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Warning
Your Cleral onboard weighing system is a tool. Learning to work with it can only make it more efficient. Read this manual before using your Sentinel PS2.

Version and Revision
Some functions described in this manual may not be present in your PS2. This will depend on the version and revision of your device.

Weigh bridge (certified)
Acquire the weights needed to calibrate using a certified weigh bridge (Platform scale). Whenever possible, record the weights while sitting on the weigh bridge.

Pneumatic connections
Make sure that all air connections be made according to the installation diagrams.

Lift Axles
Lift axles should always be in the UP position while acquiring and recording the weights in the PS2. If the vehicle is equipped with an automatic lift axle activation device, then you must acquire and record the weights while the lift axle is engaged (touching the ground) for both empty and heavy calibration. And use the system with lift axle down.

Fuel
To enhance the performance, fuel tanks must be full to acquire and record the weights.

Air Leaks
Leaks in the pneumatic system can cause erratic and false weight readings.

Recalibration
Recalibration is necessary if you have adjusted or replaced a leveling valve or if you’ve replaced a mechanical sensor, air transducer, or flexmeters.

Slopes
A slightly sloped terrain will not affect the accuracy of your scale, but the bigger the inclination the higher the error margin. Learning to work with your Cleral system will ultimately give you better precision in these conditions.

Batteries (2 X AA)
Do not invert battery position. CLERAL recommends the following batteries:
Duracell : Power Pix ™
Energizer: Ultimate Lithium ™

Technical Support
For technical help, consult your local authorized Cleral dealer.

Warranty
Cleral products are warranted against defects in workmanship for a period of one year from the original date of purchase. The defective covered product will be repaired or replaced by the manufacturer. The defective product needs to be sent by your local dealer to Cleral with proof of purchase. This warranty does not cover injury or damages caused by the use of this product. It also does not cover all costs connected with the replacement part (labor, shipping and handling or other). Cleral will not be liable for fines issued for overweight violations while using its products.

Contact your local Cleral dealer for repairs and replacement parts.

Thank you for choosing and trusting CLÉRAL CANADA

Manufacturer
CLÉRAL INC.
90, des Distributeurs
Val-d’or (Quebec) Canada
J9P 6Y1
Tel: (819) 825-5553
fax: (819) 825-5556
email: info@cleral.com
Web: www.cleral.com
Keypad description

On/Off
Access calibration mode.
Confirm or advance in menus.

Tare when empty.
Back one step.

Decrease.
Scroll down.

Increase.
Scroll up

Change channel.
Advance in the menu

Back light On/Off
Print.
Transmit data.

Acquiring sensors.
Simultaneously to access menu.

Simultaneously to Freeze or Pause.

Sentinel PS2 Flow chart

On/Off
Weights Display
Calibration
Empty
Full
Multi Cal 00
Acquire
Acquire
Manual Mode
Wifi Channel configuration
Options
FW Slide
Net weight
Language
MeasureUnits
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AutoShutOf
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No N/A
Controller
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Choose Truck
Nb channel
SuspensionCfg
Tag Axle
Adjust Tag
NoAirLimit
Hide NoAir
Safety Menu
Sensor add
Sensor Name
Mull Config
Printer add
Nom PS2
Time and date
RS232 add
Technician
Pressure Stress
Zeros
Factors
Errors Register
Err Cal
Europe Wifi
LevelNoise
Mem Flags
Version
Revision
Navigating in the menus

Sentinel PS2 allows easy access to menus and sub-menus. Refer to the flow chart on previous page.

Being familiar with the flow chart will facilitate the navigation and make your system comprehension better. Here is the principal behind the PS2 navigation.

To enter the menu, press Tare and Cycle simultaneously.

You will see:

- ➔ Acquire
- Options
- Configuration
- Technician

The cursor indicates the position. The arrows are used to scroll down or up as well as decreasing or increasing a given value.

The right ➔ arrow is used to enter (move forward) in the menu and the left ➔ arrow to move one step backward.

Communication Address

Every PS2, and wireless components, have a unique communication address. This «ID» is indicated on the sticker on the back of your PS2 handheld unit.

The air transducer «ID» is located on the sticker that is on top of the devices.

The multiplexer «ID» is also found on the sticker on top of the device.
Automatic sensor acquiring

Before calibrating, each activated channel needs to be associated with a sensor (s). To do so you need to acquire the sensors or multiplexers that are connected to that specific vehicle. Each device has a unique address.

Automatic Acquiring

Press ACQ .

The PS2 will display «Search».

Here is an example of what the PS2 will have found. The cursor points to the first device found. Displayed is the type of device (Air-mechanical-or flexmeter), the «ID» and the channel associated with the given device.

Explanation:

- Sensor channel (a/b/c/d/e/f/g/h/x)
- Sensor «ID»
- Order of reception
- Curser
- Type of sensor(Air/Mec/Flx)

Note!

If the PS2 displays «None» this means that it has not found any device. If this happens, try an automatic acquiring again. If this fails, try a manual acquiring. In case nothing has changed, refer to the Acquiring problems section.

Important!

If a sensor is Fixed on a channel, it does not appear in the search results when acquiring. To see if your channel is fixed, refer to the section Fixing a channel.

Acquiring procedures:

- Validate and anchor the channel
- Changing the channel
- Exit

Selecting and Validating the channel

Use the Down and Up arrows to select all the sensors that are associated to the appropriate channels, press the right arrow to hi-light them.
Changing channel

If a sensor is not associated to the correct channel, bring the cursor to select it and press Data/Print until the channel is correct. Then press the right arrow to highlight it.

