

# TireMoni Checkair TM-100 and TM-210

## Tyre pressure monitoring system

### Instruction manual



#### Supplier:

**tpm-systems AG**  
Romanshornestr. 117  
CH-8280 Kreuzlingen, Switzerland  
Fon: +41 (71) 698 6480  
Fax: +41 (71) 698 6481  
HRA Thurgau: CH-170.3.028.628-4

#### Distributor:

**tpm GmbH**  
Gewerbepark 26  
D-86687 Kaisheim  
Fon: +49 (9099) 966 4966  
Fax: +49 (9099) 966 4969  
email: support@tiremoni.com

*"At one glance – fully informed – a good feeling!"*

**Revision v2.11 – 2013**

## Table of contents

<b>TABLE OF CONTENTS</b>	<b>2</b>
<b>IMPORTANT SAFETY INSTRUCTIONS</b>	<b>3</b>
<b>PREVENTIVE MEASURES</b>	<b>4</b>
<b>MAIN FUNCTIONS OF TIREMONI CHECKAIR</b>	<b>4</b>
<b>PROPERTIES OF TIREMONI CHECKAIR</b>	<b>5</b>
1 Installation	6
2 Operational concept	6
3 Reliable and robust	6
<b>OPERATING ELEMENTS OF DISPLAY UNIT</b>	<b>7</b>
<b>DESCRIPTION OF THE GRAPHICAL USER INTERFACE</b>	<b>8</b>
<b>STARTING UP</b>	<b>9</b>
System diagram	9
Installation	9
Installation instructions	9
Installing the display unit	9
Installation of the pressure sensors	12
Inserting batteries into the sensor	13
Anti-theft protection for sensor (optional)	14
Installing the display unit at the front screen or dashboard	17
<b>INSTRUCTIONS FOR USE</b>	<b>20</b>
1 Basic display unit functions	20
Position of operating elements	20
2 Screen content and basic functions	20
3 Advanced settings	24
<b>SYSTEM OPERATION</b>	<b>25</b>
1 Initialisation	25
2 Main screen	25
3 Power-save mode (sleep mode)	26
4 Abnormal tyre pressure or temperature	26
Tyre pressure below lower warning threshold	26
Tyre pressure above upper warning threshold	27
Tyre temperature above upper temperature warning threshold	27
Display unit: Battery becoming exhausted	28
Sensor: Battery becoming exhausted	28
5 Description of alerts and displays	29
<b>ADDITIONAL INFORMATION</b>	<b>30</b>
<b>INSTRUCTIONS IN CASE OF ERROR</b>	<b>30</b>
<b>PACKAGE CONTENTS</b>	<b>32</b>
<b>SPECIFICATIONS TM-100</b>	<b>34</b>
<b>SPECIFICATIONS TM-210</b>	<b>34</b>
<b>DECLARATION OF CONFORMITY</b>	<b>35</b>
<b>CONDITIONS OF WARRANTY</b>	<b>35</b>
<b>WEEE – DISPOSING OF ELECTRICAL INSTRUMENTS</b>	<b>35</b>

## Declaration of Conformity

This product is in its construction and in its operating characteristic conforming to the applicable European directives as well as additional national requirements.

The conformity has been proven.

The declaration of conformity can be obtained with:

tpm GmbH, Gewerbepark 26, D-86687 Kaisheim or with the responsible importer.

## Conditions of Warranty

In accordance with legal rules this instrument is subject to a warranty period of 24 months from date of order. A copy of the sales slip is sufficient proof of purchase in case of a complaint under warranty. Damages that can be ascribed to wear, transport, overloading, neglecting the operating manual or inappropriate handling will not be covered under this warranty. The same holds for expendables, e.g. batteries. The manufacturer is not liable for indirect consequences and damages. The warranty period is not extended or renewed by any possible repairs. Claims under this warranty are only accepted if the instrument is returned complete and free of charge to the dealer, distributor or manufacturer.

