Air-Weigh®

Self-Weighing Truck and Trailer Scales™

5800 Series On-Board Scale
TRAILER SCALE SYSTEM

Installation, Calibration and Operation Manual

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⚠ Please Read Before Installing
Limited Warranty

For product failures due to material or manufacturing defects, Air-Weigh will replace or repair all air suspension components for up to 3 years from shipment date to the end-user Air-Weigh customer. These three-year components include: Displays, ComLinks, Air and Deflection Sensors, Power Cables, Air Sensor Assemblies, Air Sensor Harnesses, and all other associated external components. Air-Weigh assumes no responsibility for administering warranty claims directly with any third party end users.

The responsibility of Air-Weigh under this warranty is limited to the repair, replacement, or credit of the defective part or assembly.

This warranty does not cover incidental or consequential damage to persons or property caused by use, abuse, misuse, or failure to comply with installation or operating instructions. This limited warranty does not apply to any product that has failed due to accident, abuse, alteration, installation not consistent with printed installation instructions, improper maintenance, improper operation, or as a result of system integration or installation not explicitly approved in writing by Air-Weigh.

Air-Weigh and its resellers shall have no responsibility or liability for damages if the purchaser or any other person alters the vehicle incorporating Air-Weigh products. This limited warranty shall not apply to any product that has been repaired or altered by anyone not employed by Air-Weigh or not operated in accordance with the manufacturer's printed material delivered with this product.

Air-Weigh hereby expressly disclaims any and all implied warranties of any type, kind of nature whatsoever, and particularly any implied warranty of merchantability or fitness for a particular purpose not expressly stated by Air-Weigh in its printed material delivered with its products.

Some states do not allow the exclusion or limitation of incidental or consequential damages. If such laws apply, the limitations or exclusions contained in the terms and conditions of this Warranty may not apply. This warranty gives you specific legal rights and you may also have other rights, which vary state to state.

PROCEDURE FOR WARRANTY CLAIMS

1. In the event Air-Weigh requests to examine product prior to disposition, OR for repairs or replacements, Air-Weigh requires a Return Material Authorization (RMA) number to be issued before the item is returned. Contact Customer Support Department at (888) 459-3247 for an RMA number. Please reference this RMA number in all correspondence.

2. Claimed items shall be shipped freight pre-paid to: Air-Weigh, Customer Support Department, 1730 Willow Creek Circle, Eugene, Oregon 97402, USA. The Air-Weigh RMA number shall appear on the outside of the return packaging.

3. Air-Weigh shall examine returned material within 30 days after receipt, or sooner if mutually agreed upon. If Air-Weigh determines that the part or assembly was defective in material or workmanship and within the warranty period, Air-Weigh will repair or replace the part or assembly and return freight pre-paid. In the event Air-Weigh determines that the part or assembly cannot be repaired or replaced and is within the warranty period, a credit not to exceed the purchase price will be issued to the Air-Weigh customer.

4. Air-Weigh Accounting will process a credit memo and notify the Air-Weigh customer by email or fax. The Air-Weigh customer will process a corresponding debit memo and notify Air-Weigh Accounting.

5. If the part or assembly received by Air-Weigh does not meet the requirements of the warranty program set forth above, at the Air-Weigh customer's request the part or assembly will either be discarded, returned freight collect, or repaired or replaced at the Air-Weigh customer's expense and returned freight collect.

Contents

OVERVIEW

Trailer Scale Kit—Each trailer scale kit consists of the trailer scale module, an air suspension pressure sensor, sensor cable, and power cable. One Trailer Kit is installed on each trailer suspension in order to process weight data for each of the weight supporting suspensions in the vehicle

Specifications
Length 6.3 inches, Width 3.00 inches, Height 1.59 inches
Weight: 18 oz.
Temperature range -40 to 85C (-40 to 150F)
Input voltage range: 9.5 - 32 VDC
Alarm circuit current limit : 1.0 amps
Scale is weatherized (immersion to IP67) for mounting in exterior locations.

AW5802 TRAILER SCALE SYSTEM OVERVIEW

The AW5802 Trailer Scale converts trailer air-suspension pressure to an accurate on-ground weight. By comparing empty and loaded weights with empty and loaded air-suspension pressures, the scale is able to determine accurate weights for any suspension load. The scale will display the actual on-ground weight of each *axle group* to within 300 pounds (140 kgs.) An axle group is defined by the Height Control Valves (HCV), or leveling valves, on the suspension. For instance, a tandem trailer axle suspension typically has only one leveling valve, so the two axles are referred to as a single *axle group* or channel number. Once calibrated, the LCD display shows the weight in 20 pound increments. When the scale is set for kilograms, the LCD display shows the weight in 20-kilogram increments.

Additionally, any tractor equipped with an AW5700/5800 series scale will display AW 5802 trailer weight data while that trailer is connected via the 7-wire cord (J-560).

This user guide provides user and installation information for three different Air-Weigh Trailer Scales. These are:

5802	Trailer with a axle group with a single height control valve	
5804	Trailer with a single axle group with dual height control valves	
5882	Trailer with two axle groups (front and rear) each with a single height control valve (sometimes called a "Dolly")	

INSTALLATION

Before installation begins some considerations must be taken into account:

1. Where is the scale module being mounted?
2. Where is the sensor being installed?
3. Where is power connected?

Trailer scale kits come with specified cable lengths and the placement of all three elements mentioned must be within the range of those cables. As parts are installed, you may connect the cables. However, cables should not be secured in place until after the system has been installed and tested for operation. If possible, route cables with already existing wiring harnesses and secure with nylon ties every 10 to 16 inches.