**Note!**
When pressing Data/Print, you will only see the possible channels according to your configuration (A B C D E F G H X), can be displayed. The X means that it is not associated to any channel.

**Important!**
A configuration cannot have duplicated channels. The PS2 will not allow you to do so. In the example below, it is not possible to anchor the second sensor Air in A because channel A is already associated to a sensor. Every other channel is possible except channel A.

| 1: Air 4BCE56 | A |
| 2: Mec 4A11F8 | C |
| 3: Flx DD1258 | X |

Note that sensor can be identified to a channel that is already associated to a sensor, but that is only displayed, it cannot be highlighted, thus it cannot be acquired.

Releasing a channel

If you have mistakenly anchored a channel, you can release while you still in the menu. Replace the cursor on the channel to be released and press Cycle to release the channel. The address is no longer highlighted. Press repeatedly on Data to select the appropriate channel and Cycle to anchor the new channel. Press to go to the next address.

Exiting the Acquire mode

Once you have selected and highlighted the appropriate sensors, press ACQ.

If you have made a mistake or you are not sure that you selected the correct sensors, press Tare «Cancel». will be displayed and will take you back to the screen without validating any sensors.

Once you press the Acquire button, the PS2 searches for the sensors and will display «anchor data» indicating that it has loaded the sensors with the corresponding addresses and channels.
WIFI Ch Config

To set an address in memory to a given channel. Setting a channel where the address is permanent. This can be done for two channels maximum. This feature is mostly useful for two cases:

CASE 1- When the hand held is always dedicated to the same two sensors on a vehicle (channel A & B).

CASE 2- For tractor-trailer fleets, we usually fix the tractor and leave the semi-trailers free for multiple swapping possibilities. The fleets of tractor-trailer, tractor sets the sensor (Channel A) and left the other free channels for frequent switching trailers.

IMPORTANT!
To fix a sensor it must previously be acquired.

With the curser on WIFI Ch Config press Cycle to enter the menu.
The following appears showing the channels that are free.

To fix the channel, press Cycle, Free will change to Fix.

A: 4BCE56 Fix
B: 4A11F8 Free

Press to go to B and to come back to A.

IMPORTANT!
The fixed channels will not appear when acquiring. If you need to see the fixed sensors, you need to change them to Free.

Acquiring in Fleet mode

When acquiring in the presence of multiple instrumented tractors with fixed sensors, only the semi-trailers with free sensors will appear. You only need to select the desired semi and anchor it.

Use to select the desired semi to anchor. Use to high light and, ACQ to confirm and exit.

IMPORTANT!
It is not possible to anchor a sensor on a fixed channel.
**Manual sensor acquiring**

To manually acquire a sensor, press Tare and Cycle simultaneously to access the menu. Scroll to select **Acquire**. Press Cycle to enter.

Use the Up or Down arrow to select **Manual Mode**. Press Cycle to enter.

This screen will appear.

To change the channel press Data .

Once the device has the correct channel, press Cycle to hi-light and confirm. Then press ACQ to validate.

If no device is found, try again. If still no success, you may have entered the wrong «ID». There can also be no or not enough power to the device. Check trouble shooting section.
Acquiring weights for straight body trucks

The first step in calibrating your PS2 is getting the weight information for each axle groups. Get the steer axle weight for channel A and then weigh the entire vehicle and subtract the channel A weight from the total weight to get the channel B weight.

Acquiring trailer weights

Once the weights of the tractor are taken, the next step is to acquire the trailer axle group weights. Weigh the whole tractor and then the rear axle group (channel D) and subtract D from the whole trailer weight to get channel C weight.

If the trailer has central axles, as illustrated below, just acquire the whole axle group weight only.
Acquiring tractor and semi-trailer weights

Weigh the tractor only (Channel A) then weigh the whole rig (Total). Subtract the tractor weight from the Total weight to determine the weight of the semi-trailer (Channel B).

Acquiring additional semi-trailer weights

Any additional axle groups should be weighed individually.

Acquiring steering axle weights

In the case where the steering weight is required, acquire by making sure that only the steer axle is on the weigh bridge. To acquire the drive axle weight, weigh the whole tractor and subtract the steer axle weight.

If the steer axle is instrumented: Channel A B C
If the steer axle is not instrumented (Virtual): Channel S A B
Calibration Empty

Acquire vehicle weights

Advance the empty tractor only on the weigh bridge. Make sure that the semi-trailer wheels are not on the weigh bridge.

Note the tractor empty weight: Ex: 13000 Kg

Advance the entire rig on the weigh bridge.

Total Empty weight: Ex: 20500 kg
Tractor Empty weight (-): Ex: 13000 kg
Note the semi-trailer empty weight: Ex: 7500 kg

Recording the empty weights

1. Press Cal to enter the Calibration menu
2. With the curser pointing Empty, press the right arrow
3. Use down or up arrow to record channel A weight
4. Press the right arrow to change channel
5. Use down or up arrow to record channel B weight
6. Press right arrow to exit
Calibration Full

**Acquire vehicle weights**

Advance the Full tractor only on the weigh bridge. Make sure that the semi-trailer wheels are not on the weigh bridge.

Note the tractor empty weight: \textbf{Ex: 23000} Kg

Advance the entire rig on the weigh bridge.

