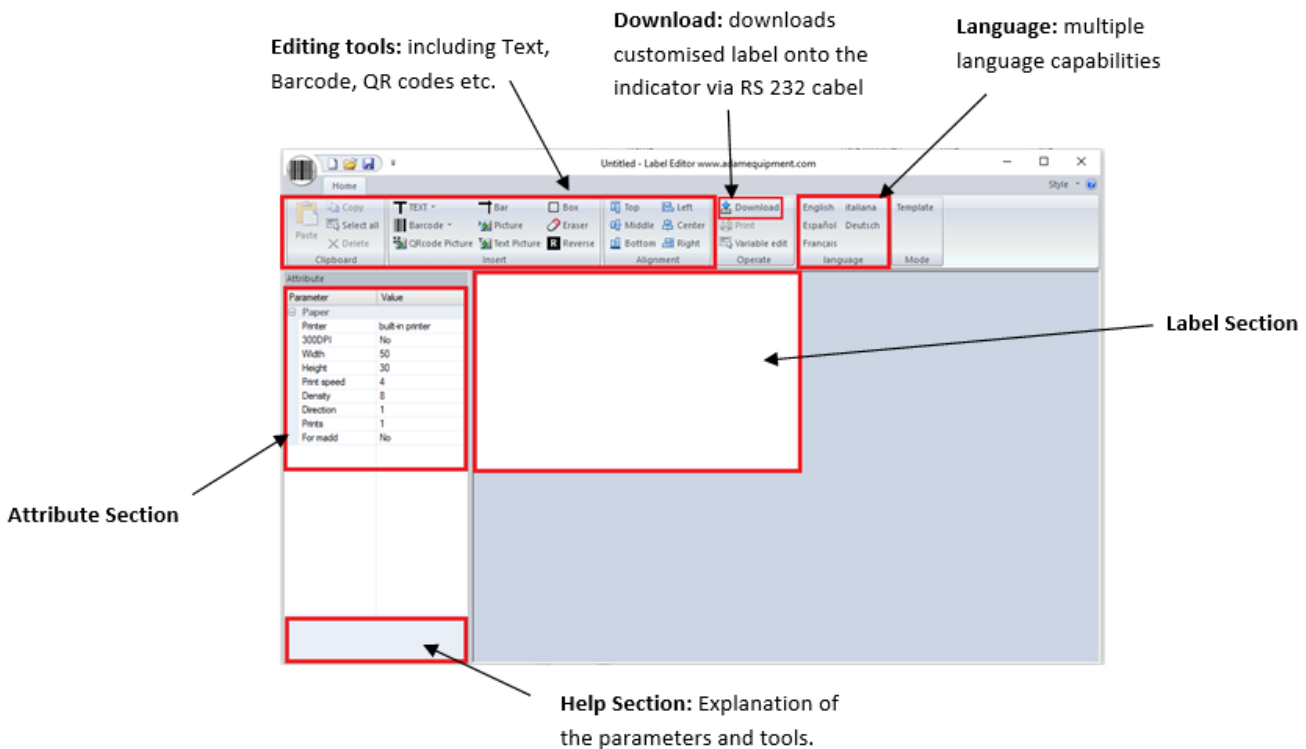
9.0 LABEL PRINTING FUNCTION

- In normal weighing mode, press **[Mode/Print]** to print through built in label printer. Printing can also be done through RS 232 connectivity.
- Labels can also be printed via the built-in printer when in the accumulation recall function and in parts counting.

