MATA 7S

Multi-trailer TPMS

Product Manual

WARNING

THIS PRODUCT CONTAINS BUTTON BATTERIES

The battery is hazardous. Keep batteries away from children, whether battery is new or old. If swallowed, a lithium button battery can cause severe or fatal injuries within 2 hours. Seek medical attention immediately if swallowed or placed inside any part of the body.

Brief description

Thank you for purchasing our multi-trailer TPMS!

Mata7S is a tyre pressure monitoring system suitable for 12-24V trucks, B-doubles and road-trains.

The system monitors real-time tyre pressures and temperatures and can alert the driver to any abnormal tyre condition. Mata7S can monitor up to 110 tyres, including 1 towing truck (max 14 tyres) plus 6 trailers (max 16 tyres per trailer).

Mata7S's hook-and-drop function will automatically show any connected trailers and the user does not need to perform any function. This allows for easy mix-and-match between trucks and trailers, which is great for fleets.

⚠ For your safety

Before using the product, please read and follow the manual instructions.

1. This product must be installed correctly before use. Avoid damaging the sensor and the wheel when installing.

2. This product is a safety accessory and cannot directly prevent puncture or tyre leakage. Please react promptly to the product warning signals and resolve abnormal tyre conditions before getting back on the road.

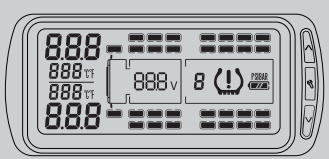
3. The user is responsible for safe driving, taking care of the vehicle, and ensuring the correct installation and use of the product. We assume no liability for damages and losses.

4. Never place the display in an airbag deployment area.

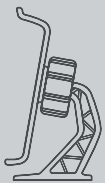
Table of Contents

1 Package Contents (External)

Truck Module Kit



Mata 7S Display



Display Stand

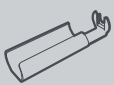
Manual

External truck sensor

KC-01 booster for truck

Display cable

Tie



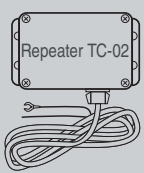
Spanner

Double-sided Sticker

Screw

Trailer Module Kit

External truck sensor

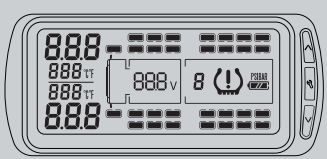


TC-02 repeater for trailer

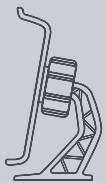
Tie

Package Contents (Internal)

Truck Module Kit

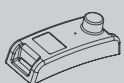


Mata 7S Display



Display Stand

Manual



Internal tructk sensor

KC-01 booster for truck

Display cable

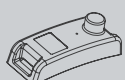
Tie

Strap with Clamp

Double-sided Sticker

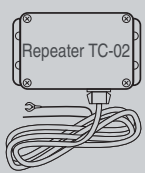
Screw

Trailer Module Kit



Internal tructk sensor

Strap with Clamp

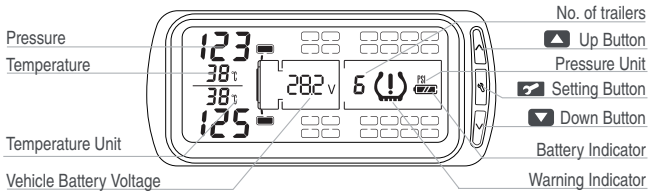


TC-02 repeater for trailer

Tie

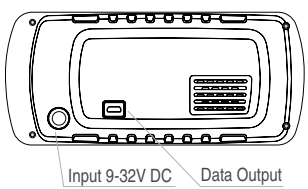
2 Display

Display front

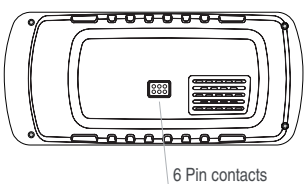


Display back

Mata7S Display



Mata7S CAN / Mata7RS Display



1. Display ON/OFF/SLEEP

Display will automatically turn on when charging or connected to power. Display can also be manually turned ON/OFF by holding and button for 3 seconds, when the display is disconnected from power.

Display will automatically go into SLEEP mode to save power in 4 minutes if there is no vibration detected. If vibration is detected, display will awaken from SLEEP mode.

2. Quick check

To manually check the next two tyre temperatures and pressures, press the button. To check the previous two tyre temperatures and pressures, press the button.

3. Reading the display

When the display is set to Front Axle Only View, the display will only show the front axle tyre pressure and temperature. This does not affect the alarm function: if another tyre is experiencing tyre problems, it will pop up on the display.