<table>
<thead>
<tr>
<th>Total Full weight</th>
<th>Ex: 57000 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor Full weight (-)</td>
<td>Ex: 23000 kg</td>
</tr>
</tbody>
</table>

Note the semi-trailer Full weight: \textbf{Ex: 24000} Kg

**Recording Full weights**

1. Press Cal to enter the Calibration menu
2. Use down arrow to move the cursor to Full
3. Press Right arrow
4. Use down or up arrow to record channel A weight
5. Press right arrow to change channel
6. Use down or up arrow to record channel B weight
7. Press right arrow to exit
**Multi-calibration**

When the suspension has a nonlinear effect Multi-calibration function is used. The algorithm of this function increases the accuracy.

Press CAL to enter the calibration menu. Press to select Multi Cal.

With the cursor on Multi Cal, press Cycle . The first letter blinks. Press to change the 0 (non-activated) to channel A (activated Multi-Cal on this channel).

Press Cycle to go to the next channel and press to change the 0 to channel B. Only the activated channels will appear.

To exit, press to stop the blinking and press ACQ to exit.

---

**Determining the calibration points**

This feature forces you to make three full calibration points instead of one. Here is the method for determining the optimal multi-curve calibration.

First, determine the average weight that you carry on the channel to be calibrated \( (F_{a2} = 14000\,\text{kg}) \). Then determine the average weight greater than the weight that will never be exceeded \( (F_{3} = 17000\,\text{kg}) \). Finally, determine the weight lower than average weight in which you do not carry \( (F_{a1} = 11000\,\text{kg}) \). Thereafter it is necessary to calibrate these three points.

**Note!**

You must respect the legal weight limits at any time.

**FYI**

In the case of our example, the curve \( Cs \) suspension illustrates the deformation of the suspension by weight. The segment \( Dp_1 \) represents the calibration curve at a single point. As can be seen, there are differences in weight between this line and the curve \( Dp_1 \) \( Cs \). \( Cp_3 \) curve is the curve of multi-calibration. We note that the differences are significantly reduced.
Multi-Cal 3 Point Calibration

Following the determination of the 3-point loading, load and calibrate point 1, 2 and 3. It important to follow the progress of loading the lightest to the heaviest.

Channel A Example

Loading Point 1: 11000 kg

Press to enter the calibration menu. Press , to bring cursor to Full.

Empty ➔ Full

Multi Cal 00

With the cursor on the desired channel, use the arrows to record the weight of point 1.

Total : 31000

1 11000 20000

The display shows, at the bottom left corner, the point of calibration that you are recording.

Repeat these steps for Point 2 and 3.

Load Point 2: 14000 kg

Load Point 3: 17000 kg

Important!
If your calibration is not good, you must repeat the entire calibration of the three calibration points.

Important!
If you disabled the Multi-Cal, the factor will that will be used is Point 2, it is determined by the maximum legal weight.
**Slide FW**

This option lets you see the live distribution of weight of channel A or S when moving the fifth wheel position. This allows weight distribution without having to recalibrate the system.

This option will only be available if you chose a truck configuration with virtual steer weight. (S).

How to use this function:

Access Options and select SlideFW.

Access Options and select SlideFW.

Press Cycle.

Once on flat ground, press Cycle to start load distribution. The following will be displayed.

### Cycle if OK

<table>
<thead>
<tr>
<th>Steer</th>
<th>Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000</td>
<td>18000</td>
</tr>
</tbody>
</table>

At this point you can start moving the fifth wheel forward or backward.

When moving the tractor under the fifth wheel, the weights of both channels will change live.

Once satisfied with the load transfer, press Cycle to exit.

### Cycle if OK

<table>
<thead>
<tr>
<th>Steer</th>
<th>Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>6200</td>
<td>16800</td>
</tr>
</tbody>
</table>

### Cal to set

<table>
<thead>
<tr>
<th>Steer</th>
<th>Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000</td>
<td>18000</td>
</tr>
</tbody>
</table>

**Note:**

For optimum precision, stay on flat ground.
**Net / Gross Weight**

Net weight is the weight of the load only. The gross weight is the weight of the vehicle and the load together.

**Note!**

You can change from gross weight to net weight without the need to recalibrate.

- **Net weight**: Off
  - **Language**: Eng
  - **Unit Measure**: lbs
  - **Increment**: 10

When the cursor is on Net weight, press Cycle to select On or Off. Press ACQ to exit.

**Language**

In this section, you can choose the language you want to work in. English, French, or Spanish.

- **Net weight**: Off
  - **Language**: Eng
  - **Unit Measure**: lbs
  - **Increment**: 10

When the cursor is on Language press Cycle to select the language Fr, Eng or Esp. Press ACQ to exit.

**Units**

You can work in either pound (lbs) or kilograms (kg).

- **Net weight**: Off
  - **Language**: Eng
  - **Unit Measure**: lbs
  - **Increment**: 10

When the cursor is on MeasureUnit press Cycle to select lbs for pounds or kg for kilograms. Press ACQ to exit.

**Increment**

You can work either in increments of tens (10) or hundreds (100).

- **Net weight**: Off
  - **Language**: Eng
  - **Unit Measure**: lbs
  - **Increment**: 10

When the cursor is on Increment press Cycle to select the 10 (tens) or 100 (hundreds). Press ACQ to exit.
Displaying in tons

Weight can be displayed in Metric ton (1000 kg) tmet or Imperial ton (2000 lbs). tImp

➔ TonDisplay Off
  Nb Decimal 2
  Cycle time 2
  Auto Zero On

When the curser is on TonDisplay, press Cycle to select Off, tmet (metric) or imp (imperial). Press ACQ to exit.

Note!
Even if you chose to display in tons, you will need to calibrate in pounds (lbs) or kilograms (kg). TM or TM will be displayed on the main screen where kg or lbs would be.

Number of decimals

Choose the number of decimals that will be seen when you choose to display in tons. (0-1-2).