9.1 LABEL EDITING COMPUTER SOFTWARE

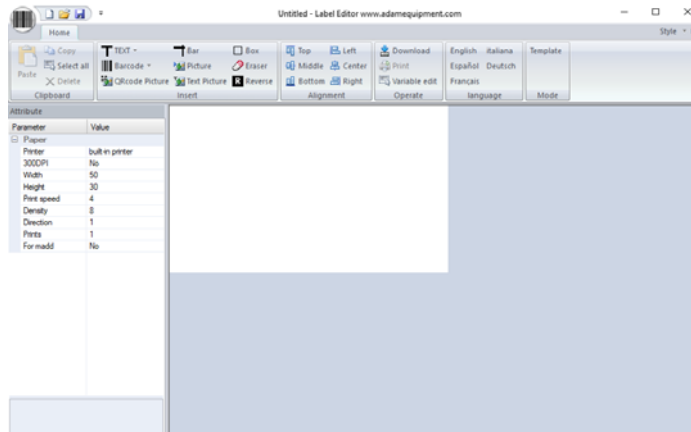
The AE 503 is supplied with RS-232 interface which allows for connection between computer and indicator to edit labels for the inbuilt label printer and set printing parameters.

9.1.1 Label editor software interface

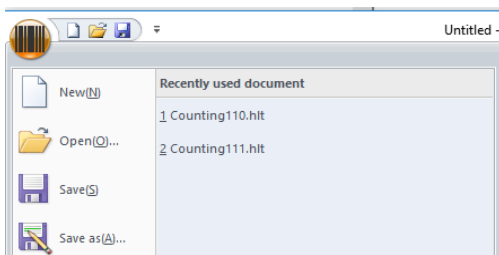


9.1.2 Operation method

- (1) Connect the indicator to the PC using the RS 232 cable provided, this is so the customised label can be downloaded straight to the indicator after completion.
- (2) Start up the label editing software.



- (3) Press the barcode icon in the top left-hand corner, the following menu will be displayed:



From here select to start a new label design, open a previously saved template or save a template to your PC.

- (4) Set the parameters

Attribute	
Parameter	Value
Property	
Printer	built-in printer
Width	400
Height	240
Print speed	4
Direction	0
Prints	1
For madd	No

Printer: Chose the type of printing method (Default: built in printer)

Width: Length of label (unit is dot, 8 dot = 1mm, 400 dot = 50mm)

Height: 400 dot = 50mm

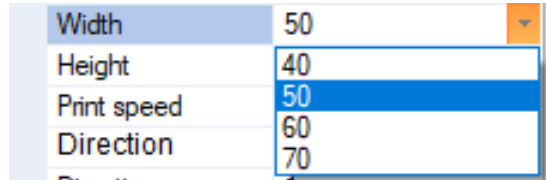
Print speed: The default value is 4

Direction: Print direction, 0 is positive, 1 is negative

Prints: How many labels will be printed when the print button is pressed

For madd: For the accumulative function, will print when adding up.

To change the parameters, left click the desired parameter and a drop-down arrow will appear with different options to select from.



9.1.3 Label customisation

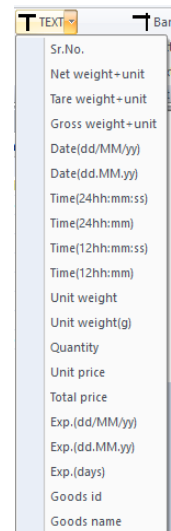
Once parameters have been set, the label can be customised and edited to the desired preference.

9.1.4 Adding text

- Various data can be added onto the label in which the text can be customised.
- Left click the TEXT icon and the drop down will appear
- Left click on any variable to add to the label. For example, net weight
- Net weight will appear on the label as: 12.34 kg

The added information can be moved and place anywhere on the label by clicking and holding down.

- The text can also be further customised in the parameter section on the left-hand side



Attribute	
Parameter	Value
Property	
X	17
Y	20
Font size	3(12x24)
X Zoom	1
Y Zoom	1
Rotation	0
TEXT	N.W.(7)Unit

- Taking the net weight example: 12.34 kg
- To add text, click the “TEXT” parameter on the left hand side of the display.