1) Trailer Scale Module Mounting Instructions
Mount the trailer scale in a position that is easy for viewing during loading and somewhat protected from direct tire spray and road debris.
There are 3 methods of mounting the AW5802 Trailer Scale Module: Flush Mount, Van-type Bracket, and Frame Rail-type Bracket. In regions where severe weather is a consideration contact Air-Weigh for more information on protective enclosures.

NOTE: Ensure the backsides of all drilling surfaces are free of obstacles.
NOTE: Do not place strain on the wires leading from the scale connector plug as a sharp bend could cause the environmental seal to fail.

Flush Mount
Find a good location for placement of the trailer scale and clean the mounting surface. Ensure the area (front and back) is clear of all protruding debris and mark the necessary drilling locations. A 1 5/8-inch diameter hole will need to be cut to provide cable connection access to the back of the scale. Two ¼-inch holes should be drilled for mounting the scale

to the trailer surface. Finally, use accompanying mounting hardware to attach scale to the trailer surface.

Van-type Bracket

This application is mainly for van and refrigerated-type trailers, however this bracket can also be used on any surface-mounted installation. Find a good place on the side of trailer to mount bracket and mark positions where holes need drilling. Next, attach the scale to the bracket using provided hardware kit. Complete scale installation by drilling ¼-inch holes on trailer and installing the bracket/scale combination.

Frame Rail-type Bracket

This application is mainly for Low-Boy and Flatbed style trailers. Find a suitable mounting location on the frame rail (web) that allows easy viewing by the user. Using the bracket as a template, mark ¼-inch drilling locations where it will be secured to the trailer. Now mount the scale to the bracket and the bracket to the trailer. Once complete, the display will be tilted slightly upward to allow easy viewing.

2) Installing Air Pressure Sensor

Note: There may be more than one sensor to install per axle group or trailer.

1. Locate the suspension airlines and air bags for appropriate axle group.

2. Remove the airline connection at the top of the air bag.

3. Insert brass fitting 150-4081-000 into the top of the air bag. Securely tighten. Re-install original airline to this fitting.

4. Insert brass fitting 150-4093-000 into brass fitting 150-4081-000 as shown. Securely tighten.

5. Insert sensor 010-9080-00x into brass fitting 150-4093-000 and push until sensor is securely seated.

6. Insert sensor cable into the round 3 pin 150 Metri-pack connector on the sensor.

7. Route sensor cable to the trailer scale comlink and connect to trailer interface cable. For the DOLLY Scale/Front and Rear Axle option – the front sensor connects to the Sensor A jack and the rear sensor connects to the Sensor B jack of the Trailer Interface Cable (PN 014-0234-024).

NOTE: For sliding suspension trailers route all cables with existing harness umbilical. Improper routing could damage cables when the slider is moved

3) Connecting Power to Trailer Scale
There are two methods of connecting the power and ground cable to your scale - the ABS T-Breakout Connector (for most trailers with ABS systems) **OR** directly to the junction box's power and ground outlets.

ABS T-Breakout Connector Method
North American trailer manufacturers use one of two standard connectors when connecting the ABS brake system to the trailer's wiring harness. Air-Weigh has T-Breakout Connectors for both types for a quick and easy connection to power and ground. These T-Breakout Connectors do not interrupt power to the ABS ECU, and do not require splicing or soldering of wires. Most ABS-equipped trailers specify the use of a 5-pin Weather-Pack connector to supply power, ground and brake signals to the ABS ECU. The Weather-Pack connection requires using the Air-Weigh T-Breakout Connector.

When this manual was printed, these manufacturers were specifying a USA Harness connector that would use the Air-Weigh USA T-Breakout Connector:

Transcraft	Heil-Lancaster
J&L Tank	Kalyn-Siebert (KDP-80)
East (transfer, flats, walking floors	Eager Beaver

1. Locate the ABS ECU. Trace the ABS ECU power cable to its connection to the trailer wiring harness.
2. Unplug the 5-pin connection between the ABS ECU power cable and the trailer wiring harness.
3. Connect the ABS power cable and the trailer wiring harness to the ABS T-Breakout Connector. Ensure the locking tabs are locked securely.

NOTE: If using the USA harness T-Connector, ensure all pins are properly aligned and the white plug is firmly seated in its locking hole. Failure to do so will cause faults in your ABS system.

4. Connect the scale power cable to the ABS T-Breakout Connector. **Route scale power cable through the umbilical connection if the trailer is equipped with sliding suspension**. Be sure to use enough cable for proper sliding. Secure cable to the trailer wiring harness with wire ties to prevent vibration and damage.

Junction Box Method
1. Trace the trailer wiring harness to where it connects with a junction box. Remove cover of junction box to expose wiring array.
2. Connect Air-Weigh's BLUE power wire to the junction box's BLUE Aux. Wire (primary) or the BROWN or BLACK Marker light wires (secondary).
3. Connect Air-Weigh's WHITE ground wire to the junction box WHITE ground wire, or any other good ground source.

4) Alarm Installation (Optional)
The gray, sealed wire from the main wiring harness is the alarm circuit output. It can be connected to any self-grounded alarm device with a current draw of 1.0 amps or less. You must install a relay for any device that draws more than 1.0 amps. Do not disturb the sealed end of the wire if alarm is not installed.