➔ Nb decimal 2
  Cycle Time 2
  Auto Zero On

When the curser is on Nb decimal press Cycle to select the number of decimals you want displayed 0, 1 or 2. Press ACQ to exit.

Cycle time

Select how long you want the different channel weights will be displayed when in Cycle.

➔ Cycle time 2
  Auto Zero Oui

When the curser is on Cycle time, press Cycle to select between 1 and 15 seconds. Press ACQ to exit.

Auto Zero

When performing an empty Cal, a zero must be done before recording the weights. This function will perform an automatic zero if the empty weight is changed.

➔ Auto Zero On

When the curser is on Auto Zero press Cycle to turn auto zero On or Off. Press ACQ to exit.
Pause Option

This function freezes the weights between the activation point and the deactivation point. If you activate Pause at 30000 lbs, whenever you deactivate the Pause, say the next morning, the weight will remain at 30000 no matter what, even if there has been temperature changes or other reasons that the weight should have changed.

→ Opt Pause  Off
EnergySave Off
AutoShutof On
ShutoffTim 5

When the cursor is on Opt Pause, press Cycle to turn ON or Off
Press ACQ to exit.

How to use this function:

STEP : 1
Place your vehicle on flat ground.

STEP : 2
While on main screen, press Up and Down simultaneously and hold for 5 seconds. Pause will be displayed. The weights are frozen.

STEP : 3
You can move your vehicle. The weight will not change.

STEP : 4
Before deactivating Pause, place your vehicle on flat ground, press Up and Down simultaneously and hold until Pause shuts off. The weight displayed will be the same as when it was frozen and are now live.

NOTE!
It is important to follow each step to prevent the need to recalibrate.

Tip!
If the Gage reading of pressure or stress (GA) is not equal to the sum of all the sensors on that channel, divided by the number of sensors, you need to perform an empty tare (Zero).
Battery saver

Wireless communication needs a lot of energy and drains batteries rather quickly. This function reduces the number of requisition by half which helps save battery power. It does not affect precision.

When the cursor is on EnergySave press Cycle to select On or Off. Press ACQ to exit.

Auto Shut off

This function enables the unit to shut off automatically after a period of inactivity.

Bring the cursor to AutoShutOf, press Cycle to select On or Off. Press ACQ to exit.

Shut off time

This function lets you decide the delay at which your PS2 will automatically shut off if there is no activity. Make sure that the function is turned On. You decide between 1 and 10 minutes.

Bring the cursor to ShutOffTim, press Cycle to select 1 to 10 minutes. Press ACQ to exit.

RS 232

This function activates the communication to a RS232 device. Don’t forget to configure RS232.

Bring the cursor to RS232, press Cycle to select On or Off. Press ACQ to exit.
No N/A

This function hides the N/A (non applicable). N/A appears when a channel is activated but does not see a designated sensor.

| RS232 | Off↑ |
| No N/A | On |
| Controller | Off |

Bring the cursor to No N/A press Cycle to select On or Off. Press ACQ to exit.

Controller

Activating wireless controllers.

| RS232 | On↑ |
| No N/A | Off |
| Controller | Off |

Bring the cursor to Controller press Cycle to select On or Off. Press ACQ to exit.
Choose truck

Choosing the image for your vehicle configuration.

Choose truck

Nh channel  2
SuspensionCfg
NoairLimit   1

Bring the cursor to Choose truck press Cycle to enter image directory. Use the arrows to select the vehicle that best suits your configuration. Press ACQ to confirm.

IMPORTANT!
The image of the truck must match the type of vehicle and number of channels to display. At the right is the image directory stored in the PS2 memory. Below each image notice the truck channel (A & B). The image can be changed later but it must always match the number of channel and vehicle. An image change does not affect the calibration of sensors. If you are trying to acquire sensors C or D and that your image does not show C or D, you will not see them. The PS2 will only search for activated channels. MAN Mode (manual mode) is used when the configuration of the truck does not appear in images or to display no image. When you select a tractor-trailer, SVI will appear in the right corner of the screen. These letters determines the state of the steering axle. Refer you to the next section Choosing a steering axle.
Steering axle

When you select tractor-trailer images, SVI appears in the top right corner of the screen. These letters determine how the weight of the steering axle is calculated.

Once you have selected the desired tractor-trailer image, press Cycle to select S, V or I. Press ACQ to confirm.

**S= Standard**

The axle is not instrumented and its weight is included in channel A.

**V= Virtual :**

The weight of the S channel is estimated from the weight applied to the drive axle group (Channel A)

**I = Instrumented :**

The steer axle is instrumented and becomes channel A.

Nb channel

This function displays the number of active channels based on the displayed image of the truck. This feature is only editable manually.

In MAN MODE (Manual mode) you can choose the number of activated channels. (1 to 7 channels)

![Choose truck](image)

Bring the curser to **Nb Channel** press Cycle to select between 1 to 7 channels. Press ACQ to confirm.

**Tip !**

The steering axle Virtual (S) and Man Mode can be activated in the Suspension Configuration menu.
Suspension Configuration

This indicates the type of sensor in each of the active channels.

Choose truck  
Nb channel 2  
➔ SuspensionCfg  
NoairLimit 1↓

Bring the curser to SuspensionCfg press Cycle to enter the menu.
Displayed will be:

➔ Susp MFAA  
Virtual Ch S

In the first line where Susp is displayed, letters are descriptive of the sensor types and the number of letter indicates the number of channels in service (In the example there are 4 channels activated).

Description of sensor types:

A = Air  
M = Mechanical  
F = Flexmeter  
H = Hydraulic  
0 = Non activated channel

SoftChannel indicates if the virtual channel for the steer axle is in function.