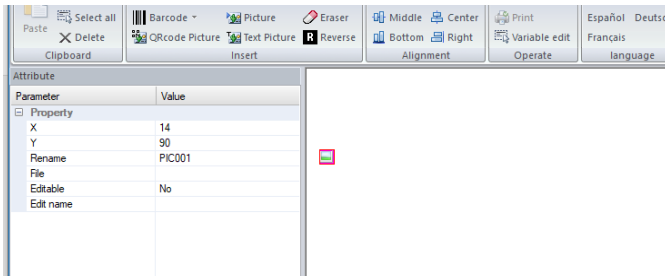
TEXT N.W.(7)Unit

- Add the desired text into the box.

Notation U
TEXT N.W. N.W.(7)Unit N. W 12.34 kg

9.1.5 Adding pictures

- Pictures can be added to a label design, the pictures will show as a black and white picture. To add a picture, left click the picture icon in the editing tools section.
- The picture will appear as a small icon before uploading the image file via the parameter settings section.



X: 8 = 1mm, 500=50 mm

Y: 8 = 1mm, 400 = 50mm

Rename: Rename picture, if there are pictures with the same name from previous labels they may be replaced

File: left click on the 3 dots that appear to select the picture to put on the label

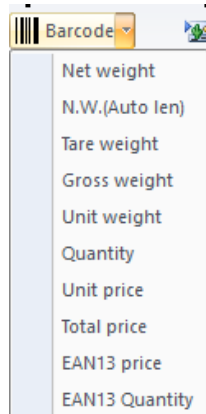
Editable: whether the part of the template editing mode can be edited

- Text images can also be added to the label design, follow the same procedure as above by pressing the ‘Text picture’ icon in the editing tools section and add text in the ‘TEXT’ section.

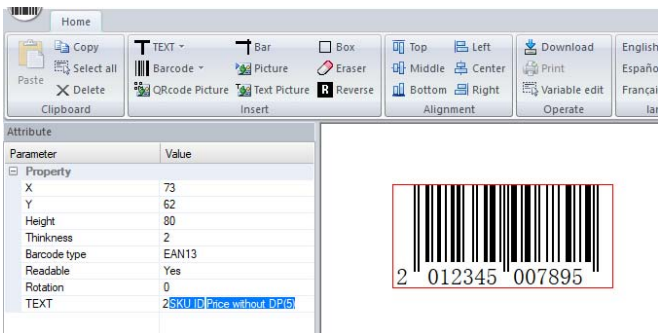
9.1.6 Adding barcodes

Bar codes can be added to the label which are capable of holding various weighing data.

- Left click the arrow next to the barcode icon and select the information for the barcode to hold, the barcode will then be added to the label.



- The barcode also has customisable parameters:



Height: The height of the barcode

Thickness: Minimum line width

Barcode type: Type of barcode (food retailers usually use EAN13)

Readable: Enable or Disable the Print out of the text below the barcode

Rotation: Rotation angle (0 = clockwise)

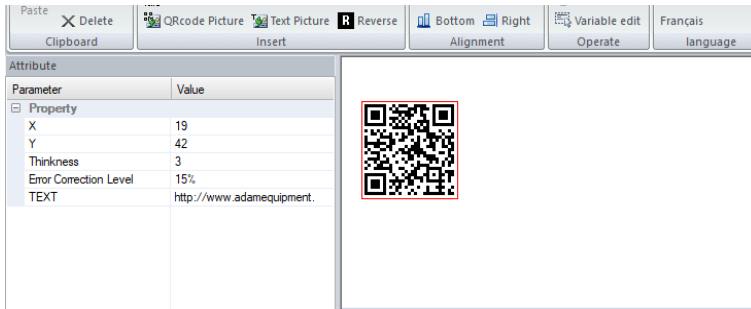
Text: Can insert this variable (EAN13 barcodes must be numeric and 12 digits long. SKU must be 5 digits long, for price no dot needs to be chosen)

NOTE: if the text for the barcode is entered incorrectly then an error message will appear indicating a wrong entry.