When the display is set to Truck Only View or All Tyre View, the display scrolls through tyre pressure and temperature data two at a time on the screen, starting from the first axle to the last, and then loops back.

When the display is set to All Tyre View, for trailers, the display will assign each trailer a random “trailer number”. It will then scroll through truck, trailer 1, trailer 2, trailer 3... up to trailer 6, before looping back to truck data.

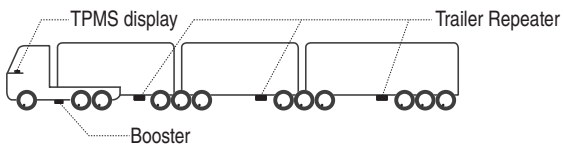
If there is an alert, the warning indicator will flash. Flip to the last few pages of this manual for different warning signals.

3 Installation

Four installation steps:

(1) Display (2) Booster (3) Repeater (4) Sensors

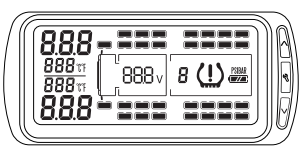
Overview diagram:



Note: a sensor is installed on each tyre that requires monitoring.

(1) Display Installation

What you need:



Mata 7S Display

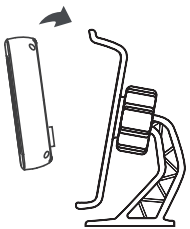
Display stand

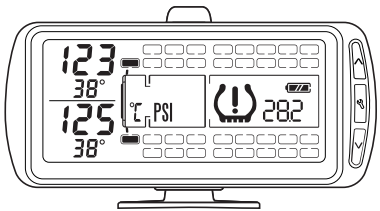
Display cable

Double-sided Sticker

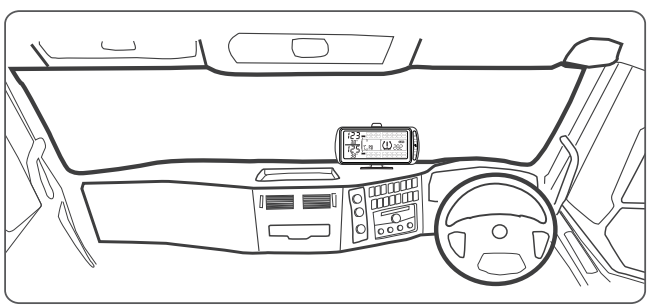
Screw

Display Installation:



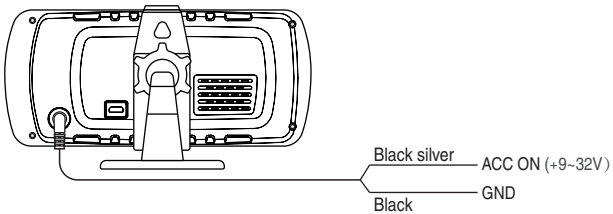


Mount the display stand onto the dashboard with screws or double-sided sticker. Choose somewhere visible but not obtrusive. Make sure the display cable can reach the display stand. Do not place in an airbag deployment area.

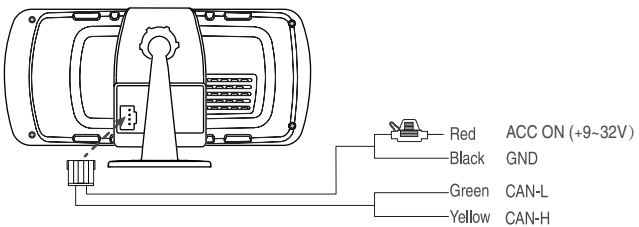


Wire Connection

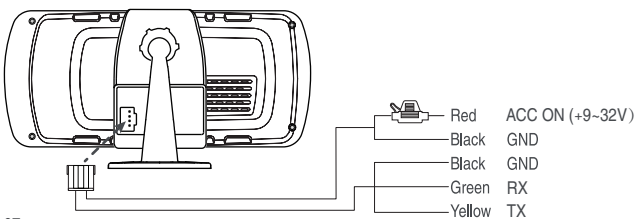
Mata7S Display Installation



Mata7S CAN Display Installation

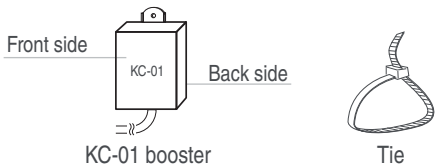


Mata7S RS Display Installation



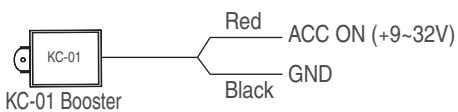
(2) Booster Installation for truck

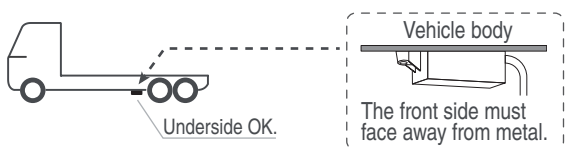
What you need:



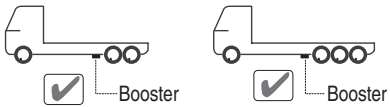
- Install the booster on the truck / prime mover. The booster front side must not face metal parts.
- Booster is waterproof and can be installed on underside of the truck.
- Position the booster as short distance as possible to the sensors.
- The booster should be mounted firmly by tie or screw.

Wiring & positioning:

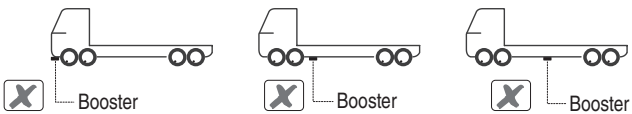




Booster installation position



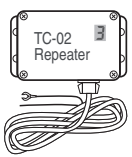
Wrong installation position



(3) Repeater Installation for trailer

What you need:


Tie

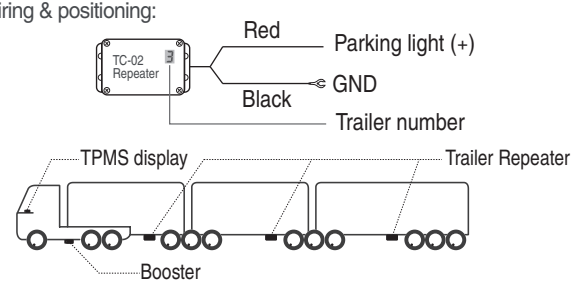


TC-02 repeater for trailer

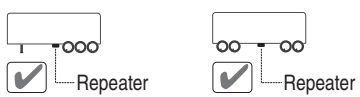
Installation instruction:

• TC-02 repeater communicates trailer data to the display through power line.
• Install the repeater on the trailer. It needs to be connected to the same power loop as the display (e.g. park light).
• One trailer, one repeater. The repeater should be positioned as short distance as possible to the trailer sensors.
• The repeater has a screen that will show the trailer number when powered. Ensure the screen is visible.
• The repeater should be mounted firmly by tie or screw.

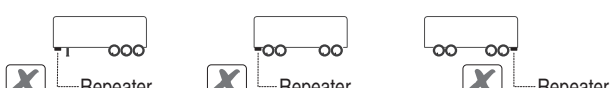
Wiring & positioning:



Repeater installation position



Wrong installation position



(4) Sensor Installation

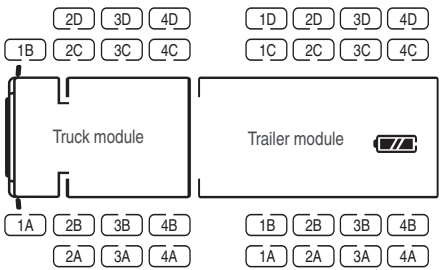
General sensor position diagram

Sensor position is labelled using a number followed by a letter.

The number represents the axle number (maximum 4 axles), starting from the front of the vehicle. The number can be 1, 2, 3 or 4.

The letter represents the tyre position (maximum 4 tyres per axle), starting from the left side of the vehicle. The letter can be A, B, C or D.

For example:

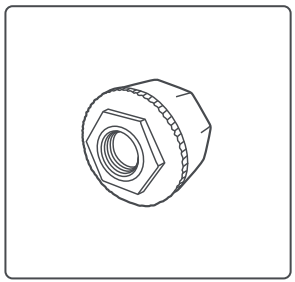


Generally, each module's sensors are labelled this way, unless it is a custom order. The display will show the outline of the tyres for paired sensors. Position with no paired sensors will be blank.

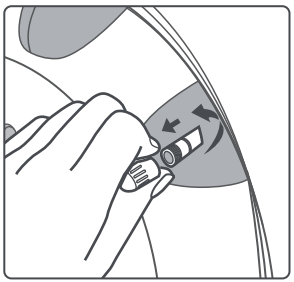
Please install the sensors in their correct position.

Note: Kits usually come pre-paired, however, the user can customise where each sensor goes by deleting or pairing sensors (see page 21).