Steer axle possibilities:

• X = Non activated channel  
• S = Activated (S for Steering)

Tip !
If you decide to drop a semi-trailer, an error message will be displayed. You can change your configuration so the system ignores that specific semi-trailer and get rid of the error message.

Dropping a channel in a configuration

In SuspensionCfg menu, press Cycle . Another curser appears under the first letter of the configuration.

➔ Susp M F A 0  
Virtual Ch S

Next
Continued Dropping a channel

Use the arrows $\leftarrow \rightarrow$ to select the channel to be dropped. Press the UP arrow $\uparrow$ to change the channel to 0. Press ACQ $\bigcirc$ to confirm and exit the menu.

**NOTE !**
After confirmation you cannot return to this menu to re-activate this channel. To re-activate, you must reacquire this sensor.

In our example, you would see the following screen. You will notice that the dropped channel is now marked N/A.

---

**Suspension Configuration in MAN Mode**

In manual mode, you can drop a channel as explained above but follow the following steps to enable the virtual steering axle mode (S).

**NOTE !**
Remember that the (S) weight is estimated considering the weight applied on the drive axle group (A).
TAG Axle (AUTO MODE)

The Tag Axle configuration determines the weight applied on an auxiliary lift axles. When the function is enabled the weight of the tag is displayed. The weight of the axle comes from calculating the weight loss of channel A and B.

**NOTE!**
This function can only be used with the following trucks:

Use

When the truck is loaded and the auxiliary axle is raised, the weights are distributed as follows;

Full T: 35000 kg
A 10000 B 25000

Before lowering the Tag Axle, Press Down , the PS2 starts calculating and the new weight distribution is displayed as follows;

Full T: 35000 kg
A 9000 B 21000 C 5000

Before raising the Tag axle, press UP then raise it.

TAG Axle (MAN MODE)

When in MAN MODE, you will need to activate TAG AXLE. With the curser on Tag Axle press Cycle to select Yes or No;

→ Tag Axle YES
Tag Adjust 2

Thereafter, you must specify on which channel the Tag is positioned.

→ Tag Axle YES
→ Tag Adjust 3

With the curser on Tag Adjust press Cycle to select position between 1 and 7. In our example, it is in position 3

Use

MAN MODE display.

Gross T: 35000 kg
MAN MODE
A 10000 B 25000

Before lowering the Tag Axle, press Down , calculation begins, you may then lower the Tag Axle and see the new weight distribution.

Gross T: 35000 kg
MAN MODE
A 90000 B 21000 Tg 5000
No Air limit

NoAirLimit is where you determine the pressure limit below which the NoAir message is displayed to warn you that there is no pressure in the air sensor. Factory set pressure is 3 psi.

Factory set pressure is 3 psi.

For example, if you do not connect the air line between the tractor and the semitrailer, the weight of the trailer will not be shown. An Error message and NoAir will be displayed.

Bring the cursor to NoAir limit, press Cycle to enter the menu. Use the arrows to select between 1 and 15 Psi. Press ACQ to confirm.

Hide No Air

When enabled, Hide NoAir will hide the No Air message and will not produce an error message. The Total weight will remain displayed.

Bring cursor to Hide NoAir, press Cycle to select On or Off. Press ACQ to exit.

Tip!

This function is very useful with air lift axles.
Safety Menu

You can lock multiple menus. As needed, a menu or a portion of the menus can be locked or all at once.

The following menu appears. Point the cursor on the first digit of the password if the locking was not enabled the password is 0000.

Give password
0000
↑

Use the arrows to change the password. (Numbers only 0-9). Use the arrows to move to the next digit or to the previous digit.

Once done, press Cycle to enter lock menu.

If you have entered the correct pass word, the following message will be displayed: PASSWORD OK!

Forgotten password or password error

If you do not enter the correct password the following message will appear;

Password error
125000

The code under the Password error message is used to get a new password from the manufacturer. Give this code to your local dealer.

With a correct pass word, the following screen appears:

The first menus you can lock are:

- Cal/ : Calibration.
- Opt/ : Option modifications.
- Cfg/ : Configuration modifications.
- Tech/ : Technician mode modifications.

Bring the cursor to Cal/Opt/Cfg/Tech press Cycle to select Lock or Unlock.
Continued Locking

To go to the next lock press the down arrow ↓. Use the Up arrow ↑ to go back one step.

Zero, Locks the Tare button ←. Bring the cursor to Zero, press Cycle to select Lock or UnLock.

Tip!
If the vehicle has mechanical sensors, there may be thermal drifts. In this case, being able to make the empty tares is necessary.

Locking Acquire prevents the acquiring of any additional sensors.

Bring the cursor to Acquire, press Cycle to select Lock or UnLock. To go to the next lock press the down arrow ↓.

Locking Add sensor will not allow the operator to change the a sensor channel.

Bring the cursor to Add sens press Cycle to select Lock or UnLock.

To confirm and exit press ACQ .

The next message will ask you to confirm the pass word. If there are no changes, press Cycle repeatedly until you exit the menu.

To change your password, use the arrows ↑ ↓. To go to the next digit and exit, press Cycle .

New password
0000
↑

New password
3458
↑
To communicate with the wireless transmitter that transfers data to a printer or onboard computer, the device address need to be previously registered in the PS2.

The address is located on the device sticker next to «ID». As illustrated below.

Bring the curser to Printer add press Cycle to enter.

Manually enter the device address.

Left and right arrows are used to select the digit to edit. Down and Up arrows allows you to change the number. Numbers 0-9 and letters A to F inclusively.