Scale Display Overview
With the installation complete, the next step in setting up your Air-Weigh scale is to calibrate it. Before starting that process it's a good idea to become familiar with the Panel Display on the front of your scale. Below is a definition of what each button is used for. The function and use of these buttons remains the same throughout all operations of the scale.

Front Panel Keypad

Front Panel Keypad Buttons

1) **POWER** — press <POWER> once to turn on display, once more to turn off

display. The scale will continue to operate and provide weight data to tractor scale units even if the trailer display is off.

2) **MENU** — press <MENU> once to display menu selections. See "Menu Selections" below for details.

3) **ESC** — press <ESC> to go to previous menu selection. Pressing <ESC> before pressing <ENTER> during data entry will make the scale revert to its previous entry. Then pressing <ESC> a second time will return to the previous menu selection.

4) **ENTER** — pressing <ENTER> selects the flashing menu item. It is also used to enter weights during calibration.

5) **ARROW DOWN** — press <▼> to select menu option immediately below the flashing selection and to scroll the display to a lower number. Holding <▼> down increases the scrolling rate on numeric entry.

6) **ARROW UP** — press <▲> to select menu option immediately above the flashing selection and to scroll the display to a higher number. Holding <▲>down increases the scrolling rate on numeric entry.

CALIBRATION

There are two methods of calibrating the 5800 Series Trailer Scale: Selection of a pre-programmed suspension calibration from the scale menu during set-up **OR** by entering the EMPTY weights into the scale system when the vehicle is empty and entering the HEAVY weights into the scale system when it is heavily loaded. Use only one of these methods to calibrate the scale.

Note: A tractor scale is required to fully calibrate the DOLLY scale option.

Preliminary Considerations
The accuracy of the 5800 Series Trailer Scale depends on the accuracy of the certified scale used to calibrate or check weigh. Ensure that the in-ground scale is reliable, recently certified and in good repair. It is preferable to obtain all weight tickets from the same certified scale. This ensures comparative accuracy. Segmented scales, those that provide individual axle group weighs, are preferred. When segmented scales are not available, take extra precaution in calculating weights.

For the best calibration results, the truck and trailer should be in the configuration below:

- **Trailer parked on level ground**
- **Trailer brakes released**

- **Engine running.**
- **If possible, exhaust the suspension for 5 to 10 seconds and re-inflate to factory-specified ride height**

Once the 5800 Series Trailer Scale is calibrated, it is not necessary to re-calibrate unless the suspension characteristics change.

Assigning a PIN number during the set-up process will protect the calibration procedure. Normally a PIN number is not assigned until after the scale has been calibrated. By locking-out the calibration function on the trailer scale, you will prevent tampering when the vehicle is parked. For more information, see "Creating a PIN #" on page 20.

In some instances you may need to reprogram your scale type from Axle-Weight to Payload, or from Axle-Weight to DOLLY. Please contact Air-Weigh Support for instructions on how to do this. A special PIN number will need to be assigned to the scale to enable this feature. An alternate Trailer Interface Cable may also be required.

Methods of Calibrating the Scale
There are two methods of calibrating the 5800 Series Trailer Scale. Selection of a pre-programmed suspension calibration from the scale menu during system set-up, known as the *'Pre-Program Calibration'* or by entering the EMPTY weights into the scale system while the vehicle is empty and entering the HEAVY weights into the scale system while it is heavily loaded, known as **'Manual Calibration'**. Use only one of these methods to calibrate the scale.

Pre-Programmed Calibration
Many of the most popular trailer suspensions are available under the CALIBRATE menu in the scale for easy, **one-step selection during system set-up which doesn't require entering EMPTY or HEAVY weights**. In most cases, using the programmed calibration will result in the scale immediately displaying weight to within 300 lbs (140 kgs) of the actual on-the-ground weight.
Refer to the chart below for pre-programmed suspensions that are available at the time this manual was printed. More are being added as they become available. Most suspension manufactures have identification tags on their suspensions. Contacting your trailer manufacturer for suspension information can also be helpful.

SUSPENSION TYPES (AW Suspension Reference)					
Hendrickson	AA 23 2X	AA 25 2X	HKAT 50	Binkley	
(HNDRKSON)	AA 230 2X	AA 250 2X	HKA 250	(BINKLEY)	
HT 250 2X	AA 23 3X	HKANT 40	HT 230 2X	AIRLTE 2	
HT 250 3X	AA230 3X	HKA 180	HT 300 2X HKAT 46		
Dana	Meritor	NeWay	Ridewell	Watson-Chalin	
(DANA)	(MERITOR)	(NEWAY)	(RIDEWELL)	(WASOCH)	
RF 20 2X	RHP 2X	RL224 2X	240 US 2X	TA 300 2X	
RF23 2X		RL230 2X	240 US 3X	TI251 2X	
RS20 2X		RL250 2X	240 OS 2X		
RS23 2X					
RS40 2X					
2X= Tandem Axles 3X= Tridem-Axles					
NOTE: Software versions may be updated through time.					

Pre-Programmed Calibration Procedure

1) Press <MENU>, WEIGHTS will appear.
2) Press the up arrow <▲> 1 time, PROGRAM appears. Press <ENTER>

Step 1   Step 2
If PIN is needed for access, enter it at this time

3) CALBRATE appears. Press <ENTER>.
4) SUSPNSNS appears. Press <ENTER>.

