

## **Calibration**

### **Q: What is the difference between a Span and a Linearity calibration?**

A: A span calibration sets the balance at 2 points Usually zero and full capacity. A linearity calibration sets the balance at 3 points. Usually zero, half capacity and full capacity.

### **Q: How often should an Ohaus balance be calibrated?**

A: To determine how often a balance needs to be calibrated you should first collect a history on the balance. This is done by checking the balance at a set interval and recording the results. The interval should be determined by how sensitive the application is. A good place to start may be once at the beginning of each day for non critical applications or once an hour for critical applications. When the check shows the balance is not weighing correctly it should be calibrated and the calibration noted. You can now use the history to set the intervals. This history can also be used to document and justify the intervals if you are audited.

### **Q: Is readability and accuracy the same thing?**

A: No, the readability of a balance is the smallest quantity that the balance will display. Accuracy is the difference between the known weight of a sample and the displayed weight. The accuracy of a balance can be measured only when the balance is in its operating environment.

### **Q: 1. Can my Ohaus electronic balance be pre-programmed Example like the supermarket weighing machines which can give the total price according to the weight?**

**2. I would like to find out whether the balance can be programmed in such a way so that the amount of a certain drug added to a bag of infusion fluid can be "weighed" since every drug has its own specific gravity. Instead of the price per 100g, the specific gravity is used and from the weight, the amount of drug added is given.**

A: Ohaus does not do special programming of our balances unless a lot of units are involved. The cost of programming would make small quantities very expensive. However most Ohaus balances have an RS232 output to communicate with a computer serial port. Hopefully it's possible in your application to do the special programming in a computer.

### **Q: I am unable to calibrate My Scout 200g balance because I have no calibration weights. It continues to display error 2. Is there a way to find out if a calibration will help with out buying and waiting for calibration masses.**

A: You need to perform a linearity calibration to find out if the balance just needs a calibration or needs to be repaired. To test this you can use a roll of nickels as a substitute for a 100g mass. Nickels are pretty consistant at 5g each.

In the case of a Scout displaying an error 1, a linearity calibration must be performed to find out if the problem is the calibration or the balance needs to be repaired. If an error 4 is displayed during the calibration the balance needs to be repaired. You can use the nickels in this case, but if the calibration fixes the problem you must purchase a test mass to perform a good calibration. Remember the balance is only as good as the masses used to calibrate it. You can purchase test masses directly from Ohaus. Call 1-800-672-7722 and ask for Technical Sales.

## **RS 232 and other out puts**

### **Q: Will a standard RS232 cable work with an Ohaus balance?**

A: It depends on the model of the balance. Some of the recent models are designed to use standard cables. On older models the wiring at the balance end of the cable is specific to Ohaus, so the balance requires an Ohaus RS232 interface cable. The best thing to do is to check the instruction manual

**Q: Can the RS232 cable I bought from Ohaus be extended?**

A: In general yes. Problems can occur if the speed of transmission is above 9600 baud, but the cables can be extended quite a bit. If a transmission problem occurs consider lowering the speed. There is so little data coming out of a balance that the difference between 1200 baud and 9600 baud is hardly noticeable.

**Q: Can I enter data directly into a spreadsheet from my electronic balance?**

A: Ohaus balances are designed to work with simple terminal programs. HyperTerminal is a program that is included with windows and works very well for this purpose, you probably already have it. In order to get information into a windows program like a spreadsheet you will need a program called a Software Wedge. Ohaus sells a very good software wedge written by TAL industries called "Software Wedge for Windows". You can get more information on this by calling 1-800-672-7722.

**Q: I need a balance or scale with a 4 to 20 ma DC output. Does Ohaus make anything like that?**

A: Our balances all have a serial output using the RS232 format and others. We have none with an analog output. There are companies that make converters from RS232 to 4 to 20 ma current loop. Try searching the web.