Once the last digit is edited, press Cycle to confirm and exit. At this point, the PS2 will initiate communication with the printer and will try to print a test ticket.

If successful, a weigh ticket with only the Cleral logo will be printed.
If not successful, the following message will be displayed:

Trouble shooting !

- Check if you have correct address.
- Check connections
- Check power

Using the printer

While on main screen, press Data - Print . Print will be displayed under the vehicle indicating that the data has been sent to the printer or onboard computer.

NOTE !

Press Data-Print for additional tickets.
SensorAdd

This function allows you to associate and / or modify sensor inputs or channels or disable them. Possible for the multiplexer, transmitter or sensor tire. The 8 channels are: A / B / C / D / E / F / G / H and 0 for non-activated).

With the curser on SensorAdd press Cycle to enter the menu. The following is displayed:

→ Mul 5043  AAAAA
  Air 3B3D   B000
  FLX       CC00

The curser points to the Multiplexer, all 4 inputs are identified as «A» with the first «A» flashing. Use ↑  ↓ to change the channel that is flashing . Use ← → to change channel. To exit, press ← after the last channel flashing. You may now use ← to go to the next line.

Note!
There is always 4 inputs per line (INPUT: ABCD) even in the case where you only need and have one usable input.

Note!
It is possible to have the inputs attributed to different channels.

Example:
In the case of a multiplexer on a straight body truck, it is divided in the following way:

This if what you would see in the SensorAdd for this multiplexer:
Sensor Name

This function allows you to name the sensor to facilitate its identification. This name is frequently the same as the vehicle’s identification number. The name can have up to four characters and is identified by numbers or letters.

With the cursor on Sensor Name press on Cycle to enter menu. The following is displayed:

- Cache NoAir          NON   ↑
- Safety Menu          Sens. add

The cursor multiplexer and the first letter flashing. Modify the name by using . Use to go to the next character. Once this line completed, press again. With nothing flashing, you can now use to go to the next line.

MulConfiguration

This function is only accessible if you anchor a multiplexer for mechanical sensors. This function allows you to setup the different parameters for any mechanical sensor inputs.

The cursor on MulConfig press to enter the menu. The PS2 will ask for a password:

- Donne mot de passe

Enter your administrator password. If no password has been entered, the factory set password is 0000. Following the password, the following is displayed:

- Mul 5043          871C
- Mul 5043          985B

With the cursor on the Multiplexer to be set, press to enter in its configuration menu.
The following is displayed:

<table>
<thead>
<tr>
<th>Gage ALL</th>
<th>4,32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gage InA</td>
<td>4,32</td>
</tr>
<tr>
<td>Gage InB</td>
<td>4,32</td>
</tr>
</tbody>
</table>

The is cursor on **GageALL**. If there is a value, this will be the gage factor for ALL the inputs. (4,32 is the factory set gage factor).

For technical reasons, it is possible to change the gage factors for individual inputs. In this case **GageALL** would be **0,00**.

<table>
<thead>
<tr>
<th>Gage ALL</th>
<th>0,00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gage InA</td>
<td>3,20</td>
</tr>
<tr>
<td>Gage InB</td>
<td>5,44</td>
</tr>
</tbody>
</table>

In the next step, the following information appears;

<table>
<thead>
<tr>
<th>Gage InD</th>
<th>4,32 ↑</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min Freq</td>
<td>1100</td>
</tr>
<tr>
<td>Max Freq</td>
<td>1400</td>
</tr>
</tbody>
</table>

The minimum and maximum frequencies are displayed. These frequencies should only be modified with the manufacturers permission.

---

**PS2 Name**

This menu allows you to name your PS2. Preferably unique, choose a name that will differentiate it from other PS2’s. This name will automatically be transmitted when printing a weigh ticket or when transmitting data.

The name can have a maximum of ten characters. Letters (A-F) and or numbers (0-9).

Bring cursor to **PS2 Name**. press Cycle to enter.

**PS2 Name**

TRUCK 2586

Use the left and right arrows to move from left to right and use the down and up arrows to select the desired character.

Press ACQ to exit.
Date and Time

This section explains how to change the date and time in your PS2. This information will be transmitted when transmitting data.

Bring cursor to Time and date, press Cycle to enter.

The cursor points to the time. Press Cycle. The time will be hi-lighted and the hour flashes. (hh).

You can now edit the hour using the Down and Up arrows. Use the Left and Right arrows to move to the minutes (mm) and then to the seconds (ss).

Repeat these steps to edit the date.

Note!
The PS2 does not have a back-up battery for the real time clock. You will need to edit each time you change the batteries.
Technical information and trouble shooting

Average reference sensor readings

Here are the approximate zero reference readings that you should see. These are the values to which the sensors should be adjusted when the truck is empty.
Air sensor: between 10.00 and 20.00 PSI
Mechanical Sensor: between 130.00 and 170.00
Flexmeter: between 20.00 and 40.00

Note!
If the vehicle has handling equipment mounted on it, like a crane, it is possible that the sensor values could be higher.

These are approximate values with a loaded vehicle:

Air sensor: between 50 and 150 PSI
Mechanical Sensor: between 200.00 and 325.00
Flexmeter: between 60.00 and 90.00

Cannot calibrate Full weights?

There is a good chance that you have entered empty weights with a loaded vehicle. This will result in association the zero values to a heavy vehicle. This will make it impossible to enter the Full weights. The only fix is to empty the vehicle and repeat the calibration procedures.