Step 3

Step 4

5) Using the up/down arrows <▲ ▼> Scroll through the suspension choices until your particular trailers suspension **Make** is identified. Press <ENTER>. *(refer to chart above for suspension makes).*

6) Use the up/down arrows <▲ ▼> to identify which **Model** of suspension is being used for your particular trailer. Press <ENTER>.

Example – your choice may vary.

Step 5

Step 6

NOTE: Once the suspension is chosen, the scale returns to the main weight display.

At this stage the 'Pre-Programmed Calibration' set-up is complete. The next step is to confirm that the correct calibration is entered into your scale. Follow the quick steps below:
1) Press <MENU>, WEIGHTS will appear.
2) Press the down arrow key <▼> until DIAGNOSE is displayed, press <ENTER>.
3) Use the down arrow key <▼> again until CAL TYPE appears, press <ENTER>

4) Cross-reference the calibration on the screen with the one you intended to choose from the chart above. If they match you have successfully pre-calibrated. If not, follow the steps for this calibration method again.

NOTE: If your trailer's particular suspension is not among the choices within the scale Make and Model selection then the Manual Calibration Method must be used (Pg. 15).

Lastly, perform a *check-weigh* with a reliable ground scale to compare weights. In some cases, optional tires, wheels, and axles systems may cause the scale's initial accuracy to be unacceptable. In this case the calibration and weight display can be adjusted to match a reliable certified scale using the ADJUST function in the CALIBRATE menu. The ADJUST menu screen will not show until the trailer scale has been calibrated. If the difference is more than 300 lbs (140kgs), you may want to fine-tune the calibration using the ADJUST feature. Follow the work sheet below to identify amount of weight needing to be adjusted.

(Ground Scale Weight)		_____	(A)
(AW Displayed Weight)	-	_____	(B) (Subtract B from A. C is the Adjustment weight)
Adjusting Weight	=	_____	(C) (It's OK if a negative appears)

NOTE: If the weight needs to be adjusted more than +/-1500 lbs (680 kgs), then the Manual Calibration must be preformed.

NOTE: A Dolly Trailer Scale will alternate automatically between the front and rear axle groups, i.e.:
> ***F 12340 L (for lbs) or K (for kilos)***
> ***R 12340 L (for lbs) or K (for kilos)***

ADJUST WEIGHTS

NOTE: Only ADJUST weights if the EMPTY and HEAVY weights are off by the same amount, as they will both be corrected by using this feature.

Follow Step 1& 2 from the 'Pre-Calibration Procedure'.

> ***If PIN is needed for access, enter it at this time***.

3) CALBRATE appears. Press <ENTER>. Scroll to ADJUST using the down arrow key <▼>. Press <ENTER>

4) Using the up/down arrow keys <▲▼>, scroll to the Adjusting Weight (Line C from work sheet). Press <ENTER>.

Step 3   Example   Step 4

Once accepted the display will revert to the WEIGHTS screen and show an accurate weight.

Manual Calibration

If pre-programmed calibration is not available, then the EMPTY and HEAVY axle weights must be entered manually. When calibrating using this method the EMPTY weights *__must__* be entered while the vehicle is empty, and the HEAVY weights *__must__* be entered while the vehicle is heavily loaded.

It is recommended that both empty and full weights be taken on the same reliable, certified scale, preferably a segmented scale that will provide axle weights. The order of calibration — EMPTY or HEAVY — is not important; however, both EMPTY and HEAVY must be properly performed before the weight display is accurate. Once the calibration procedure is properly completed one time, the EMPTY or HEAVY weights can be updated or re-calibrated individually.

Note: A tractor scale is required to fully calibrate the DOLLY scale option.

Manual Calibration Procedure

NOTE: Remember, EMPTY or HEAVY weight calibrations can be entered in any order, but the HEAVY weights must be entered while the trailer is loaded, and the EMPTY weights must be entered while the trailer is EMPTY. Additionally, the scale must have both EMPTY and HEAVY weights entered before calibration is complete and accurate weights are displayed.

EMPTY WEIGHTS
1) Press <MENU>. WEIGHTS appears.

2) Press the down arrow <▼> 3 times until PROGRAM appears. Press <ENTER>.

Step 4   Step 5
If PIN is needed for access, enter it at this time.

3) CALBRATE appears. Press <ENTER>.
4) Use the down arrow <▼> and scroll to EMPTY WT. Press <ENTER>.
5) Using the up/down arrows <▲▼> scroll to the proper empty weight identified from a certified scale ticket. Press <Enter>.

HEAVY WEIGHTS
1) Press <MENU>. WEIGHTS appears.
2) Press the down arrow <▼> 3 times until PROGRAM appears.
3) Press <ENTER>.

If PIN is needed, enter it at this time.

4) CALBRATE appears. Press <ENTER>.
5) Use the down arrow <▼> and scroll to HEAVY WT. Press <ENTER>.
6) Using the up/down arrows <▲▼> scroll to the proper heavy weight identified from a certified scale ticket. Press <ENTER>.

Step 4   Example   Step 5

Once HEAVY and EMPTY weights are entered the calibration is complete.

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UNDO function

Like a computer's undo command, the UNDO function allows the last entry to be deleted and the previous data in that field returns to the display. If a mistake is made during the calibration process, use this function to correct your error.

NOTE: Assigning a PIN number during the set-up process can protect the calibration procedure. Normally a PIN number is not assigned until AFTER the scale has been calibrated. By locking-out the calibration function on the trailer scale, you will prevent tampering when the vehicle is parked. Refer to page 20 under 'Creating a PIN #' for instructions.