## WEEE – Disposing of Electrical Instruments



Instruments that are marked with the marking shown, must not be disposed of in household waste. You are obliged to dispose of such electronic instruments separately. Please consult your local authority about the possibilities of suitable disposal. With the separate disposal you are returning obsolete devices to a suitable form of recycling.

This way you are helping to avoid potentially hazardous substances to contaminate our environment.

## Specifications TM-100

Sensor specification	
Frequency	433,92 MHz
Measuring range	0 - 4 bar (0 .. 60 psi)
Precision	Pressure $\pm 0,07$ bar (1 psi)    Temperature $\pm 2$ °C
Operating voltage	3V DC
Operating temperature	-40 °C ... 85 °C
Reserve energy	1 - 4 years (or approx. 50'000 km)
Dimensions	Diameter 20.5 mm X Height 20 mm
Weight	10 g ( $\pm 1$ )

Specifications of display unit	
Frequency	433.92 MHz
Reserve voltage	3V DC
Reserve energy	1 –2 years (or approx. 25'000 km)
Operating temperature	-20°C ... 85°C
Dimensions	Width 75 mm X Height 91 mm X Depth 22 mm
Weight	100 g

## Specifications TM-210

Sensor specification	
Frequency	433,92 MHz
Measuring range	0 - 11 bar (0 .. 160 psi)
Precision	Pressure $\pm 0,14$ bar (2 psi)    Temperature $\pm 2$ °C
Operating voltage	3V DC
Operating temperature	-40 °C ... 85 °C
Reserve energy	1 - 4 years (or approx. 50'000 km)
Dimensions	Diameter 20.5 mm X Height 20 mm
Weight	10 g ( $\pm 1$ )

Specifications of display unit	
Frequency	433.92 MHz
Reserve voltage	3V DC
Reserve energy	1 –2 years (or approx. 25'000 km)
Operating temperature	-20°C ... 85°C
Dimensions	Width 75 mm X Height 91 mm X Depth 22 mm
Weight	100 g

## Important safety instructions

**!!! Before starting the tyre pressure monitoring system, for your own safety, please imperatively read and observe these important safety instructions!!!**

### Monitor installation:

- Attach the LCD monitor (display unit) at a place not interfering with the driver's field of vision.
- Make sure to position the LCD monitor in such a way that it cannot fall down during the ride.
- Mind your driving safety when reading the pressure / temperature values from the LCD monitor.
- Do not attempt to disassemble or repair any parts of the system by yourself. Any failure to comply will immediately and irrevocably result in losing the manufacturer warranty.

### Sensor installation:

- Road traffic regulations require that no parts protrude beyond the rim contour. For this reason, please assemble the sensors on short valves in such way only that the sensor stays within the rim contour! For safety reasons, it is prohibited to run the system with the sensors protruding from the rim contour. Disregarding of this provision will automatically void your operating license!
- It is recommended to install sensors on suitable metal valves which are screwed in place: Suitable length so that the sensor does not protrude from the rim and suitable valve type so that the forces are held by the valve case and not the gasket (e.g. Valve series ASC made by Alligator) see <http://shop.tiremoni.com>.
- It is recommended to have the first time installation done by a professional.
- Check the tightness of the sensors after installation, by pouring some water across the valves and then checking for any discharge of air bubbles.
- It is recommended to install sensors using a suitable anti-corrosion spray or copper paste to prevent corrosion from moist and salt.
- It is recommended to rebalance the tyres subsequent to sensor installation.
- When the LCD monitor is not operated, please immediately remove the sensors! In case the sensors remain installed while the LCD monitor is out of operation, you are compromising your own safety, and the system function can no longer be guaranteed!

### Video Channel – TireMoni Support Videos:

You can find instructions contained in this manual also in video format.