**ADVENTURER**

**Q: What is the size of the draft shield on the Adventurer (AR Series) analytical balance (.1mg) models?**

A: The dimensions are;  
Chamber Inside; 6 1/4" wide x 7 1/2" deep x 9 3/8" above pan  
Side doors ; 4 3/4" wide x 9 1/2" high.  
Top Door; 4 5/8" wide x 6 1/4" deep

**Q: What is the size of the draft shield on the Adventurer (AR Series) precision balance (1mg) models?**

A: The dimensions are;  
Chamber inside; 7 1/2" wide x 7 1/4" deep x 7 1/2" above pan  
Side doors ; 4 3/4" wide x 7 3/4" high.  
Top Door; 4 5/8" wide x 6 1/4" deep

**Q: I am unable to send a command from the computer, like print, to the scale. I know they are communicating because when I physically push print on the scale I get a value on the computer monitor. How can I test the serial communication?**

A: When sending a print command, an upper case P, to the Adventurer you need to terminate the command with a CR and a LF.

**Q: When I calibrate my Adventure balance using weights accuracy class F2, sign "\*" and 1500g flashes, but the display value is still increasing. This phenomenon is observed in SPAN calibration as well as in LIN procedure. The results of performance tests is good up to 400-500 grams, then after 500 g to 1500g the deviation is about 140-200 mg. Using the service manual for Adventure series, I cleaned magnet and coil only.**

A: As long as the weights you are using have been properly maintained you should be ok in the regard. It looks to me like your balance is not accepting the calibration. This would point to a problem on the main PCB. Try swapping for a known good PCB and see if the balance calibrates. Then put the original EEPROM (socketed) in the new board. If it still calibrates the problem is on the PCB. If not you need a new EEPROM,

you will have to either order it from Ohaus directly, or have a local dealer order it from Ohaus directly.

**Q: The manual for my Adventurer balance shows that pins 5 & 8 are jumpered together (at the balance end). Documentation found on this website suggests that pins 5 & 6 are jumpered together. Which is correct? Also, if I use HyperTerminal, what do I have to do to be able to read back the weight from the scale?**

A: Connecting pins 5 to 6 is something you have to do with most Ohaus balances. The Adventurer does not require it but it will not hurt anything. Use the following :

Balance to PC(9 pin)

Pin 2 to Pin 2

Pin 3 to Pin 3

Pin 7 to pin 5

No other pins need to be connected in order to communicate with HyperTerminal.

In order to communicate you need to match the communications parameters with the balance and turn the handshaking off.

### **Adventurer Pro**

**Q: My Adventurer Pro balance will not calibrate. It keeps displaying "Time Out" instead of finishing.**

A: Note:

1. The second line of the display flashes to indicate action is required or the balance is working. This is normal.
2. A linearity calibration should always be followed by a span calibration.
3. If the linearity calibration will not work try a span calibration then a linearity calibration then another span calibration.

### **Service Linearity Calibration**

1. Turn the balance off.
2. Press and HOLD the On/Zero and the Tare keys until the unit turns on ( can take up to 10 seconds) as the unit powers up it will flash "Service" on the display then some other screens and finally it will display "Menu" on the first line and "ramp" flashing on the second line.
3. Press no (print key) the display will then read "menu" on the first line and "linearity" on the second line.
4. Press yes (On/Zero key) the display will read "- - 0 - -" on the first line "busy" on the second line. Wait until the display says "xxx g" on the top line "put load 1" on the second line.
5. Add the weight indicated. After a short time the display will read "xxx g" on the top line "add load 2" on the second line.
6. Add the additional weight indicated. After a short time the display will read "xxx g" on the first line, "off load 1" on the second line.
7. Remove the first weight from the balance. After a short time the balance will display "xxx g" on the first line, "off load 2" on the second line.
8. Remove the second weight from the balance. The balance will briefly display "Linear" on the first line. "done" on the second line. The balance will then display "menu" on the first line, "span" on the second. Go to step 5 below.

### **Service Span calibration:**

1. Turn the balance off.
2. Press and HOLD the On/Zero and the Tare keys until the unit turns on ( can take up to 10 seconds) as the unit powers up it will flash "Service" on the display then some other screens and finally it will display "Menu" on the first line and "ramp" flashing on the second line.
3. Press no (print key) the display will read "menu" on the first line and "linearity" on the second line.
4. Press no (print key) the display will read "menu" on the first line and "span" on the second line.

5. Press Yes (On/Zero key) the display will briefly display "- - 0 - -" on the first line "busy" on the second line. After a short time "xxx g" on the first line "put weight" on the second line.
6. Add the weight indicated. After a short time the balance will display "0 g" on the first line "clear pan" on the second line.
7. Clear the pan. After a short time the balance will briefly display "span" on the first line "done" on the second line. It will then display "menu" on the first line "end" on the second line.
8. Press yes. The balance will exit the service menu and display weight.