OPERATIONS

Once calibrated, your Air-Weigh 5800 Series Trailer Scale is ready to display trailer suspension weights in 20lb (20kg) increments, and be accurate to within 300lbs per axle group (140kgs) of a certified ground scale. Continued accuracy is established by following a few simple rules before taking weight readings.

1. Park the tractor and trailer on a level surface.
2. Release trailer brakes to relieve any binding in the trailer suspension.
   Chock wheels to ensure truck and trailer don't roll.
3. If equipped with a dump valve, dump air in trailer suspension for 5 – 10 seconds, then re-inflate to factory-specified ride height.
4. Accurate weight is displayed when numbers stop changing.

With Air-Weigh scales installed on the truck and trailer suspensions, your entire vehicle becomes the scale. When you want to weigh, remember that you need to repeat operation steps 1-4 every time.

Weighing a truckload trailer with just a scale on the trailer.

When the Bill of Lading (BOL) freight weight, combined with the tare weight of the vehicle, totals less than the legal GVW weight limit you can confidently legalize your axle weights by either adjusting the load or sliding the trailer suspension until the Air-Weigh Trailer Scale reads about 300 lbs. less than the legal axle weight. The weights on the tractor will automatically be less than the legal weight.

If you know the **trailer is legally loaded for GVW**, but need to know where to slide the trailer tandem to get the **axle weight distributed legally**, Air-Weigh scales will help you.

1. Your goal is to make sure that **EITHER** the drive axles **OR** the trailer tandems are about 300 lbs. below the legal limit of 34,000 lbs.
    1) If either scale is displaying 33,700 lbs, you KNOW the other end of the trailer is also legal.

NET PAYLOAD WEIGHT LEGAL FOR GVW
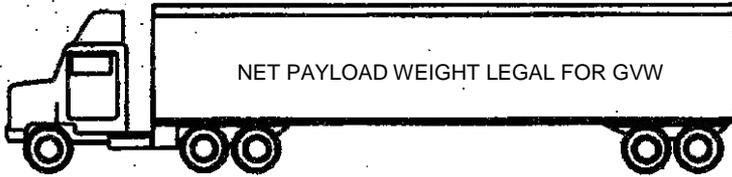
12,000 or more   **34,000**   **Legal Axle Weights**   **34,000**

Trailer Scale Examples
- Trailer scale shows 35,600 lbs.: Slide the tandems towards the rear until the scale shows 33,700 lbs.
- Trailer scale shows 32,340 lbs.: Slide the tandems towards the front until scale shows 33,700 lbs.

FUNCTIONAL OPERATIONS

How-To-Weigh instructions
HOW-TO-WEIGH instructions are displayed on the trailer scale in rotation with the actual weight screen. To turn off these instructions:

1. Press <MENU>, and scroll up <▲> to PROGRAM, press <ENTER>.
2. Scroll down <▼> to SETUP and press <ENTER>.
3. INSTRUCT will show on the display, press <ENTER>.
4. Press down <▼> to change the YES to NO and press <ENTER> to accept.   Once changed to NO, the reminders will no longer display.

To activate the instructions again, simply go back into the instructions screen and change the NO back to a YES.

Assigning Trailer Numbers

Note: Do not assign a trailer number to the DOLLY scale.

Trailer numbers allows the Trailer Scale to be set for automatic channel assignment (AUTOASGN), or set to a specific channel number. When combination trailers, such as Low-Boys or B-Trains, are equipped with scales, Air-Weigh recommends that each trailer scale be assigned a specific channel number. Channel numbers are usually assigned from the front of the truck towards the rear, *by axle groups*. Air-Weigh Tractor Scales reserve channels 1 and 2 for the Steer and Drives, respectively, so start your trailer with channel 3.

> To set a trailer scale to a specific channel number:
>
> 1. Press <MENU>, and scroll up <▲> to PROGRAM, press <ENTER>.
>
> 2. Scroll down <▼> to TRAILER# and press <ENTER>.
>
> 3. Press <ENTER> again when ASSIGN# is flashing on the screen.
>
> 4. Press <▼> or <▲> to select the desired channel number, which must be between 3 and 9. Press <ENTER> to assign the desired channel number to the Trailer Scale. The display will then show *Assned#* with the selected channel number. See figure 1.

Setting the trailer scale to channel number 0 will return the unit to Autoassign mode, and the tractor scale will automatically assign a channel number to the trailer scale when the units are powered up. See figure 2.

Fig 1   Fig 2

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Note: The automatic channel assignment may result in different assignments between power cycles. Air-Weigh recommends assigning specific channel numbers to Trailer Scales when using more than two on the same vehicle.

Note: Assigned numbers show up in a tractor display as letters; CH 3 = TRL A, CH 4 = TRL B, etc.

Creating a PIN

When the trailer scale PIN# is set to 0, the operator will not need to enter a PIN# to utilize the PROGRAM menu functions. Setting a PIN# on the trailer scale provides a layer of security to protect against undesired changes in calibration and other settings.

To set a PIN:

1. Press <MENU> and scroll down <▼> to PROGRAM, Press <ENTER>.

2. Scroll down <▼> to SET-UP and press <ENTER>.

3. Scroll down <▼> to NEW PIN# and press <ENTER>.

4. PIN# --0 will appear with the Zero *flashing.* Use the down/up arrows <▼▲> to choose a desired PIN# (between 1 –999) and press <ENTER>. *Accepted* will momentarily display on the screen.