ERREUR Codes

No AIR, MinAlr or Max Air

This error code indicates that the sensor does not detect air pressure. Code No Air is triggered if the pressure is less than the limit listed. View No AirLimit, Min Air or Air. Fix: Physically check that there is air pressure to the sensor. If there is no pressure, find the source of the problem. If there is pressure, check the pressure reading, go to the Gage menu and check the problematic channel. If the sensor still does not read pressure, there may be a problem. Consult your dealer. If the pressure reading is below the limit entered, the sensor operates, you must find out why there is little pressure.

Min Flx or Max Flx

Unstable air pressure

Check the problematic sensor in the Gage menu. Refer to Gage Section. If the pressure reading is unstable and starts to go down, you are certainly in the presence of an air leak. The leak drops the pressure reading and when the compressor restarts, it rises back up.
Non-repetitive Air sensor reading

In most cases, the problem is the height control valve. To check this, purge and inflate the suspension at least 10 times. If the pressure does not come back to within .0.50 psi each time, you may have a defective valve. Check to replace.

Mechanical sensor !A !B !C !D !E

The exclamation mark error code ( !A !B !C !D !E ) will appear in these conditions:

- The cable end is not well attached to the sensor. Check the hose clamp.
- The mechanical sensor is under tensioned. The sensor reading will be under 165.00
- The mechanical sensor is under tensioned. The sensor reading will be -325.00 to 165.00.


The question mark error code ( ?A ?B ?C ?D ?E ) will appear in these conditions:

- The sensor is not connected to the multiplexer.
- The mechanical sensor cable is cut or damaged.

N/A Code

This code indicates that the channel is not activated. This will appear non activated channels when the PS2 is turned on.

OVER Code

This code appears if the display counter weight is at its maximum. The maximum count is 99999 for a channel or the total. Theoretically, it is impossible for a counter is at its maximum. In such a case, check the zero, the empty weight or factor of the channel displaying the code.
Positioning wireless devices

Always try to install air sensors, multiplexers, and transmitters on the outside of the vehicle frame and in the best line of sight as possible. The lesser the barriers, the better the communication between wireless devices.

Install wireless devices outside of the frame

Line of sight is the best way to get good communication.

Air connections

Single valve tractor connection is identical to a semi-trailer connection.

1 Height leveling valve

Cut the air line beyond the valve near the air bag. Install the T connector. Bring air line to the air sensor.

Make sure that the vent tubing is facing down to prevent moisture and other debris from clogging the vent.
Recommended power supply

Voltage : 10 to 30 Vdc
  › On power lighter cord

Voltage : 10 to 36 Vdc for:
  › Air sensors
  › Multiplexers
  › Transmitters

Note!
Low or high power will result in erratic readings and can even damage wireless devices.

Batteries (2 X AA) Hand held

Batteries must generate;
Minimum: 3,00 Vdc together.
Amperage minimum :  Amp

Only use batteries recommended for digital cameras and nothing less.

Note!
It is important not to invert the batteries.
Remove batteries when the hand held is not in use.

Do not use low voltage batteries as it will cause erratic readings and can also cause corruption of the internal memory.

Wire connections

The black and red wires are connected to the vehicle main power supply. The WHITE wire serves only for automatic acquiring procedures. The white wire should be connected to a temporary power supply that is only activated while the wireless device is being acquired. It can be connected to the break lights or back-up lights for example.

Break light installation

**In America**

Black wire : Ground (-)
Red wire : Positive (+)
White wire : Break light positive (+)

Back-up light installation

**In Europe**

Black wire : Ground (-)
Red wire : Positive (+)
White wire : Back-up light positive (+)

**NOTE !**
If the white wire is not powered, you will not be able to automatically acquire it.

**NOTE !**
If the white wire cannot be powered, only a manual acquiring procedures can be performed to acquire it.
The Pressure Stress menu will display the average gage readings for each individual channel.

The curser on **Pressure Stress** press to enter the menu. The average gage readings will be displayed. The letter **G** indicates Gage (gauge) and the letter **A** indicates the channel. So, **GA** indicates the gage reading for channel A.

**Note !**
An error code will appear in this menu if a component is in failure or disconnected. ( !, ?, NO AIR or Connect).

**TRICK !**
When loaded, if the gage reading for a given channel (i.e.;GA) is equal or very similar to the Zero reading of the same channel (ZA), this would signify that the Empty calibration values were modified with a loaded vehicle. If this happens, you need to recalibrate the Empty values.

---

**Individual sensor readings**

In the **Pressure Stress** menu, bring the curser on the desired channel, press to display the individual sensor readings.

In this case **B** indicates the channel and **A** indicates the channel input. The unused inputs will be followed with an asterisk ※.

In the case of error codes, Connect will appear on every channel in error status. The gage readings will be shown for the gages not in error.

**IMPORTANT !**
It is in this menu that you will see the real sensor readings.
**Zeros**

The ‘Zero’ is the Gage reading of a channel at the time the empty calibration is performed. Each channel has its Zero.

**Note!**
Once a calibration is completed, Empty and Full, the gage reading and the zero value should be the same or at least very close, when the vehicle is empty.

The Zero can be manually adjusted. It can be raised, lowered, or even brought back to 0.00. But keep in mind that by doing so you also change your calibration values and this is something that you may not want to alter.

The curser on **Zeros** press Cycle to enter the menu. The zero for each channel will be displayed. (Z for Zero and letter A is the channel. So, ZA indicates the Zero for channel A.

<table>
<thead>
<tr>
<th>Zeros</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZA 46,83</td>
</tr>
<tr>
<td>ZB 44,13</td>
</tr>
</tbody>
</table>

Only the activated channels will be displayed.