9.1.7 Adding QR codes

- Left click the QR code icon located in the editing tools section and click on the label area to place the QR code picture. The parameters for the QR code are as follows:



X: 8=1mm, 400=50mm

Y: 8=1mm, 400=50mm

Thickness: The size of the QR code will affect the size of the QR code. The bigger in size, the easier to scan

Error Correction Level: The bigger the percentage, the easier it is to recover lost print data

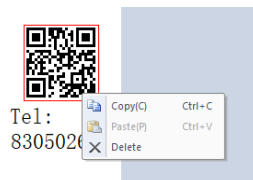
Text: The text entered can be a web link or common words so when the QR code is scanned with a smart device it will take the user to the address entered in this parameter

9.1.8 Deleting items

- Select the item you want to delete by left clicking it and press the delete button on the keypad.
- A message will appear asking the user to confirm the deletion. Press 'OK' to confirm and the item will then be deleted from the label.



- Alternatively, right click the item and click 'delete'. The same message of confirmation will appear, click 'OK' to confirm.

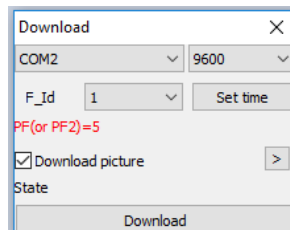


9.2 LABEL DOWNLOAD PROCEDURE VIA RS 232 CABLE

- Save your final label design in preparation for download via RS 232 to the AE 503 by pressing the save icon located in the top left hand corner of the software.
- Export the image by selecting the export icon from the barcode icon in the top left-hand corner

- Press the download icon 

- Select the necessary serial port and baud rate and click “**download**”.



10.0 PARAMETER SETTINGS

Pressing the **[M+]** key allows the user to access the parameters for customising the indicator. The parameters are split into 3 groups-

1. Unit parameters (**P1 Unt**)
2. Communication parameters (**P2 trA**)
3. Indicator Functions parameters (**P3 FUN**)

- When **[M+]** is held down for 3 seconds, the display will first show “P1 Unt” for Unit parameters.
- Press the **[MR]** key to advance through the groups “P1 Unt”, “P2 trA” , “P3 FUN”. Press **[Mode/Print]** to enter the desired group of parameters.
- If you press **[Zero]**, the indicator will exit the User Parameter section and return to normal weighing.

10.1 UNIT PARAMETERS

- Shortcut to enter this group is to press and hold the **[M+]** key for 3 seconds. The display will go directly to “P1 Unt”.
- Press **[Mode/Print]** to enter the group.
- Continue to press **[Mode/Print]** to scroll through the various unit weight options.
- Press **[Units]** to view the options for the unit settings.
- Press **[Mode/Print]** to confirm the change and then advance to the next unit parameter.
- Press **[MR]** to exit out of the unit parameter setting.
- Press **[Zero]** to return to normal weighing mode.

This group of parameters:

- Enables or disables weighing units.
- Enables or disables the parts counting function.

Parameter	Description	Options	Default setting
P1 Unt	<p>Enable or disable weighing units by turning them “On” or “OFF”. All units set to “On” can be used.</p> <p>Enable or disable the Parts counting function by turning the function “On” or “OFF”.</p>	<p>Kg - Kilograms g - Grams lb - Pounds oz - Ounces ct - Carats dr - Drams lb:oz – Pound Ounce mm - Momme T - Taels Tn – Ton</p> <p>PCS – Parts Counting</p>	kg

10.2 COMMUNICATION PARAMETERS

- Shortcut to enter this group is to press and hold the **[M+]** key for 3 seconds and press **[MR]**. The display will go to “**P2 trA**”.
- Press **[Mode/Print]** to view the list of parameters.
- Continue to press **[Mode/Print]** to scroll through the various communication parameters.
- Press **[Units]**, **[Tare]** and/ or **[Zero]** to view the options for the unit settings.
- Press **[Mode/Print]** to confirm the change and then advance to the next unit parameter.
- Press **[MR]** to exit out of the unit parameter setting.
- Press **[Zero]** to return to normal weighing mode.

