

# INSTALLATION/SERVICE MANUAL



External Pressure Sensor Transducer – Intelligent Trailer  
Control Module (ITCM) ECU Auxiliary Feature

(L31295W)



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## Additional Information

Installation and Troubleshooting Guides  
available on the Haldex website.

L31286W Intelligent Trailer Control Module (ITCM) Installation/Service Manual (web only)

L31287W DIAG+ Diagnostic Software Users Guide (web only)

L31289W ILAS-E Valve Installation/Service Manual (web only)



## Important Notices

### Safety First

The customer's company safety procedures must be followed when installing or servicing this equipment. Be sure that all instructions are understood before beginning the procedures.

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## Background Information

This manual instructs the customer how to install and set up the Haldex External Pressure Sensor Transducer – Intelligent Trailer Control Module (ITCM) ECU Auxiliary Feature.

The Haldex External Pressure Sensor Transducer measures air pressure at the lift axle air suspension or at the air brake reservoir. The transducer signal is used in conjunction with other auxiliary devices, for example the Haldex ILAS®-E Lift Axle System.

When the Pressure Sensor Transducer is used at the lift axle air suspension, the signal is used for load-based control of the lift axle with the Haldex ILAS-E combined with the Haldex ITCM. The measured load pressure signal is numerically processed to eliminate the effect of pressure spikes and rapid suspension pressure changes due to vehicle cornering, sudden or hard stops, or bumps in the roadway. The resultant signal is a long-term average of the vehicle's suspension pressure.

When used at the air reservoir, the sensor transducer signal can be used to measure the air pressure for the braking system to ensure that the pressure remains at a safe level. A Low Reservoir Lamp auxiliary output is provided to alert the driver to a low reservoir. Currently, when used with the demand air signal, the transducer signal is not used.

## Hardware Setup

1. Plumb the External Pressure Sensor Transducer into the air system using a run-tee. Figure 1 shows the transducer plumbed into the suspension air bag. Figure 2 shows the transducer plumbed into the air reservoir. Any port on the reservoir may be used except the drain port due to contaminants possibly damaging the transducer.
2. The external pressure transducer requires the use of a metric to NPT adaptor. The transducer has a male metric thread which must be converted to a male NPT thread by attaching the adaptor. This adaptor is included in the kit and must be attached before the transducer is plumbed into the air system.

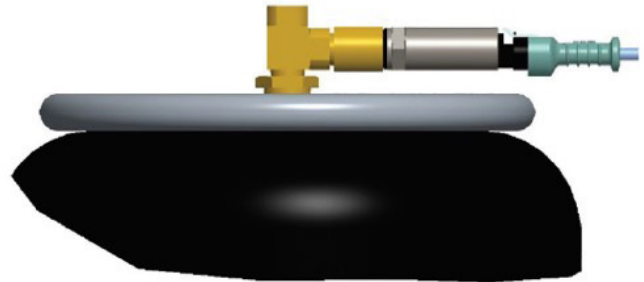


Figure 1: External Pressure Sensor Transducer plumbed into the suspension air bag.



Figure 2: External Pressure Sensor Transducer plumbed into the air reservoir.

## Hardware Setup (cont'd)

3. Remove the sealing blanking plug from Auxiliary Port #4 or Auxiliary Port #5 to prepare for the connection of the pressure transducer. Remove the plug while pressing in on the locking lever tab and simultaneously pulling the sealing plug out of the port. Figure 3 shows the plug in a section view with the locking lever tab engaging the access hole in the wall of the port.
4. Connect the External Pressure Sensor Transducer to the ITCM Auxiliary Port #4 or Auxiliary Port #5 with the supplied harness cable, as shown in Figure 4.



Figure 3: Sealing Blanking Locking Lever in Auxiliary Port.