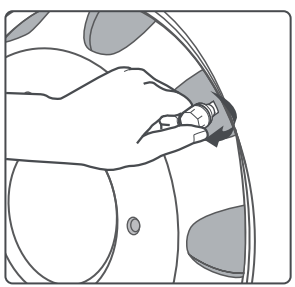
External Sensor Installation



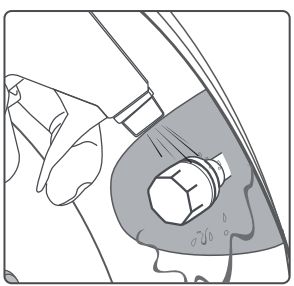
i. Take an external tyre sensor.



ii. Remove the original valve cap.

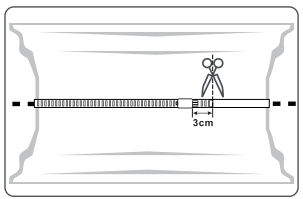


iii. Screw on the sensor.

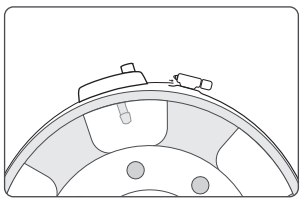


iv. Check air leakage by spraying soapy water.

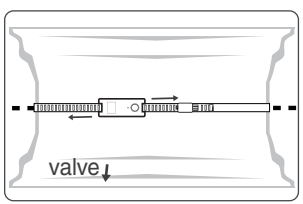
Internal Sensor Installation



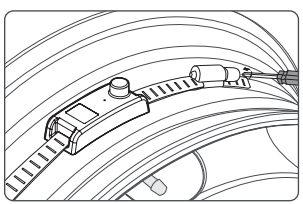
1. Loop the strap around the drop centre of the wheel. Make sure the strap is straight.
Cut off excess strap 3cm past the band clamp.



2. Thread sensor into the strap. Then thread strap through the band clamp.



3. Move sensor along the strap until close to the tyre valve. The sensor should always be installed near the valve in order to know the sensor's approximate location.



4. Make sure strap is straight and tighten the band clamp with screw, so that the strap is fixed securely and not moving. Do not overtighten.

4 Functional Test after Installation

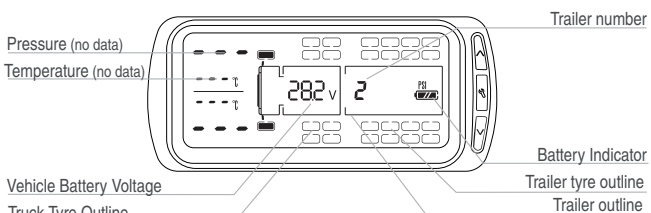
After installation, perform a two-step functional test to check that the product is installed and functioning correctly.

Step 1. Turn on truck ACC to confirm that products are on the same power loop.

Check:

- The display automatically turns on as soon as it is powered.
- The display is showing the correct number of tyre outlines in the correct positions.
- If trailers are connected, the trailer outline and tyre outline will appear on the Mata7S display within 30 seconds.
- If trailers are connected, each repeater screen shows a random red numeric digit between 1~6.

Display Turns On:

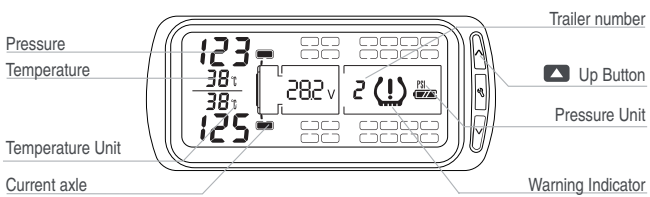


Step 2. Connect/disconnect with some trailers normally and drive the truck. All tyre data should appear in 60 seconds.

Check:

- After connecting/disconnecting the trailers, the trailer outline and tyre outline will automatically appear/disappear on the Mata7S display within 60 seconds.
- Pressure data updates as soon as the truck starts driving. After several minutes, the user can quickly check all tyre data on the display using the ▲ button.
- The display may alarm if any tyre is 25% lower or 25% higher than the default pressure alarm. In this case, the user can adjust the alarm (see page 16~17).