This group of parameters can be set by the user for setting the printing mode, PC communication, baud rate, check weighing etc.

Parameter	Description	Options	Default setting
XX Mod	Data Transmission mode via RS 232 connectivity. All compatible with PC command.	1 - Continuous sending mode 2 - Stable sending mode 3 - Answer sending mode 4 - Manual sending mode 5 - Stable sending mode 6 - Manual sending mode 5 and 6 are effective when connected to a printer	1 Mod
X PFM	Print format.	0-1 - Label Printer 2 - 4 – Paper Printer 5-19 – Download from the label editor	0
XX ADD	Used for multiple PC communication.	1-26	1
XXXX BPS	Baud rate	1200 2400 4800 9600 19200 38400 56000 57600 115200	9600
N X X	Check bit, data bit, stop bit settings.	N 8 1 E 7 1 0 7 1	N 8 1
XX CHK	Enable or disable the check weighing function.	On CHK Off CHK	On
X Md2	Built in printer mode	1-4 Dual serial port 5 Auto 6 Manual	6
X PF2	Print format built in printer.	0-19	5
X MAP	Enable point after memory accumulation	On Off	Off

Shortcut to enter this group is to press and hold the **[M+]** key for 3 seconds and press **[MR]** twice. The display will go to “**P3 FUN**”.

10.3 FUNCTION PARAMETERS

- Press **[Mode/Print]** to view the list of parameters.
- Continue to press **[Mode/Print]** to scroll through the various indicator parameters.
- Press **[Units]**, **[Tare]** and/ or **[Zero]** to view the options for the unit settings.
- Press **[Mode/Print]** to confirm the change and then advance to the next unit parameter.
- Press **[MR]** to exit out of the unit parameter setting.
- Press **[Zero]** to return to normal weighing mode.

This group of parameters are used to control the operation of the indicator including functions such as animal weighing, accumulation function, sleep mode and the backlight.


Parameter	Description	Options	Default setting
XXX PWR	Enable or Disable sleep mode. Can set sleep mode over a 6 – 60 seconds of inactivity in which the backlight will be switched off.	OFF 6 12 18 24 30 36 42 48 54 60	OFF
XX BKL	Enable or Disable the backlight or set the back light to only come on when in use to help maintain battery life.	ON OFF AUTO	ON
XXX Hd	Enable or disable animal weighing function. Select division range. Enter manual unlocking and Peak lock within the animal function.	OFF 10d 20d 30d 40d 50d 60d 70d 80d MnU PEK	--
XXX MLE	Enable or disable the Hi/Lo alarm when weight value is negative.	OFF On	OFF
XXX ZPE	Controls the Hi/Lo alarm when weight value is zero.	ON OFF	OFF
XXX LCS	Hi/ Lo function to work after weight on the platform has stabilised.	On OFF	OFF

XXX PZP	Zero range when indicator is turned on.	0 3 5 10 20 50 80 100	0
XXX CST	Waiting for stability after pressing Zero and Tare.	OFF ON	OFF
XX MAM	Accumulation function can be set to Automatic or manual. When set to automatic, the accumulation function will automatically add up any weights added to the platform.	ATO MAN	MAN
XX SST	Enable or disable the display showing the time in sleep mode.	On OFF	On
XX.XX.XX STT	Set date information and display format.	Use [units] key to change format of year/month/date [zero] and [tare] key to modify numbers.	Default format year/month/date.
t xx.xx sst	Set real-time clock and display format.	Use [units] key to change format of hour/minute. [zero] and [tare] key to modify numbers. [units] key to move flashing digit	Default format HOUR /MINUTE

11.0 ERROR MESSAGES

During the initial power-on testing or during operation, the indicator may show an error message. The meaning of the error messages is described below.