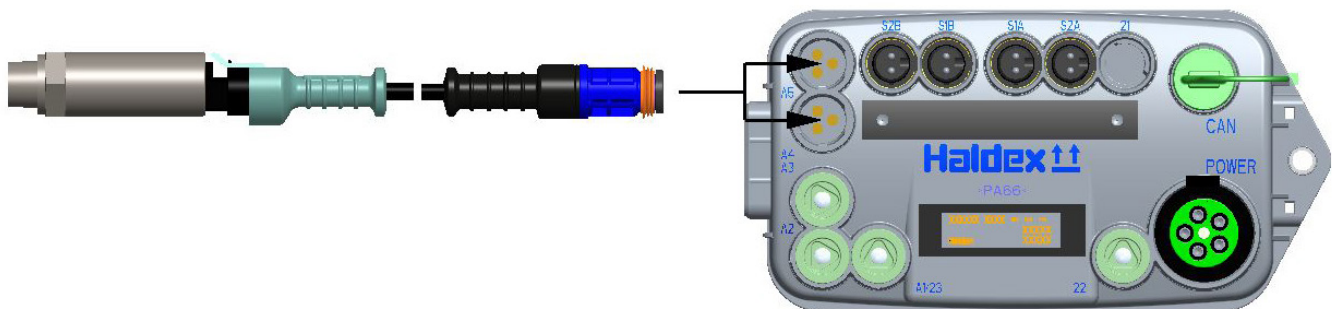


Figure 4: External Pressure Sensor Transducer connection to the ITCM.

5. Connect the interface cable such that the locking lever engages the access hole of the auxiliary port. Press the cable firmly into the auxiliary port receptacle such that the locking lever engages with an audible “click”. Figure 5 illustrates the cable insertion into Auxiliary Port #4.



Figure 5: Pressure Transducer Cable Insertion into Auxiliary Port #4.

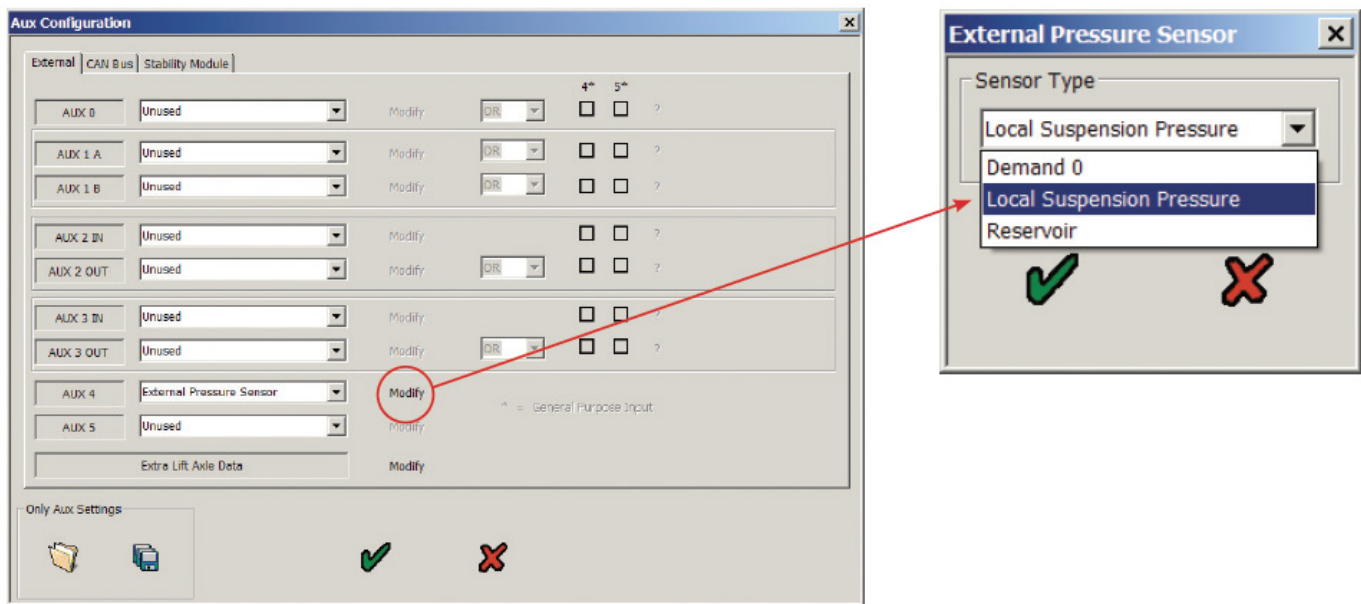
# Software Setup

## External Pressure Sensor Transducer

Configure ITCM as to the presence of the External Pressure Sensor Transducer with the DIAG+ Diagnostics Software and DIAG+ PC to ITCM Interface Cable Kit.

1. Select the **Edit System Configuration** menu.
2. Select the **External** tab in the Configuration window.
3. Select **External Pressure Sensor** from the drop-down of either Aux 4 or Aux 5, whichever is the connection location of the sensor transducer.