**Q: Every time I turn on my Adventurer Pro balance I have to reset the time and date. I also have to turn the RS232 back on. I am using the balance on batteries is this normal?**

A: This is normal and was done to increase the battery life. The only way to prevent it is to run the balance using the AC Adapter.

**Q: I have followed the instructions on how to interface my printer to my Adventurer Pro. I am getting a lot of extra output that I do not need. The worst is that it prints the weight value twice. Is it possible to print only the weight that is displayed?**

A: Yes you can simplify the printout. It will require going into the Print1 or Print2 menu and then going to the Content sub menu. In order to print the displayed value with no unit of measure.

- PRINT-1 MENU
- OUTPUT WhenStable= Off
- OUTPUT GLP Tare= Off
- AUTO PRINT= Off
- CONTENT
- **NUMONLY= On**
- HEADER= Off
- GROSS= Off
- NET= Off
- TARE= Off
- REF= Off
- **RESULT= On**
- GLP= Off
- LAYOUT FORMAT= MULTI
- 4 LF= Off
- FORM FEED= Off

## **EC**

**Q: Is there easier way to get the APW loaded into an EC Counting Scale than sampling. I know the weights and do not want to take the time.**

A: Enter the Average Piece Weight (APW) on the keyboard. Then press APW. You can clear what you have entered by pressing the clear button.

## **MB 45**

**Q: What is the use of % regain on MB45 machine?**

A: It is used in the US by the wood and paper industries and possibly more that I am not aware of. The difference is the way the calculation is done. % Moisture loss = (wet mass - dry mass)/wet mass % Moisture regain (ATRO) = (wet mass - dry mass)/dry mass As you can see one tells you the percentage of moisture based on the original mass (wet) and the other gives you the percentage based on the actual weight of the dry sample without water.

**Q: When I use the Regain display on my MB45 I get negative results. I do not think this is possible.**

A: A software bug has been discovered that causes the result to be displayed with a negative sign in front of it. The calculation is correct if you ignore the negative sign.

### **Scout Pro**

**Q: I turn on the RS232 like it says in the manual, but every time I turn the balance off it comes back on with the RS232 set to off. I am using my balance on batteries.**

A: When using balances with SR 1.14 or less in order to extend battery life the RS232 is set to OFF every time the balance is turned on. If you use the AC adapter that came with the balance the RS232 will stay on. This was changed in subsequent versions to leave the RS232 on.

**Q: My RS232 also goes off when I turn my balance on. I am using the AC adapter I used with my old Scout balance.**

A: The AC adapter used with the old Scout balances was 9 VDC. The Scout Pro uses a different AC adapter (12 VAC). In order to know the AC adapter is being used the software looks for the AC, with the old adapter it only sees DC so it thinks the unit is on batteries and turns the RS232 off. You need to use the adapter that came with the balance. This is only true in balances with SR 1.14 or less, this was changed in subsequent versions to leave the RS232 on.

**Q: I also have a problem with the RS232 going off. I am using the AC adapter that came with the unit.**

A: The third reason for the RS232 to turn off is the way the menus are exited. After turning the RS232 on you must continue to END in the RS232 menu. After that you must go to E.N.D. in the main menu. If you do that the option should stay on.

**Q: When I took my balance out of the box and tried to weigh the test weight the 200g weight only weighed 175g. I tried to calibrate and there was no menu at all.**

A: Usually a balance will need calibration right out of the box due to shifts in the earth's gravity, but yours is too far off to explain it that way. Take off the weighing platform and look for the shipping lock. It is a small blue or red circle with a pointer that will point to either an open padlock or a locked padlock. For normal use point it toward the unlocked padlock. The mass should now weigh closer to 200g. In order to access the menus you will need to locate another lockout switch. Turn the balance over and near the front edge you will see a slide with the same unlocked and locked padlocks. Make sure the slide is pushed to the unlocked padlock. You will now be able to access the menus following the instructions in the manual.

**Q: I purchased an external display for my Scout Pro and it does not work. What is wrong?**

A: The TAD07 external display will only work with Scout Pro units with software version greater than 1.21.