Please visit your video channel on Youtube: <http://www.youtube.com/user/tpmsys>

### International:

Deutsch: TireMoni TM-100 / TM-210 User Handbuch: [www.tiremoni.de/Downloads.html](http://www.tiremoni.de/Downloads.html)

English: TireMoni TM-100 / TM-210 User Manual: [www.tiremoni.eu/Download.html](http://www.tiremoni.eu/Download.html)

Francais: TireMoni TM-100 / TM-210 Manuel d'Utilisation: [www.tiremoni.fr/Telecharger.html](http://www.tiremoni.fr/Telecharger.html)

Italiano: TireMoni TM-100 / TM-210 Istruzione d'Uso: [www.tiremoni.it/Scaricare.html](http://www.tiremoni.it/Scaricare.html)

Nederlandse: TireMoni TM-100 / TM-210 Gebruikers Handboek: [www.tiremoni.nl/Downloaden.html](http://www.tiremoni.nl/Downloaden.html)

## Preventive measures




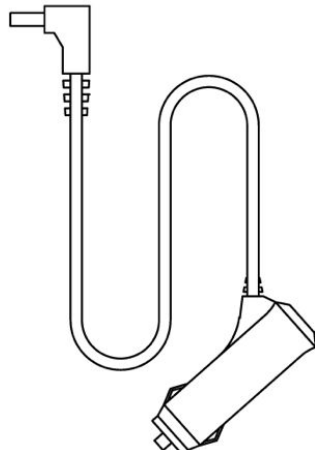
- 1st Please select the position of the display unit during installation in such way not to affect the driver in any way.
- 1st1 Make sure that the display unit is firmly attached at the front screen or dashboard.
- 1st2 When reading the display unit, please remember not to neglect safe driving.
- 2nd Make sure that the display unit can receive signals from all the tyre pressure sensors.
- 3rd TireMoni WTPMS comes with a unique anti-theft protection; its sensors may be installed with or without this feature (optional).
- 4th Make sure to mount the sensors hermetically sealed. If necessary, please check the tightness by pouring some water across the valve (check for bubbling).
- 5th Install sensors using anti corrosion installation spray or copper paste to prevent corrosion from moist and salt.
- 6th In any case of pressure drop, please stop immediately and determine the cause of error.
- 7th The display unit automatically establishes connections in the entire system, as soon as the vehicle gets started. It is normal that the individual pressure values are not immediately updated when the pressure inside the respectivetyres has not changed.
- 8th TireMoni WTPMS possesses some mechanism to avoid any interference from other signal sources.
- 9th The tyre temperature may vary either upwards or downwards, depending on the many different influence factors (i.e. ambient temperature, travelling speed, solar radiation); rising temperatures cause an increased tyre pressure, whereas the pressure will fall when the temperature is falling.
- 10th The tyre pressure is getting lower over the years due to diffusion; this phenomenon is not due to, but merely displayed by TireMoni. In any case, TireMoni only shows the tyre pressure, which is actually available.
- 11th Should you have any questions or issues with reference to your TireMoni product, which are not being responded to in this manual, please contact your nearest TireMoni distributor or check out our website [www.tiremoni.com/FAQ.html](http://www.tiremoni.com/FAQ.html).

## Main functions of TireMoni Checkair

The tyre pressure control system (RDKS or TPMS) is an efficient and cost-effective response to many current safety issues related to motor vehicles. Using a tyre pressure monitoring system avoids driving with too little air pressure available in the tyre, and helps reducing fuel consumption.


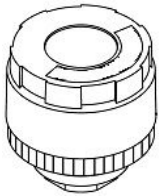





These are your benefits:

- Improved ride qualities and enhanced handling  
The air pressure represents an essential element influencing the road performance of your vehicle.
- Reduces the risk of blowouts  
Selecting the appropriate tyre pressure is critical to safe driving, especially during passenger accommodation or when carrying hazardous material.
- No more need for manually checking the tyre pressure  
With multi-wheel vehicles, much time is required for carrying out the manual tyre pressure control. Monitoring the tyre pressure during the ride manually is not

Display mounting frame		1 pc.
Holder with vacuum cup		1 pc.
Angle adjustment piece with locknut		1 pc.
Cigarette lighter cable		1 pc.



