

Hi-Tech Transport Electronics, Inc.

Air-WeighTM

**DUAL LEVELING VALVE
PROCESSOR INSTALLATION
MANUAL**

**For the 4600 Scale System
For the 5600 Scale System**

September 1999



THE ACCURATE ON-BOARD ELECTRONIC SCALE
For Air-Ride Trucks & Trailers™

Patents #5,780,782; #5,478,974; #623,635; #1,305,191; #4,832,141; #260,494; #677,998

DUAL LEVELING VALVE PROCESSOR INSTALLATION MANUAL

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Your Hi-Tech Transport Electronics™ product is warranted against defects in material or workmanship for one year from the date of the original purchase. Any Hi-Tech Transport Electronics product, which, because of a manufacturing mistake or malfunction, proves to be defective within the one year warranty period, will be repaired or replaced at Hi-Tech Transport Electronics' option, and at no charge to you, provided it is returned to Hi-Tech Transport Electronics with proof of purchase.

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Conventions

References to Air-Weigh part names are type set in *Italic*.

References to sections within this manual are placed in "quotes".

Procedures are designated by **STEP**.

Front Panel Function Key and Light names are type set in **BOLD CAPITAL LETTERS**.

General information such as Cautions and Notes are type set in *Italics* and preceded by one of the following keywords:

Hint

Hint gives you helpful information that is not required but helpful for you to know.

Caution

Cautions warn you of actions that may cause injury to yourself or damage to equipment.

Remember

This refers to important information that has been mentioned in previous procedures.

Note

Notes provide you additional information about the procedure that would otherwise not be covered.

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1. Specifications

1A. Dual Leveling Valve Processor Kit

Total Weight of 4600 compatible kit: Approximately 4.5lbs.

Total Weight of 5600 compatible kit: Approximately 2.5 lbs.

1B. Dual Sensor Processor (DSP)

Note: The Dual Leveling Valve Processor is labeled and referred to as a Dual Sensor Processor.

INPUTS:

5 VDC (From ComLink RSP)

0.5 – 4.5 VDC (From Sensor one)

0.5 – 4.5 VDC (From Sensor two)

OUTPUTS:

5 VDC (To Sensors)

0.5 – 4.5 VDC (Combined Sensor Signals to ComLink RSP)

DIMENSIONS:

W = 6-3/8 inches

L = 5 inches

H = 3-3/8 inches

1C. Pressure Sensor

Air Pressure Capacity: 0-150 psi

Input Voltage: 5 VDC (From DSP)

Output Voltage: 0.5 – 4.5 VDC (To DSP)

Operating Temperature: -45° to +135° C.

1D. Installation

Torque all fittings until snug. Be careful not to over tighten the fittings on the brass tee, or the plastic of the airline may be damaged, causing leakage.

2. Installation Preparation

2A. Component Description

Electronic Pressure Sensors

The pressure sensors measure the air pressure in your tractor and trailer air springs and convert the measurements to electronic signals.

Dual Sensor Processor

The Dual Sensor Processor converts the electronic signals from two Electronic Pressure Sensors into one comparable signal. This allows the appropriate Scale Display Module (4600 or 5600) to properly measure the weight of a single axle group controlled by two leveling valves.

ComLink Cable

ComLink cable, in a variety of configurations, supports communications between components, or with the vehicle's existing 7-wire electrical harness. Each cable bears a label and has specific connectors for specific functions.

2B. Parts List

Check the parts you need in the columns corresponding to the kit you will be installing. If the parts you need are not in your Air-Weigh kit, stop and contact your supplier AS SOON AS POSSIBLE.