5. Press MENU and <ENTER> at WEIGHTS to return to main screen

| Step 4 | Step 5 |

The new PIN# is now entered into the scale. To later establish a new PIN #, go back through these instructions and change the setting. Setting the PIN back to ZERO will reset the scale to its original status of NO PIN needed.

Setting a PIN# into a trailer scale will eliminate tampering of the PROGRAM and CALIBRATION menus from that scale. Fleets with both tractor and trailer scales should develop a fleet PIN# policy to protect the calibration settings from tampering.

Alarm Function

This Air-Weigh AW5802 Trailer Scale has an optional 12V-24V output alarm feature that supports any alarm device requiring 1.0 amps or less. You must install a relay for any device that draws more than 1.0 amps.

To completely disable the alarm feature requires going to the ALARM ON portion of the PROGRAM menu and changing the YES to a NO.
To use the alarm feature, attach the gray alarm output wire stemming from the main scale harness to a user-supplied alarm. It will activate when a programmed *warning weight* or *alarm weight* limit is reached. The limits activating this feature are set by the user. *Warning weight* output is pulsing voltage, while *alarm weight* output is continuous voltage. Remember, it is OK to program in an *alarm weight* while leaving the *warning weight* at zero.

To deactivate and reset an active *warning* or *alarm weight* alarm, simply press the Escape button <ESC> once. This stops power from flowing to the alarm output wire. Once the displayed weight readings fall below the programmed alarm settings, the alarm function resets. The alarm feature is now ready for the next load.

Alarm Function Programming Procedure

1. Press the <MENU> button.
2. Use arrows <▼ ▲> to display PROGRAM. Press <ENTER>.
3. Use arrows <▼ ▲ > to display ALARMS. Press <ENTER>. EXIST is shown in the scale display.

NOTE: At EXIST, press <ENTER>. If EXIST is YES, then press <ESC> and proceed to step 4.   If EXIST is NO, the alarm feature has not been activated in the scale. To activate, use the arrows to change the NO to YES and press <ENTER>. Scale will momentarily display Accepted *then revert to showing EXIST. Now proceed to step 4 (next page)*

4. -Press the down arrow <▾> to display ALARM WT, press
    <ENTER> (Fig A, next page).
    -Use arrows <▾ ▲ > to change the zero in the display to a
    weight that will activate the alarm (Fig B, next page).

    ***Note: For the Dolly Scale option, set the alarm by the Front
    axle group weight only.***

    -Press <ENTER> to store that weight into the scale's
    memory.
    The screen will momentarily display *Accepted* as the weight
    is stored (Fig C) and then revert to displaying ALARM WT
    (Fig D).

Fig A - Press Enter.

Fig B - Select a weight. Press Enter.

Fig C - Accepted will briefly display

Fig D – Back to ALARM WT

If warning weights are not desired, skip to step 6.

-Press the down arrow <▾> to display WARNING WT, press <ENTER>.

-Use arrows <▾ ▲ > to change the zero in the display to a weight that will activate the alarm. Press <ENTER> to store that weight into the scale's memory. The screen will display *Accepted* as the weight is stored then revert to displaying ALARM WT.

Note: For the Dolly Scale option, set the alarm by the Front axle group weight only.

5. To activate the alarm feature, use arrows <▾ ▲ > to display ALARM ON. Press <ENTER>. Choose YES or NO and then press <ENTER>. Scale momentarily displays *Accepted*.

6. To return to the main weights display, press <MENU>, WEIGHTS will display on the screen. Press <ENTER> to display trailer weights.

The alarm weight criteria are now programmed into the scale, and with the ALARM ON set to YES it is triggered to activate as *warning* and *alarm weights* are reached. **To deactivate and reset an active *warning* or *alarm weight*, simply press the Escape button <ESC> once.** This stops power from flowing to the alarm output wire and once the displayed weight readings fall below the programmed alarm settings, the alarm function resets. The scale's alarm feature is now ready for the next load.

Turning the alarm feature completely off requires going back to the ALARM ON portion of the PROGRAM menu and changing the YES back to a NO (reference step 6 above). This completely disables the alarm.

NOTE: Remember, to deactivate and reset an active warning or alarm weight, simply press the Escape button <ESC> once. To turn the alarm function completely off go back to the ALARM ON display under PROGRAM and change the YES to a NO.

QUICK REFERENCE MENU DIRECTORY
Full description of each MENU item follows this directory.

Press the <MENU> key once to access the Trailer Scale menu tree.
WEIGHTS
LBS/KG
      POUNDS
      KILOGRAMS
DIAGNOSE
      STATUS
      A TO D
      CAL TYPE
      RATIO
      OFFSET
      EMPT A2D
      HVY A2D
      EMPTY WT
      HEAVY WT
      TYPE
      MODEL #
      VERSION#
      SERIAL #
      ASSIGNMT
      PRESSURE
PROGRAM
      NO PIN# or PIN#?
      CALBRATE
          SUSPNSNS

BINKLEY:	ARLTE 2
DANA:	RF20 2X, RF23 2X, RS20 2X, RS23 2X RS40 2X
HNDRKSON:	HT250 2X, HT250 3X, AA23 2X, AA230 2X, AA230 3X AA25 2X, AA250 2X, HKANT 40, HKA180, HKAT 50, HKA250, HT230 2X, HT300 2X
MERITOR:	RHP 2X
NEWAY:	RL224 2X, RL230 2X, RL250 2X
RIDEWELL:	240US 2X, 240US 3X, 240OS 2X
WATSONCH:	TA300 2X, TI251 2X