If an error message is shown, repeat the step that caused the message. If the error message is still shown then contact your dealer for support.

ERROR CODE	DESCRIPTION	POSSIBLE CAUSES AND SOLUTIONS
ADO---	Over A /D resolution range	Remove the weights off the pan, contact supplier
AOL---	Low A / D resolution range	Remove the weights off the pan, contact supplier
OVR---	Over load (max: capacity +9e)	Remove the weights off the pan, contact supplier
FLASHING BATTERY SYMBOL 	Low battery alarm.	Charge battery
Lo-Bat	Low power alarm	Charge battery

12.0 SERVICE PARAMETERS

12.1 ACCESS TO THE SERVICE PARAMETERS

Access to the indicator parameters and calibration parameters is controlled in all indicators. In this case the display will show the passcode request screen, “Pn----“. To continue enter a passcode as described below.

- Hold **[M+]** for 3 seconds and press **[MR]** until the display shows “Pn----“.
- Enter the factory password: **[Units] [Units] [Tare] [Units]** then press **[Mode/Print]** to confirm the entered password. If the password has been entered correctly the display will show “P4 FIL”.
- Press **[MR]** to scroll through the parameters and **[Print/Mode]** to enter.

The parameters available are:

“P4 FIL”	Filter Setting
“P5 C-d”	Capacity and Division
“P6 LX”	Multistage Calibration
“P7 CAL”	Calibration
“P8 EC”	Calibration Store and Restore

12.1.1 Filter setting (P4 FIL)

Parameter	Description	Option
X FIL	The filter tracks and averages weighing to produce the most accurate measurement and smooth out instabilities. A higher filter number means more filtering and a slower, but possibly more stable and accurate response. A lower number will produce a quicker measurement but it may be less stable and accurate.	0 (low) - 5 (high) Press [Units] to modify the parameter and [Mode/Print] to move on to the next parameter.
X ZEO	Filter intensity: Set a value to be used to determine balance stability at zero point. The number corresponds to the number of divisions the zero point may potentially fluctuate by. A larger number corresponds to a larger stable zone.	0 (low) – 8 (high) Press [Tare] to increase value, [Zero] to decrease value and [Mode/Print] to move on to the next parameter.

X ZTR	Creep tracking: When load cell creeps set this parameter to help stabilize the indicator. The load cell creep is often caused by environmental conditions and other variables.	0 (low) – 5 (high) Press [Tare] to increase value, [Zero] to decrease value and [Mode/Print] to move on to the next parameter. Then press [MR] to return to Menu.
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12.1.2 Capacity and division (P5 C-D)

Parameter	Description	Option
XXXX CAP	XXXX is capacity, when weight is more than +9d of this parameter the scale will show an error message.	Press [Units] to modify the decimal point, press [Tare] and [zero] to modify digits. Press [Mode/print] to move on to the next parameter.
XXXX DIV	Division setting: Set minimum resolution depending on precision requirements.	0.01, 0.02, 0.05, 0.1, 0.0001, 0.0002, 0.0005, 0.001, 0.002, 0.005. Press [Tare] to increase value, [Zero] to decrease value and [Mode/Print] to move on to the next parameter.
XX HP	Dual division setting: Enable or disable.	Set to On or OFF using the [units] key, [Mode/Print] to confirm.

Then display shows “**Off dp**”; press **[Mode/Print]** to return to menu.

12.1.3 Multistage calibration (P6 LI)

Parameter	Description	Option
LINE 1	“ LINE 1 ” will appear briefly on the display to show that you are entering the linearity calibration.	
XXXXXX	Set the 1 st linearity calibration weight value; place the weight on the scale, press [MODE/PRINT] .	Use [Units] key to move flashing digit, [Tare] to increase and [Zero] to decrease the value.
LINE 2 Briefly displayed	Set the 2 nd linearity calibration weight value; place the weight on the scale, press [MODE/PRINT] .	
LINE 3 Briefly displayed	Set the 3 rd linearity calibration weight value, place this weight on the scale, press [MODE/PRINT] . Display shows ‘good’ if linearity successful	

Scale automatically then steps on to next parameters P7 (CAL).