Example Updated Data:



5 Product Specifications

Display

Frequency	Operating Voltage	Operating Temperature
433.92MHz ±50KHz	9~32V	-20~+85°C/ -4~+185°F

Sensor

	External Sensor	Internal Sensor
Weight	18g	36g
Working Temperature	-40~105°C / -40~221°F	
Operating Frequency	433.92MHz	
Pressure Monitoring Range	0~14 BAR / 0~203 PSI	
Pressure Accuracy	±0.2 BAR / ±3 PSI	

User Selectable Alarm Range

Front Axle Baselines Pressure	15~159 PSI / 1.0~11.0 BAR
Truck Basline Pressure	15~159 PSI / 1.0~11.0 BAR
Rear Tyre Baseline Pressure	15~159 PSI / 1.0~11.0 BAR
High Temperature Alarm	70~105°C / 158~221°F

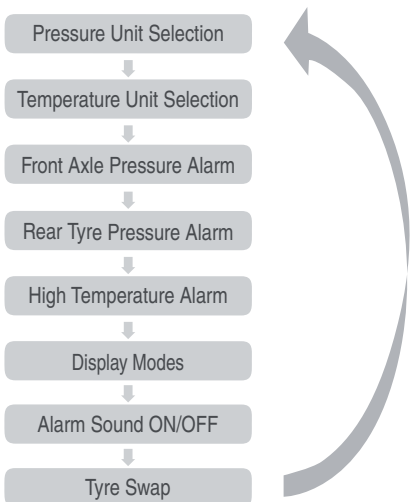
6 TPMS Settings

Settings Mode

1) Enter Settings Mode: Hold button for 3 seconds until you hear a beep, then short press button to rotate through the functions, press ▲ or ▼ to make a choice.

2) Exit Settings Mode: Hold button until you hear two beeps.

Functions rotation



Pressure unit selection:

1. Hold button until you hear a beep to enter Settings Mode.
2. “BAR” or “PSI” will flash on-screen. Short press ▲ to choose between “BAR” or “PSI”.
3. To go to the next setting, short press button once; or exit by holding button until you hear two beeps.

Temperature unit selection:

1. Hold button until you hear a beep to enter Settings Mode.
2. Short press button once. “ ˚C ” or “ ˚F ” will flash on-screen.
3. Short press ▲ button to choose between “ ˚C ” or “ ˚F ”.
4. To go to the next setting, short press button once; or exit by holding button until you hear two beeps.

Front axle tyre baseline pressure:

This sets the pressure baseline of the first axle of the truck (the two steering wheels). Alarm will be triggered when type pressure is ±25% of the baseline.

1. Hold button until you hear a beep to enter Settings Mode.
2. Short press button twice. Front axle tyres and “102” (PSI) or “ 7.00 ” (BAR) will flash on the screen.
3. Use ▲ and ▼ buttons to set the new baseline pressure.
4. To go to the next setting, short press button once; or exit by holding button until you hear two beeps.

Default front axle baseline pressure: 7.00 BAR/102 PSI

Rear tyre baseline pressure:

This sets the pressure baseline of the rear axles of the truck and trailers. Alarm will be triggered when type pressure is ±25% of the baseline.

1. Hold button until you hear a beep to enter Settings Mode.
2. Short press button three times. All rear tyres and “101” (or “7.00”) will flash on the screen.
3. Use and button to set the new baseline pressure.
4. To go to the next setting, short press button once; or exit by holding button until you hear two beeps.

Default rear tyre baseline pressure: 7.00 BAR/101 PSI

High temperature alarm:

Alarm will be triggered when the tyre temperature is higher than the high temperature value.

1. Hold button until you hear a beep to enter Settings Mode.
2. Short press button four times. “90” or “194” will flash on the screen.
3. Use and button to set the new high temperature value.
4. To go to the next setting, short press button once; or exit by holding button until you hear two beeps.

Default high temperature: 90˚C/194˚F .

Display Modes:

All Tyre View: the display will cycle through and show all tyre data, including any trailer tyre data (default setting).

Front Axle View: the display will only show the front two tyre pressures and temperatures.

Truck View: the display will cycle through and show tyre data of the truck (not the trailer).

To change this setting:

1. Hold button until you hear a beep to enter Settings Mode.
2. Short press button five times. All tyre symbols will flash.
3. Short press the button to set the desired display mode.
4. To go to the next setting, short press button once; or exit by holding button until you hear two beeps.

NOTE: the display mode does not affect the alarm function of the device. The device will monitor all tyres.

Alarm sound ON/OFF

1. Hold button until you hear a beep to enter Settings Mode.
2. Short press button six times.
3. Short press button to toggle ON or OFF the alarm sound.
4. To go to the next setting, short press button once; or exit by holding button until you hear two beeps.