          ADJUST (only if previously calibrated)
          EMPTY WT
          HEAVY WT
          UNDO

QUICK REFERENCE MENU DIRECTORY (cont'd)

```
            TRAILER#
             ASSIGN#
          ALARMS
  EXIST (only if EXIST = YES will the alarm choices below display)
                ALARM WT
                WARN WT
                ALARM ON
                TST ALRM
            SETUP
                INSTRUCT
                    YES
                    NO
                TYPE
                    AXLE WT
                    PAYLOAD
                    DOLLY
                SENSORS
                LANGUAGE
                    ENGLISH
                    SPANISH
                NEW PIN#
```

Press the <POWER> button to turn the scale on. Press <MENU> once to access the menu selections, and the < ▲ > and < ▼ > buttons to scroll to new selections. Refer to the Quick Reference Menu Directory on the inside back cover of this manual for the entire menu structure.

WEIGHTS - Pressing <MENU> will return you to the weights screen. Press <ENTER> to observe the actual weights, with the unit pound or kilograms displayed.

NOTE: A Dolly Trailer Scale will alternate automatically between the front and rear axle groups, i.e.:
> ***F 12340 L (for lbs) or K (for kilos)***
> ***R 12340 L (for lbs) or K (for kilos)***

LBS/KG - Changes the weight display and data entry modes to pounds or kilograms. Changing this selection will also automatically convert any calibration values previously entered to the new unit of measure.

DIAGNOSE - Use this menu to obtain system status, calibration data and suspension pressure information. If you require assistance from Air-Weigh Technical Support, use of the Diagnose screen is likely to determine calibration status and whether the system is functioning properly. The selections available include:

STATUS - This selection will show current system status. The status will be NO ERRS if the on-board diagnostics report no errors, or it will show an error code. Follow the instructions under "Troubleshooting" in the back of the manual if the Trailer Scale displays a status error code.

A TO D - The A-to-D, or analog to digital, reading is a numerical representation of the pressure reading from the sensor(s). It does not display in PSI or other pressure units. The higher the A-to-D number, the higher the measured pressure. The A-to-D will range from 409 to 4095. Each A-to-D number represents approximately $1/27^{th}$ of a PSI. A reading of 409 means that the sensor is disconnected or the sensor cable is open. A 4095 reading means that the sensor is at its maximum reading. This condition usually implies that the sensor is failed or the sensor cable is shorted. Press the < ▾ > or < ▴ > buttons to observe each of the sensor readings, if the scale is equipped with more than one sensor. Each sensor is labeled with an alpha designator, A, B, or C. Note that in hydraulic and pneumatic applications, the designated sensor cable **must** be connected to the appropriate sensor.

With such finite resolutions of change taking place within the suspension, the A-to-D reading may be used to identify minute leaks with in the suspension. Simply monitor the active A-to-D readings for decreases in its number. The faster the A-to-D declines, the greater the leak in the suspension.

CAL TYPE - This selection shows the type of pre-calibration selected for the scale, if used.

RATIO - A number computed after calibrating the scale. The ratio is the number of weight units (lbs or kgs) that the display will change for every single point of the A-to-D value. This value is used for diagnosing calibration and selecting pre-calibration values (see following section, SUSPNSNS).

OFFSET - Another figure based on calibration data, and equal to the weight reading when the sensor reading is zero, while factoring in barometric compensation. The offset is also used when diagnosing calibration and selecting pre-calibration values (see following section, SUSPNSNS).

EMPT A2D - The A-to-D value recorded during the empty calibration process, or assigned when selecting a pre-calibration value programmed into the trailer scale. If this value is the same or nearly the same as the HVY A2D value, there has likely been an error in calibration – usually when the empty and heavy weights were entered without changing the load on the suspension.

HVY A2D - The A-to-D value recorded during the heavy calibration process, or assigned when selecting a pre-calibration value programmed into the trailer scale. If this value is the same or nearly the same as the EMPT A2D value, there has likely been an error in calibration – usually when the empty and heavy weights were entered without changing the load on the suspension.

EMPTY WT - The weight value entered by the user during the empty calibration process, or assigned when selecting a pre-calibration value programmed into the trailer scale.

HEAVY WT - The weight value entered by the user during the heavy calibration process, or assigned when selecting a pre-calibration value programmed into the trailer scale.

TYPE - Allows the user to select between AXLE WT or PAYLOAD type of scale. The PAYLOAD scale requires the use of hydraulic sensors on a designated sensor cable. Changing the Type in the field is not usually expected. Consult with Air-Weigh Customer Support if changing the Type is required.

MODEL # - Displays the model number of the trailer scale module i.e., 5802.

VERSION# - Displays the software revision number of the trailer scale module. Air-Weigh may periodically update the software to add new features or to improve performance of the trailer scale. Air-Weigh Customer Support and some approved distributors can re-program the software version of scale modules when necessary.

SERIAL # - Displays the serial number assigned to the module.

ASSIGNMT - Displays whether the trailer scale is set up for automatic trailer channel number assignment (AUTOASGN) or programmed for a specific channel (ASSIGN#). When combination trailers, such as Low-Boys or B-Trains, are equipped with scales, Air-Weigh recommends that each trailer scale be assigned a specific channel number. See the instructions under TRAILER # in the next section for more information on assigning specific channel numbers to trailer scales.