Package Contents

Description	Image	Quantity
TireMoni display unit		1 pc.
Checkair pressure sensor		4 pc.
CR1632 Lithium battery		4 pc.
AAA-1.5V battery		2 pc.
Manual		1 pc.
Anti-theft protection		Socket wrench
		Anti-theft rings
		Socket screws

- possible at all. At anytime, TireMoni provides you with a unambiguous image of the current tyre condition.
- Avoids high running cost  
Due to the consistent radio design and the external sensors, only little expenditure is required for installation. The running costs are minimised by using replaceable batteries.
  - Reduced down times  
The real-time monitoring continuously delivers the values for tyre pressure and temperature; this helps avoiding unexpected break-downs due to defective tyre pressures and temperatures.
  - Reduces fuel consumption  
Per each pressure drop of 0.2 bars, the fuel consumption is increased by 1%, which makes the tyre pressure an essential factor in terms of fuel consumption.
  - Extends the tyre life  
As shown by research findings, already when driving at an air pressure lower than 20% below the set value, the tyre life is reduced by up to 50%. For an optimum utilisation of the available tyre life, the correct tyre pressure thus represents a precondition (please observe your vehicle manufacturer's requirements to determine the correct tyre pressure)
  - Increases profitability  
The result of all the advantages given is: Monitoring the tyre pressure using the TireMoni tyre pressure monitoring system offers more benefits to you than you may expect at first glance.

Properties of TireMoni Checkair

TireMoni WTPMS (Wireless Tire Pressure Monitoring System) – is an effective tool for achieving maximum service life and improved operational safety – the new WTPMS standard - TireMoni tyre pressure control

Technologically, TireMoni is the leading solution in the field of radio tyre pressure monitoring for light to and heavy commercial vehicles and recreation vehicles. By constantly enhancing the design and manufacturing technologies, TireMoni helps improving safe driving while reducing operational cost; as a secondary effect, the environment gets relieved due to reduced fuel and tyre consumption. The most important milestone when developing TireMoni WTPMS was introducing the highly integrated valve cap sensor. This extremely low-weight and compact sensor was especially designed as to allowing a simple and quick installation. This means: Neglecting tyre maintenance to the detriment of safety is now a thing of the past. Using radio technology, the tyre pressure can be read from the user-friendly full graphic LCD anytime you like.

TireMoni WTPMS is available in different configurations, which cover all the combinations of commercial vehicles, such as transporters, motor homes, caravan (trailers), buses, agricultural commercial vehicles etc.

## 1 Installation

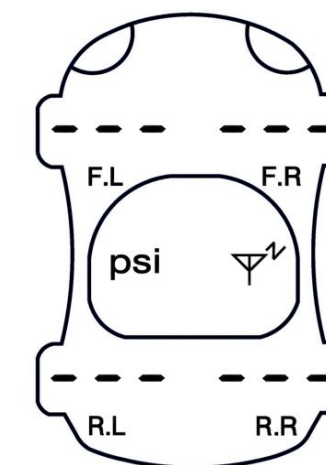
- **Do it yourself (D.I.Y.):** TireMoni can be installed in a very short time. It is recommended to have the first time installation done by a professional.
- **Please note:** Sensors should be installed on metal valves of suitable length. Sensors must not protrude from the rim contour.
- **Wireless Design - Installation without laying cables:** The radio communication between the sensors, relays and the display unit makes installation fast and easy.
- **Battery-operated:** The display unit, the relays and the sensors are run by batteries. The charging condition of all the batteries can be read from the display unit.
- **Low-weight and compact sensor:** The sensors are very small and low-weight, and they have specific highly integrated electronics.