**Q: When I turn on my Scout Pro I get an error 2 on the display and it will not do anything else.**

A: There are a few things that can cause an error 2. In order to clear it the first thing to try is a linearity calibration. The instructions are in your manual. If you see an error 4 during the linearity calibration your balance needs repair. Chances are the load cell has been damaged.

If the linearity calibration was successful (no error 4) and the error 2 persists you can try a service calibration. Here are the steps"

1. Turn the balance off.
2. Press and hold both buttons until the display shows rAMP then release.
3. Press and release the PRINT-Unit button

4. The display will show Lin
  5. Press and release the ON/Zero-Off button
  6. The display will show –C- blinking and then the first calibration mass.
  7. Place the mass on the balance and press the ON/Zero-Off button
  8. The display will show –C- blinking and then the second calibration mass.
  9. Place the mass on the balance and press the ON/Zero-Off button
  10. the display will show –C- blinking, then Done, then Lin again.
  11. Press and release the PRINT-Unit button repeatedly until the display shows End”
  12. Press and release the ON/Zero-Off button
  13. The balance will return to the weigh mode.
- If the error 2 still persists the balance will have to be serviced

### **SD Shipping Scale**

**Q: I know that my SD scale has the ability to use dynamic weighing but I can not turn it on,**

A: In order to use the dynamic weighing (animal weighing) mode the unit button must be pressed and released repeatedly until the unit (lb or kg) is displayed along with a dot roughly in the center. In order to turn the dynamic weighing mode off again the units button must be pressed and released repeatedly until the unit (lb or kg) is displayed with no dot.

### **PIONEER**

**Q: I want to do density determination tests using my Pioneer 4 place balance. I see there is a kit I can buy (part number 80850045) is this the best method?**

A: The kit you mention will not work with the Pioneer series 3 and 4 place balances. At the present time there is no kit that will allow this test in the weighing chamber. The below balance hook can be used however. If you need to perform the determination in the chamber you will need an Adventurer Pro.

### **Defender Scales and Indicators**

**Q: I want to use lbs as my unit of measure and my defender 3000 is set to kg.**

A: T31p, T31XW. Setup for additional units of measure.

In order to use units other than the default setting in the indicator they must be turned on in the units menu (see below). Then when you press and release the UNITS button the display will cycle through the units you have turned on. Release the button when the unit you want to use is displayed

Turning on or off additional units

Press and hold the Menu button until the display shows C.A.L. then release it.

The display will show C.A.L.

Repeatedly press and release the No button until the display shows U.N.I.T.

The display will show U.N.I.T.

Press and release the Yes button.

The display will show RESET.

Press and release No

The display will show UNIT kg

Press and release Yes to see the setting.

The display will show either ON or OFF.

Press and release No to change the setting or Yes to accept it.

The display will show UNIT kg

Press and release No

The display will show UNIT lb

Press and release Yes to see the setting.

The display will show either ON or OFF.

Press and release No to change the setting or Yes to accept it.  
The display will show UNIT lb  
Press and release No  
The display will show UNIT g  
Press and release Yes to see the setting.  
The display will show either ON or OFF.  
Press and release No to change the setting or Yes to accept it.  
The display will show UNIT g  
Press and release No  
The display will show UNIT oz  
Press and release Yes to see the setting.  
The display will show either ON or OFF.  
Press and release No to change the setting or Yes to accept it.  
The display will show UNIT oz  
Press and release No  
The display will show UNIT lb oz  
Press and release Yes to see the setting.  
The display will show either ON or OFF.  
Press and release No to change the setting or Yes to accept it.  
The display will show UNIT lb oz  
Press and release Exit.