PRESSURE - Displays the pressure recorded by the sensors in several units of measure – PSI, KPA and BAR. The display will cycle through each of these units until the <ESC> button is pressed.

PROGRAM - If a PIN # other than 0 has been entered, the operator will be prompted to enter the PIN code before being granted access to this feature. Once the correct PIN # has been entered, the operator will be granted access to the PROGRAM functions *until the power to the trailer scale is cycled once.*

CALBRATE – Reference CALIB portion of manual, page 10.

TRAILER# - Allows the trailer scale to be set for automatic channel assignment (AUTOASGN), or set to a specific channel number. When combination trailers, such as Low-Boys or B-Trains, are equipped with scales, Air-Weigh recommends that each trailer scale be assigned a specific channel number. Channel numbers are usually assigned from the front of the truck towards the rear, *by axle groups.* Air-Weigh Tractor Scales reserve channels 1 and 2 for the Steer and Drives, respectively.

ALARMS - The alarm selection allows the user to set the parameters for and activate an external alarm for overweight notification purposes.

>**EXIST** - Informs the user if the alarm function is installed.

>**ALARM WT** - User programmed weight at which the alarm activates a 12V steady output.

>**WARN ON** - User programmed weight at which the warning alarm activates a 12V pulse output.

>**ALARM ON** - Turns on the alarm feature.

>**TST ALRM** - Activates the alarm for 10 seconds. To test the alarm, use the arrows < ▼ ▲ > to display TST ALRM. Press <ENTER>. Use the arrows < ▼ ▲ > to choose YES and press <ENTER>. Scale displays Accepted and the12V alarm output will be activated for 10 seconds. Scale will revert back to displaying TST ALRM. To take the scale out of test mode press <ENTER>. Use the arrows < ▼ ▲ > to select NO and press <ENTER> again. Scale displays Accepted.

SETUP - The setup menu allows the operator to choose between several display options and to change the type of scale assigned to the unit. Setup also allows the user to change the display language and select a new PIN #.

INSTRUCT - Select YES to include text reminders on the scale display during first start up. The reminders include weighing on a flat surface, releasing the brakes and inflating the suspension. Select NO to turn this feature off.

Note: TYPE and SENSORS menus require a Manufacturer's PIN to change. Call Air-Weigh Customer Support at (888) 459-3247 for this PIN.

TYPE - Allows the user to choose between three different modes of operation.   When set to AXLE WT, the trailer scale is calibrated to show on-the-ground weight of the trailer axles. This is the usual setting for most applications. Setting the trailer scale to PAYLOAD allows the user to calibrate for payload weights, and requires more than one sensor.   Payload scales use hydraulic or load cell sensors in addition to the standard pneumatic (or air) sensor. The DOLLY setting allows the scale to display and transmit weights for the front and rear axle groups.

SENSORS - Allows the user to set the trailer scale to accept input from multiple sensors to calculate weight. For Payload type scales, the operator can select between hydraulic, pneumatic and load cell sensors, depending upon the application. The trailer scale display indicates HYD for hydraulic sensors, PN for pneumatic sensors, and LC for load cell sensors, as well as the number of each type of sensor. Axle Weight and Dolly type scale have the choice between air or non-air sensors. The words "SENSOR" and "SENSRS" refer to air sensors.

LANGUAGE - The trailer scale can display commands in either English or Spanish.

NEW PIN# - When the trailer scale is set to 0, the operator will not need to enter the PIN# to access the PROGRAM menu functions. Setting a PIN# on the trailer scale provides a layer of security to protect against undesired changes in calibration and other settings.

TROUBLE SHOOTING

The Air-Weigh 5802 scale system is extremely self-sufficient. To operate correctly, power and ground are the only trailer connections needed. Ensure the 4-pin metri-pack connectors (male/female) make a good connection and at least 9.5 volts plus is entering the system. Within the connecting plugs, power will be pin-position A and ground will be pin-position B. When troubleshooting, initially check for power here. If the system used to power up, but now doesn't, double-check the circuit being used to power it. Many times the answer is as simple as turning on the marker lights, or realizing that one of your tractors has a switched blue wire instead of ignition hot. If there is no power to the trailer scale, use a voltmeter and test the power and ground circuits using a bracketing method to isolate where power is lost. Once the break in the power circuit is found, make the proper repairs. If the trailer scale displays 'Bad Prgm', there has been a microchip failure and the scale needs to be returned to Air-Weigh for reprogramming.

All other faults can be identified internally through the STATUS display on the scale. Press <MENU>, and use the up/down arrows <▲ ▼> until DIAGNOSE is displayed and press <ENTER>. With the word STATUS *flashing*, press <ENTER> one more time. If NO ERRS displays on the screen, the system is functioning normally. Reference the Chart below for all fault code statuses.

CODE	PROBLEM DESCRIPTION	SOLUTION
E	EEPROM error	Memory failure. Send to AW
C	No communications w/ Tractor	Will appear until tractor is found or will disappear
S	Bad or missing sensor	Check connectors and cabling to sensors
1 2 3	Sensor 1 Sensor 2 Sensor 3	Check connectors and cabling to sensors. Ensure sensors are in proper repair. Ensure number of sensors provided is same number of sensors needed.

Examples of possible fault codes are below:

Indicates no problem found.

No communication w/Tractor
Bad or missing sensors 1 and 2

If troubleshooting procedures do not solve the problem, contact your local AW Dealer or call Air-Weigh Customer Support toll free at 1-888-459-3247, Monday –Friday, 8am – 5pm, Pacific Time.

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