---

**Modifying a ZERO**

To modify a Zero bring the curser to the desired channel. Press . Another curser will appear to the left of the value.

<table>
<thead>
<tr>
<th>Zeros</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZA 46,83</td>
</tr>
<tr>
<td>ZB 44,13</td>
</tr>
</tbody>
</table>

Use to change the value. To go back to 0,00, press simultaneously on .

---
Factors

Factor is the coefficient multiplied by its Gage minus its Zero which produces the weight on one channel.

Weight channel A = ((GA-ZA)*FA)

Note!
You can manually adjust the factor on the channel. You can increase, decrease or reduce it to zero. However, remember that your calibration changes.

With the curser on Factors press to enter the menu. The letter F signifies Factor and the following letter the channel. Thus, FA signifies the Factor for channel A.

Note!
FS is the Factor for the virtual steer axle weight. Which is not a channel.

Modifying a Factor

To modify a Factor, with the curser on the desired channel press use modify the factor. Press to exit this specific channel.

Note!
FA2 and FA3 are only used in the Multi-Calibration mode.

Press to select the next channel to modify. Press to exit the factors and to exit.
Multi-point Factor

Simultaneously the multi-point calibration option is enabled, the factors used in the calibration will be active. To move from one factor to another use \( \downarrow \) \( \uparrow \). To edit a factor refer to the instruction on the previous page.

➔ FA1 861 208.81
FA2 855 225,33

In the multi-point calibration if you wish to delete a factor and its calibration point, just go about calibration and reset. Factor is automatically deleted. Refer to the previous page for instructions.

In the multi-point calibration, you can delete a factor or factors to repeat precise calibration points.

In our example, the operator notices an inaccuracy in the middle of his load. In this case, he zeros the FA2 and FA3 to redo calibrations close to the real weight limits. There will be two new calibration points FA2’ and FA3. The new curve will pass through: FA1 - FA2’-FA3.

If the point was in error FA1, it have been necessary to delete the three factors and redo the complete calibration all over again.

Errors Register

The Error Register will memorise and indicate the last 20 error codes.

Pressure Stress
Zeros
Factors
➔ Errors Register

With the curser on Errors Register press \( \downarrow \) to enter the menu. The following will be displayed. Use \( \downarrow \) \( \uparrow \) to scroll.

➔ Err 0 : A No Air
Err 1 : A Connect
Err 2 : B !A
Err 2 : B ?B

When you are done consulting the registry, you can delete all the registry by pressing simultaneously pressing both arrows \( \downarrow \) \( \uparrow \).
Err Cal

When the monitor displays an error code, it is not possible to calibrate when this function is on «System». If the function is on «Channel», then it is possible to calibrate the channels are not in error code.

![Err Cal System table]

The curser on ErrCal press to select System or Channel.

Europe EMC

Some countries of the European union have higher standards regarding the powers emissions. Check the relevant authorities.

If the standard is high choose YES. The PS2 unit is set to meet the highest standard.

Note!

When this function is set to Yes, the power of communication is weakened.

LevelNoise

This function allows you to determine the level of ambient noise. The level is determined on a scale of 0 to 92. The closer to 0 the lesser is the noise and the closer to 92 the higher the noise. This function is used when there is communication problems and RX TX codes.

![LevelNoise table]

The curser on LevelNoise press to calculate the noise level.
Mem Flags

This function generates a code that lets you know the state of the processor. This information can be communicated to the manufacturer if it becomes necessary to resolve internal issues with your PS2.

<table>
<thead>
<tr>
<th>Err Cal</th>
<th>System ↑</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe EMC</td>
<td>Non</td>
</tr>
<tr>
<td>LevelNoise</td>
<td></td>
</tr>
</tbody>
</table>

➔ Mem Flags 1 ↓

Version

Displays the Version of the program.

➔ Version 3.1 ↑

Revision

Displays the Revision of the program.

➔ Version 3.1 ↑

➔ Revision 8
Factory reset

NOTE!
After a factory reset, you must reconfigure the device and re-calibrate the virtual steer. There is no need to recalibrate the other channels because the calibration data is stored directly in the sensors.

To reset, turn the PS2 off.

With the unit still turned off, press . The following will be displayed:

Give password
0000
↑

At this precise moment, press and maintain pressure on both simultaneously until «Give password» appears. Release the arrows.

Give password
1263
↑

Once the password is registered, «PASSWORD OK» will be displayed followed by;

Zmem on

Press to confirm the total unit reset.

Mec Overload No

Press again to confirm:

LoadMNo

Press to confirm and go to the next menu.

The PS2 will display «Setup OK» and will reinitialise the unit.

The PS2 has performed a reset of all its internal memory. The procedure is completed.
Precision problems?

You can detect a problem of accuracy with the total weight. However, to find and fix a problem of accuracy, it is necessary to discriminate the channel in error to find the source.

The first step is to compare PS2 and Weigh bridge empty weights. Note the weights for each individual channel.

If there is discrepancy, we immediately make the correction in the empty weight calibration. (refer to the calibration pages of this manual).

Repeat the same procedures with a loaded vehicle. Remember that you must be loaded to enter Full weights. Also keep in mind NOT TO GO IN EMPTY CALIBRATION with a loaded vehicle.

If the error persists, repeat the same procedure to determine if the errors always originates from the same place.

Note!
Repeat the same steps for each channel.
Before calling for technical assistance, please gather the following information from your PS2. It is the first thing the technician will ask for.

<table>
<thead>
<tr>
<th>Channel</th>
<th>S</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suspension configuration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empty weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revision</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Your Authorised Cleral Dealer/Distributor