As an example, the Transducer is plumbed into the non-lift air bag and connected to Auxiliary Port #4.



4. Click Modify and select whether the sensor transducer is measuring **Local Suspension Pressure** or **Reservoir** pressure.
5. Click the Green Checkmark to accept the settings.

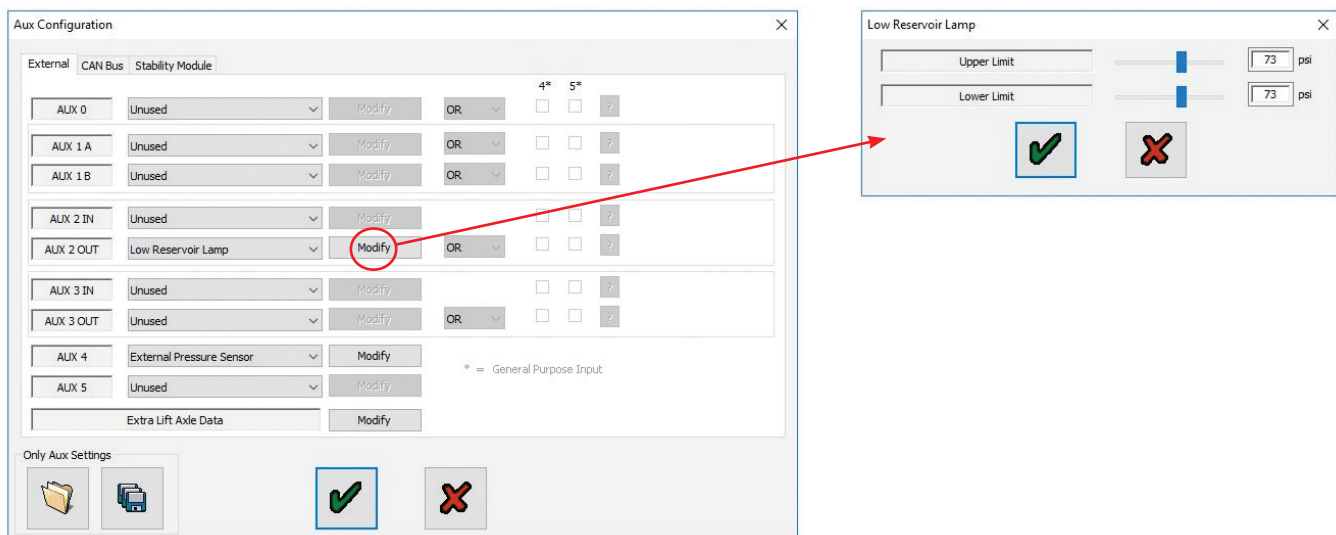


# Software Setup

## Low Reservoir Lamp

Configure Low Reservoir Lamp auxiliary device when using an external pressure transducer plumbed into the air reservoir with DIAG+. In addition to the DIAG+ Software, a DIAG+ PC to ITCM interface cable kit is needed.

1. Select the **Configure, Read, Setup and Program the ECU** menu.
2. Select the **Edit ECU Parameters and Configuration** menu.
3. Select the **External** tab in the Configuration window.
4. Select **Low Reservoir Lamp** from the drop-down menu of either Aux 0, Aux 2 Output or Aux 3 output. N.B. This selection is available only when an **External Pressure Transducer** is configured to measure the reservoir pressure.



5. Click Modify and select the lower and upper air pressure limits for a “Low Reservoir”.
6. Provide enough separation between the two pressure limits to avoid lamp flicker.
7. Wire an incandescent indicator lamp (do not use an LED lamp) to the Red conductor and Black conductor of the auxiliary cable.



## Troubleshooting

**Problem: The pressure transducer is plugged into the wrong Auxiliary channel.**

1. Verify that the Auxiliary port selected in the DIAG+ Software is the same as the Auxiliary port to which the transducer is connected on the ITCM.
2. Verify the cable is inserted correctly and making full contact on both ends.

**Problem: Faulty Transducer is sending an erroneous signal.**

1. The transducer output signal could be shorted to a high or low level or fixed.
2. Add a pressure gauge to the air circuit to verify the pressure reading.
3. Examine the cable connecting the pressure transducer and the ITCM ECU for damage, electrical continuity, or corrosion on the electrical contacts.
4. Verify the air system the transducer is connected to is free from moisture or contaminants.





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United States 816-891-2470  
Canada 519-621-6722  
Mexico 52-81-81569500

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