Sound ON

Sound OFF

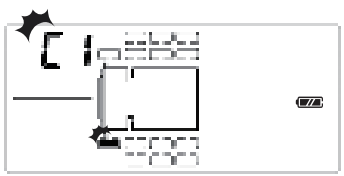
Tyre swap function

This function is useful for internal sensors. For external sensors, we recommend unscrewing and re-installing the sensors in the correct position, or re-pairing the sensors to the correct position instead of using the Tyre Swap function.

This function swaps two tyre positions on the display.

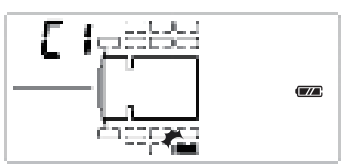
1. Hold button until you hear a beep to enter Settings Mode.

2. Short press button eight times, “C1” and the left front tyre will flash on the screen.



Step 2

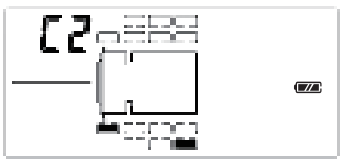
3. Use or button to select the first tyre position for the swap. The selected position will flash.To confirm, press once;



Step 3

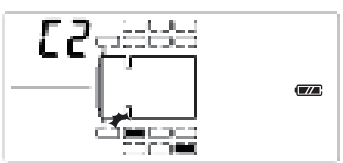
4. After confirming C1, “C2” will flash on the screen, now select the second tyre to swap, to confirm tyre swap press once.

Note: If C1 and C2 positions are different, tyre swap will occur. If you didn’t want to perform tyre swap, simply make sure that C2 is the same position as C1, so that no swap occurs.



Step 4

5. The next setting (BAR/PSI) will flash on-screen. Exit by holding button until you hear two beeps.



Step 5

To swap another set of sensors, users need to exit Settings Mode and repeat step 1~5.

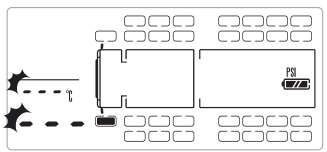
7 Sensor Pairing

Sensor pairing is used to pair a new sensor to the display or to change a sensor position. All our TPMS units come with sensors already paired to the display.

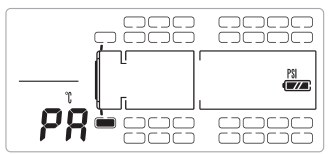
Sensor Pairing Instructions:

(1) Skip this step if the user is only pairing sensors to the truck. If pairing sensors to the trailer: first connect and power the TC-01 booster and display via the same power loop for 30 seconds, until the trailer outline appears on the display. Now the display can be taken off from the stand to pair sensors.

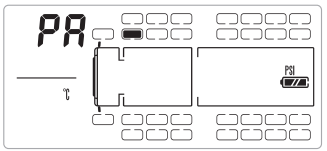
(2) Press button 5 times to enter Pairing Mode with a beep. Left front tyre and "---" will flash on the screen.



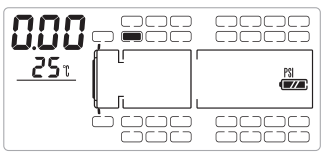
(3) Keep sensors at least 50cm away from the display. Hold button until you hear a beep. " PA " and the left front tyre will flash on the screen.



(4) Use or button to select the tyre position you want to pair the sensor to.



(5) After you selected the position, bring one sensor close to the top side of the display and move it around a bit for the display. A beep sound will indicate that the new sensor is paired and real-time pressure "0" (PSI/BAR) will appear on the screen. Put the paired sensor back to 50cm away from the display.

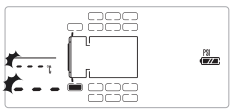


(6) Repeat step 4~5 to pair another sensor, or exit by holding button until you hear two beeps.

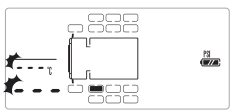
Sensor Pairing Method 2 (for trucks only, not trailers):

⚠ *This method is for truck sensors only, trailer sensors cannot be paired using this method.*

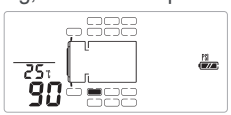
(1) Press button 5 times to enter Pairing Mode with a beep. Left front tyre and "---" will flash on the screen.



(2) Use or button to select the tyre position you want to pair the sensor to. The chosen position will flash.



(3) Take the respective sensor and screw it onto a tyre, and make sure the display is close by. When the pressure data shows on the display, confirm by short pressing button once. The chosen position will stop flashing, the sensor is paired successfully.



(4) Repeat steps (2)~(3) to pair another sensor or exit by holding button until you hear two beeps.