**Q: I want to use lbs as my unit of measure and my defender 3000 is set to kg.**

A: T31p, T31XW. Setup for additional units of measure.  
In order to use units other than the default setting in the indicator they must be turned on in the units menu (see below). Then when you press and release the UNITS button the display will cycle through the units you have turned on. Release the button when the unit you want to use is displayed  
Turning on or off additional units  
Press and hold the Menu button until the display shows C.A.L. then release it.  
The display will show C.A.L.  
Repeatedly press and release the No button until the display shows U.N.I.T.  
The display will show U.N.I.T.  
Press and release the Yes button.  
The display will show RESET.  
Press and release No  
The display will show UNIT kg  
Press and release Yes to see the setting.  
The display will show either ON or OFF.  
Press and release No to change the setting or Yes to accept it.  
The display will show UNIT kg  
Press and release No  
The display will show UNIT lb  
Press and release Yes to see the setting.  
The display will show either ON or OFF.  
Press and release No to change the setting or Yes to accept it.  
The display will show UNIT lb  
Press and release No  
The display will show UNIT g  
Press and release Yes to see the setting.  
The display will show either ON or OFF.  
Press and release No to change the setting or Yes to accept it.  
The display will show UNIT g  
Press and release No  
The display will show UNIT oz  
Press and release Yes to see the setting.  
The display will show either ON or OFF.  
Press and release No to change the setting or Yes to accept it.

The display will show UNIT oz  
Press and release No  
The display will show UNIT lb oz  
Press and release Yes to see the setting.  
The display will show either ON or OFF.  
Press and release No to change the setting or Yes to accept it.  
The display will show UNIT lb oz  
Press and release Exit.

### **Voyager**

**Q: The density calculations based upon hand & computer calculations seem to be incorrect. Parts at 100 grams has an error of .01 & at 800g the error increases to .1 Is there any way to correct this?**

A: The Voyager takes the water density into account there is also a factor for the temperature. If you are not taking this into account it could explain the difference.

**Q: I have a Voyager top loading balance. The Auto Sample option works with volumes of 1.0 mL (~1.0 g). However, when I use Auto Sample with volumes less than 1.0 mL, this feature does not work; I have to press ENTER to advance to the next sample. Why?**

A: The Voyager is programmed so that 100d is the lower limit set to initiate the Auto Sample feature. In your balance 100d is 1.00g in the lower range.

**Q: I'm trying to connect my Ohaus Voyager Balance to my PC using the Ohaus BalanceTalk program. I understand that the failed connection is a hardware problem due to improper cable connection. I was wondering if anybody knew what the pin to pin configuration for the Ohaus Voyager Balance was.**

A: Here they are:

For a 9 pin serial port

Balance pin -----to----- PC pin

PIN 2 (TXD) -----to----- PIN 2 (RXD)

PIN 3 (RXD) -----to----- PIN 3 (TXD)

PIN 7 (GND) -----to----- PIN 5 (GND)

For balances other than Adventurer pins 5 & 6 must be shorted together at the balance and NOT connected to the computer

For a 25 pin serial port

Balance pin -----to----- PC pin

PIN 2 (TXD) -----to----- PIN 3 (RXD)

PIN 3 (RXD) -----to----- PIN 2 (TXD)

PIN 7(GND) -----to----- PIN 7 (GND)

For balances other than Adventurer pins 5 & 6 must be shorted together at the balance and NOT connected to the computer

### **Trooper**

**Q: I am having trouble trying to zero the weight of my large containers on my TR6RS. I have set the zero percentage in the setup menu to 100% but that did not help.**

A: A software bug has been discovered that does not allow zeroing more than a very low percentage of capacity. This is being fixed.

For the present you can use the Tare button to subtract the weight of your containers.

### **RANGER**

**Q: When attempting to calibrate my Ranger balance, the scale would not allow entering cal. I attempted several times to "unlock" via the unlock switch, according to the manual. The scale does not respond to this. Is there any other way to bypass the lock to access the parameters?**



A: You must hold the button until the turn on cycle returns to the segment check. If you are doing that there is something else keeping the balance from resetting. The balance will have to be either replaced or serviced.

**Q: Are there other feet available for the Ranger 6lb. scale without cavities so they can be used in the food industry?**

A: See the FD series. This is a new series of scales approved for the food industry.

**Q: How can I tell which version of the Ranger I have.**

A: Look at the display. There is an Ohaus logo either to the right or left of the display. Version 1 displays the logo on the right and is red on black. Version 2 displays it on the left and is red on white.

**Q: I can not get my Ranger count (or count plus) to weigh I any other unit of measure except the one displayed when it turns on.**

A: When using the new Ranger Count or Count Plus units the unit of measure can be toggled by pressing the Weight/Count button. If a count is displayed pressing this button will toggle the display between the count, Unit 1 and Unit 2