Part description and part number	4600 Installation	5600 Installation
#1 – Dual Leveling Valve (Sensor) Processor: 050-4026	1	1
#2,3,4 – Sensor/Fitting/Cable Assembly: 010-9082 Note: The individual sensor, fitting and assembly parts have been pre-assembled into a single component.	1	1
#5 – Mounting Bolts 1/20 x 1: 131-4065	4	4
#6 – Mounting Nuts: 132-4070	4	4
#7 – Mounting Flat Washers: 133-5002	8	8
#8 – Nylon Wire Ties: 145-4552	10	10
#9 – Dual Leveling Valve Processor Installation Manual: 901-0000	1	1
#10 – Cable, Sensor, 6': 010-8002	1	0
#11 – 60' Sensor Cable: 010-8015	1	0
#12 – Solder-N-Seal Butt Connectors: 145-3031	4	0
#13 – 3' Interconnect Cable: 010-8014	0	1
#14 – Heat Shrink: 380-0075	1	0

2C. Pre-Installation Considerations

Required Tools

- | | |
|--|---|
| <ul style="list-style-type: none"> • 3/4" open-end wrench • 1-1/4" open-end wrench • Drill (pneumatic or electric) • Two 7/16" open-end wrenches | <ul style="list-style-type: none"> • 1-1/4" deep socket • Torque wrench • 1/4" Drill bit |
|--|---|

For Best Installation Results

WHAT YOU NEED TO KNOW

- The location of the most accessible air bag on the axle group you will be installing the DSP.

RECOMMENDATIONS

- Read through all the Installation Instructions prior to installing your Air-Weigh scale and the DSP.
- Do not wire-tie cables until you have installed the entire kit successfully.
- Leave plenty of slack in the ComLink cables during installation so they may be secured to the existing cables and wires.
- To ensure that all cables and part connections meet properly, map where the cables will be installed in your tractor and trailer before installation.
- You may tailor the installation to your tractor and trailer. Make notes for future installations.

Hint: The ComLink Cables are not all the same length. Determine where each cable will be installed prior to proceeding with the installation. If you do not have enough cable to complete the installation, contact your Air-Weigh distributor or Air-Weigh Product Support to receive the cable you need.

Caution: For proper performance and safety, this unit must be installed according to instructions. Air-Weigh cannot be responsible for problems, accidents or defects arising from faulty installation.

3. Installation

3A. Install Sensors

STEP 1:

Mount the sensor, provided with your scale, on an air-bag supplied by one of the leveling valves. Refer to the scale installation manual for sensor installation instructions.

STEP 2:

Mount the sensor, provided in the Dual Leveling Valve Processor kit, on an air-bag supplied by the second leveling valve. Refer to the scale installation manual for the sensor installation instructions.

STEP 3:



Plug one 6 ft. Sensor Cable three pin plug into each (right and left) sensor socket.

3B. Install DSP

STEP 1:

Locate a flat vertical surface on the frame large enough to mount the DSP.

Note: Make sure you place the DSP close enough to the pressure sensor for the 6 ft. Sensor Cables to reach once they have been secured to the existing cables and wires.

Note: When installing with a 5600 Scale system, place the ComLink RSP close enough to the DSP for the 3 ft. Interconnect Cable to reach once secured.

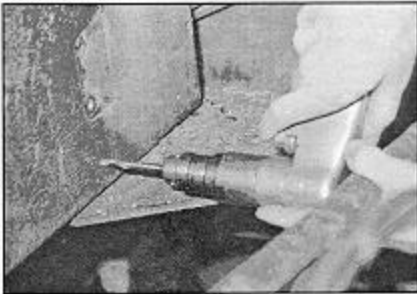
STEP 2:



Hold the DSP in place using it as a template to mark the mount hole locations on the frame.

Caution: It is very important that the DSP be mounted so that moisture properly drains out the bottom. When marking the mounting holes, ensure that the DSP is level and that the drain hole is pointed down.

STEP 3:



Drill one 1/4 inch hole at each of the four marked locations.

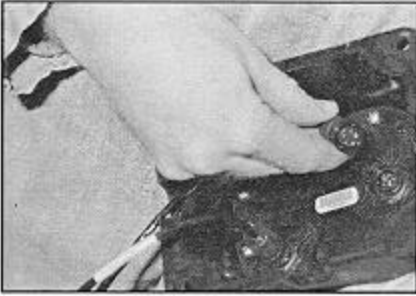
STEP 4:



Insert each of the two 6ft. Sensor Cable 5-pin plugs into a 5-pin socket on the back of the DSP.