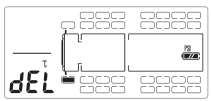
8 Sensor Deletion

⚠ *WARNING: consider carefully which sensors to delete before proceeding. Trailer sensor cannot be deleted, it can only be overwritten.*

(1) Press button 5 times to enter Pairing Mode with a beep.

(2) Use or button to select the tyre position you want to delete.

(3) Hold button until you hear a beep. "dEL" and the selected tyre will flash on the screen.



(4) Confirm by short pressing button once, " - - - " will flash on the screen; to cancel, press button once.

(5) To delete another sensor, repeat steps (2)~(4); or exit by holding button until you hear two beeps.

Accidental Deletion: Accidentally deleted sensors can be re-paired to the correct position using sensor pairing.

Trailer Sensor Overwrite

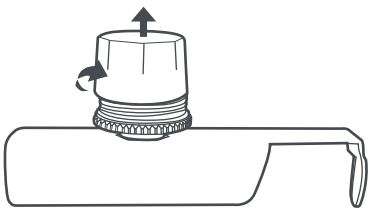
Trailer sensors on the display cannot be deleted. They can only be over-written by another sensor.

For example, the user wishes to remove sensor 3B on the trailer:

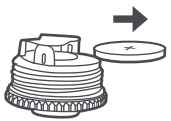
1)Take another sensor that is paired to the display (e.g. 3A) and pair it to position 3B on the display. This will overwrite 3B's data. Save and exit.

2)Take the same sensor, and pair it back to its original position 3A on the display. Save and exit. Now, 3B position should be blank, and the 3B sensor should be a free sensor (not paired).

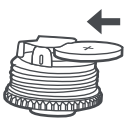
External Sensor Battery Replacement



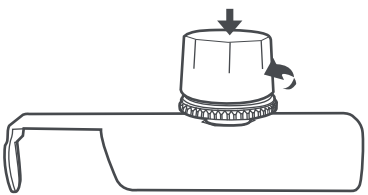
i. Unscrew the sensor cover with spanner



ii. Remove the old battery



iii. Replace with new
CR2050 battery
(the + side faces upwards)



iv. Screw on the sensor cover

⚠ CAUTION: Please keep battery away from children.

*Only high quality battery can last for more than 2 years.

9 Q&A

Q The display is showing "---", what should I do?

A 1. Drive for 1 minute;
2. Ensure that all the sensors are present;
3. Ensure there is no electronic interference around (e.g. turn off DVRs);
4. Change sensor battery;
5. If data is still missing, commence sensor pairing.

Q How to silence the display alarm?

A You can press any button to temporarily silence the display, or turn off the alarm sound (visual alarm will still be on), see page 18.

Q The display is constantly alarming for low pressure, how to keep it quiet?

A 1. Set the tyre baseline pressure to a lower value.
2. Inflate tyres to correct pressure.
3. Turn off the alarm sound, see page 18.

Q What to do if I want to add more sensors?

A Please purchase extra sensors from authorised stores and follow the sensor pairing instructions (page 21) to pair the extra sensors to the display. To add sensors to a trailer, make sure you have a TC-02 repeater for trailer .

Q How do I restore factory default settings?

A Hold and for 3 seconds will restore factory default settings. This clears the data and resets parameters, but does not change sensor pairings.

Q The sensor is in the wrong position, what can I do?

A Please pair the sensor to the correct position (see page 21).

Q If one of my TPMS sensors becomes lost or damaged, can I just buy a new sensor and pair it to my existing TPMS display?

A Yes. An individually purchased sensor needs to be paired to your existing display, please refer to page 21.

Q I accidentally deleted one of the sensors from the display using the Sensor Deletion function, how can I get it back?

A Please follow instructions on page 21 to re-pair the deleted sensor to the display.

Q During a wheel rotation, how can I make sure the sensors are in the right position?

A External sensors can be taken off and installed to the correct position. Tyre swap can be performed for internal sensors.

Q My display only shows the two front tyres, but doesn't rotate and show other tyres?

A The device is set to "Front Axle View". Please follow instructions on page 17 to change to "All Tyre View".

Q The display warns me of low sensor battery, but it stops after a while. Why is that so?

A The warning for low sensor battery is only 2 beeps during a trip, it alerts the user to change the battery. There are two cases when the system "thinks" the sensor battery is low:
1. The sensor battery is low. The user needs to change the battery.
2. The temperature is less than -40°C and the battery cannot output normal power. In this case, the user does not need to change the battery.

Q Display cannot be turned off manually?

A The display cannot be turned off while it is connected to power. The display can be turned off manually when the display is disconnected to power.