12.1.4 Calibration (P7 CALI)

Parameter	Description	Option
XXXX WEI	Enter the weight of the weight that will be calibrated.	Use [Units] key to move flashing digit, [Tare] to increase and [Zero] to decrease the numeric values. Press [Mode/print] to move onto the next step.
XXXXX CAL	AD value of zero, the platform must be empty. Wait for the stabilization symbol to appear.	Once stabilized press [Mode/print] to move onto the next step.

XXXXX LOD	<p>AD value, at this time place the previously entered weight on the platform.</p> <p>Wait for the stabilization symbol to appear.</p>	<p>Press [Mode/print] to calibrate, if calibration is successful “PASS” will be displayed.</p> <p>At this point the indicator returns to normal weighing mode</p>
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12.1.5 Calibration store and restore setting (P8 EC)

Parameter	Description	Option
E1 ruL	<p>“E1 ruL” will display for 1 second, XXXX is the calibration value.</p> <p>For example, if you do not have the suitable weights by entering the calibration value this can then be restored.</p>	<p>Press [Units] to modify the calibration value and move the flashing digit.</p> <p>Press [Tare] to increase and [Zero] to decrease the numeric values then press [Mode/Print] to move onto the next setting.</p>
E2 Ldo	<p>“Ldo” will display for 1 second, XXXX is the value of multistage calibration/linearity.</p> <p>It has 4 parameters, if user has carried out multistage calibration then the parameters are effective. The values can be enter which means multi stage calibration does not need to be done.</p>	<p>The setting will go through the various parameters of the multistage calibration.</p> <p>Press [Units] to modify the calibration value and move the flashing digit.</p> <p>Press [Tare] to increase and [Zero] to decrease the numeric values then press [Mode/Print] to move onto the next setting.</p>
E3 Ld1	Then fixed value displayed	Press [Mode/Print]
E4 Lro	Then fixed value displayed	Press [Mode/Print]
E5 Lr1	Then fixed value displayed	Press [Mode/Print]

13.0 SERVICE INFORMATION

This manual covers the details of operation. If you have a problem with the indicator that is not directly addressed by this manual then contact your supplier for assistance. In order to provide further assistance, the supplier will need the following information which should be kept ready:

A. Details of your company

- Name of your company:
- Contact person's name:
- Contact telephone, e-mail,
- Fax or any other methods:

B. Details of the unit purchased

(This part of information should always be available for any future correspondence. We suggest you to fill in this form as soon as the unit is received and keep a print-out in your record for ready reference.)

Model name of the indicator:

AE 503 indicator

Serial number of the unit:

Software revision number

(Displayed when power is first turned on):

Date of Purchase:

Name of the supplier and place:

C. Brief description of the problem

Include any recent history of the unit. For example:

- Has it been working since it's delivered
- Has it been in contact with water
- Damaged from a fire
- Electrical Storms in the area
- Dropped on the floor, etc.

WARRANTY INFORMATION

Adam Equipment offers Limited Warranty (Parts and Labour) 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 purchaser must inform its supplier or Adam Equipment Company. The company or its authorised Technician reserves the right to repair or replace the components at any of its workshops depending on the severity of the problems. However, any freight involved in sending the faulty units or parts to the service centre should be borne by the purchaser.

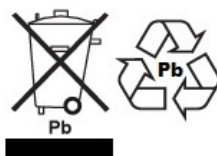
The warranty will cease to operate if the equipment is not returned in the original packaging and with correct documentation for a claim to be processed. All claims are at the sole discretion of Adam Equipment.

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.

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.



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

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