Note: Any one of the three DSP connectors may be used.

STEP 5:



FOR THE 4600 SCALE SYSTEM

Insert the 60 ft. *Dual Sensor Cable* 5-pin plug into the remaining DSP 5-pin socket.

FOR THE 5600 SCALE SYSTEM

Insert the 3ft. *Interconnect Cable* 5-pin plug into the remaining DSP 5-pin socket.

STEP 6:



Use a tie-wrap to secure the *Sensor Cables* and the *Disconnect Cable* to the DSP housing.

STEP 7:



Use four of the 1/4 inch bolts and nuts and the 8 washers to mount the DSP to the frame. The washers should be placed on each side of the plastic DSP case at each hole.

Note: Mount the DSP so the opening at the bottom points towards the ground.

STEP 8:

FOR THE 4600 SCALE SYSTEM

Route the 60 ft. *Dual Sensor Cable* loose end to the 4-pin *Disconnect Socket*.

FOR THE 5600 SCALE SYSTEM

Route the 3 ft. *Interconnect Cable* loose end to the axle group RSP.

STEP 9:

FOR THE 4600 SCALE SYSTEM

Slide the heat shrink tubing over the cable. Attach the cable to the disconnect socket according to the wiring diagram below.

Note: The Dual Sensor Cable uses the white wire for the sensor signal output. This wire must be attached to the sensor signal input of the 4600. The 4600 tractor sensor signal input uses the green wire. Thus, when the Dual Sensor Processor is used for the 4600 tractor, the white Dual Sensor Cable wire must be attached to the green 4600 Sensor Cable wire.

Tractor Installation

<u>Dual Sensor Cable</u>	<u>4-pin Disconnect Socket</u>
RED	RED
BLACK	BLACK
WHITE	GREEN

Trailer Installation

<u>Dual Sensor Cable</u>	<u>4-pin Disconnect Socket</u>
RED	RED
BLACK	BLACK
WHITE	WHITE

Note: Use the Solder-N-Seal lugs provided in your scale kit to splice the cable wires. Refer to the scale installation manual for proper Solder-N-Seal lug installation instructions.

FOR THE 5600 SCALE SYSTEM

Attach the 3 ft. *Interconnect Cable* to the ComLink RSP 5-pin socket.

This COMPLETES the 5600 Dual leveling valve processor installation. Refer to the 5600 installation manual for further installation instructions.

STEP 10:

FOR THE 4600 SCALE SYSTEM ONLY.

Use the heat shrink tubing, provided in your scale kit, to bundle the installed Solder-N-Seal lugs.

This COMPLETES the 4600 Dual Sensor Processor installation.

Note: The Dual Sensor Cable provided in your Dual Leveling Valve Processor Kit replaces the basic Sensor Cable provided in the standard 4600 Scale kit.

4. Maintenance

4A. Disconnects

Periodically spray the 7-pin sockets and plugs with electrical cleaner. A good electrical connection is vital for proper operation. Make every effort to keep moisture out of the disconnect socket while the system is in operation.

4B. Dual Sensor Processor

The Air-Weigh Dual Sensor Processor should be maintenance-free under normal operating conditions. Ensure that the ComLink is mounted properly and keep the drain holes free of obstruction.

4C. Sensors

Periodically inspect the sensor connections. Do not grease the sensor plug-in socket.

5. Troubleshooting

Problem: the Dual Sensor Processor is not functioning.

Cause	Solution
The Dual Sensor Processor is not receiving power. There is no red or green light on the Dual Sensor Processor.	Verify the disconnect sockets are connected and wired correctly.

Problem: the Dual Sensor Processor has a solid red light.

Cause	Solution
The power and ground wires for the Dual Sensor Processor have been reversed.	Verify the disconnect sockets are connected and wired correctly.

6. Support

If you cannot correct a problem, or you suspect you have a malfunctioning part, please contact Air-Weigh Product Support at (888) 459-3247, Monday through Friday, 8 AM – 5 PM Pacific Time. From outside the U.S. and Canada, please call (541) 343-7884.

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