Q Where do I find help?

A Please contact your direct seller or retailer.

10 What to do if I get an alarm?

There are some things to keep in mind:
1. TPMS most commonly alarms for low pressure and fast leakage.
2. TPMS can only warn the driver which tyre is experiencing issues. It cannot resolve tyre issues. Driving without resolving the issue may be dangerous.
3. For multiple trailers, each trailer is assigned a random trailer number (1~6) at the beginning of each drive. Therefore, when there is a problem with one of the trailer tyres, please do not turn off the ACC. The repeater needs power to show the trailer number on their little screens.

5 steps after the display starts beeping:

1. Drivers should respond to the warning by stopping safely. The beep can be temporarily stopped by pressing any button.
2. DO NOT TURN OFF ACC*. If turned off, please turn on ACC within 3 minutes.
3. Check the problem trailer number, tyre position and the warning signal that is flashing on the display. (Warning signals see next page.)
4. ACC still on, locate the problem tyre on the truck or the trailers. The trailer number will show on the repeater screens as well.
5. Resolve the tyre problem before getting back on the road.

Note: If it is not possible to immediately rectify the issue, and the user wishes to stop the beeping, see below for alarm sound ON/OFF:

Alarm sound ON/OFF

1. Hold button until you hear a beep to enter Settings Mode.
2. Short press button six times.
3. Short press button to toggle ON or OFF the alarm sound.
4. To go to the next setting, short press button once; or exit by holding button until you hear two beeps.

Sound ON Sound OFF

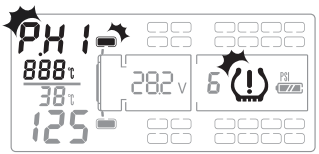
*What happens if ACC is turned off:
Situation 1. If the driver has turned off ACC, repeater will lose power and will not display the trailer number. Therefore, turn on ACC within 3 min to re-display the number.
Situation 2. If ACC is turned off for 3 min or more, the trailer number may be different the next time the driver is driving.
Situation 3. If the repeater is connected to constant power that does not cut off when ACC is turned off, then booster will not lose power. Therefore it is irrelevant whether ACC is turned off or on throughout this process.

11 TPMS Warning Signals

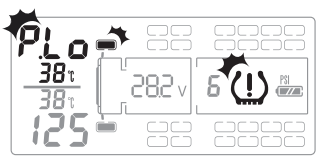
When the unit detects abnormal tyre conditions or low sensor battery, the display will emit audible beeps and visual warning in the corresponding tyre location.

Alarm on trailer:

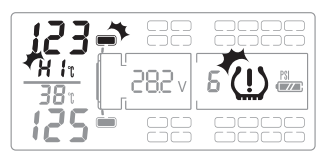
- Check problem position
- Check trailer No.
- Do not turn off ACC
- Go to trailer to check



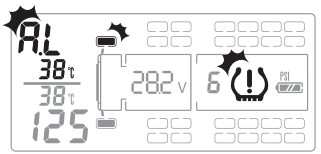
High pressure alarm, above 25% of the baseline pressure



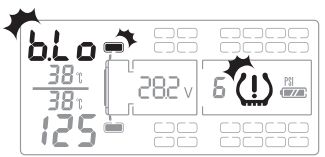
Low pressure alarm, below 25% of the baseline pressure



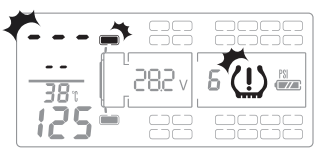
High temperature alarm, above the set high temperature alarm



Air leakage alarm, when tyre is losing pressure



Sensor low battery alarm



Sensor failure or missing sensor alarm

The display will give alert* when it doesn't detect a particular sensor. Prolonged non-detection will result in an alarm**.

*Alert: "(!)" turns on, problem tyre outline " " blinks slowly.
**Alarm: "---", "(!)" and " " flash with audible beeps.

FCC Statement

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1)This device may not cause harmful interference.
(2)This device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Note:This equipment has been tested and found to comply with the limits for a class B digital device,pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates uses and can radiate radio frequency energy and,if not installed and used in accordance with the instructions,may cause harmful interference to radio communications.However,there is no guarantee that interference will not occur in a particular installation.if this equipment does cause harmful interference to radio or television reception,which can be determined by turning the equipment off and on,the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement,This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

Model: TE05, FCC ID: 2AP2YTE05
Model: TN05, FCC ID: 2AP2YTN05
Model: KC-01, FCC ID: 2AP2YKC-01
Model: TN01, FCC ID: 2AP2YTE01