## 2 Operational concept

- **Graphical user interface:** Plain full graphic display providing you with a quick capture of the tyre condition.
- **Real-time:** High-precision monitoring of the pressure and temperature in real-time; precision better than 0.1 bars.
- **Adjustable:** Upper and lower warning thresholds for pressure and upper threshold for temperature can be adjusted by the user.
- **Warnings:** Any abnormal tyre condition (pressure or temperature) can be easily read from the large 3.5" LED monitor and gets signaled by beeps.

## 3 Reliable and robust

- **Anti-theft protection for the sensor:** The pressure sensors can be protected against unscrewing using a fixing stop.
- In any case of loss or damaging, replacement sensors are available, so that the down times for the system stay minimal.
- Safe radio communication ensured due to specific signal processing
- Strict live tests proving its reliability.
- The sensors have a pressure measuring range of 4 bar (60 psi – TM-100) or 12 bar (160 psi – TM-210)
- **Corrosion protection:** The sensor housing has a rust-proofing coating, which is used for extending the sensor operating time. We additionally recommend mounting using a suitable installation spray.



- Make sure that the display unit can receive signals from the sensor. The distance between the display unit and the sensor may be up to 20 meters; however, the actual range of coverage may be lower due to interferences.
  - Make sure that the relays are fitted with batteries.
  - Make sure that the batteries have been inserted with the correct polarity.
  - Please check whether the battery is discharged. The battery may be dead after a longer service life, and we recommend you to replace it.
  - Please make sure that you did not confuse your sensor with another system. Each sensor has its own ID number, and the display unit can only detect and receive the sensors it is associated with and will not accept any other ID numbers.
  - Please remove the sensor battery and put it back in place after a short while (approx. 30 seconds); this will restart the sensor and sign it on in the system.
  - In case the present information should not provide further assistance to you, please contact your TireMoni distributor or our TireMoni support team: [www.tiremoni.com/FAQ.html](http://www.tiremoni.com/FAQ.html)
- Display unit will not quit beeping  
When the display unit has been operated using almost discharged batteries over a longer period, it is possible that the device gets into an undefined state and will not quit beeping. In this case, please replace the batteries, switch off the device and switch it on again after a short while. It should then function normally again.
  - Display becoming dark  
When the temperature (i. e. by solar radiation) rises above 85°C, it is normal for the LCD display to become dark (black). When the temperature is falling, the display gets back to its normal condition.
  - When the temperature falls below –25°C, the response time of the indicators may increase; and the display will respond at a slower rate as usually.
  - Display unit in sleep mode  
When the vehicle is parked (or run vibration-free over a longer period of time), the display unit may pass into the sleep mode in order to save electricity. When touching the device or pressing any control knob, it will be re-enabled immediately.
  - Please make sure that the front screen is clean and flat at the very location you wish to mount the display unit; otherwise, the vacuum cup may not adhere properly and cause the device to come off.
  - The tyre pressure varies depending on different influencing factors:  
The tyre temperature is one of the main factors: Per 10 °C temperature rise, the pressure rises by approx. 0.25 bars (based upon a room temperature of 25°C).

### Additional information

Under normal conditions, the sensor batteries can be used for approx. 1 - 2 years (the operating time may be reduced due to high driving performances). When the battery capacity is getting low, this information is displayed on the screen. Please replace the battery with a new CR1632 lithium battery.

**Notes about the battery**

- Please store any batteries beyond children's reach. In case of swallowing a battery, please consult a physician as quickly as possible.
- Clean the batteries before inserting them using a dry cloth to ensure a good contact.
- Please observe the correct polarity when inserting the batteries (+ away from the sensor, - towards the sensor).
- Do not hold the battery with metallic tweezers or tongs; this may produce short circuits and destroy the battery.
- The battery may explode when handled improperly.
- Do not recharge, disassemble or burn batteries.

### Instructions in case of error

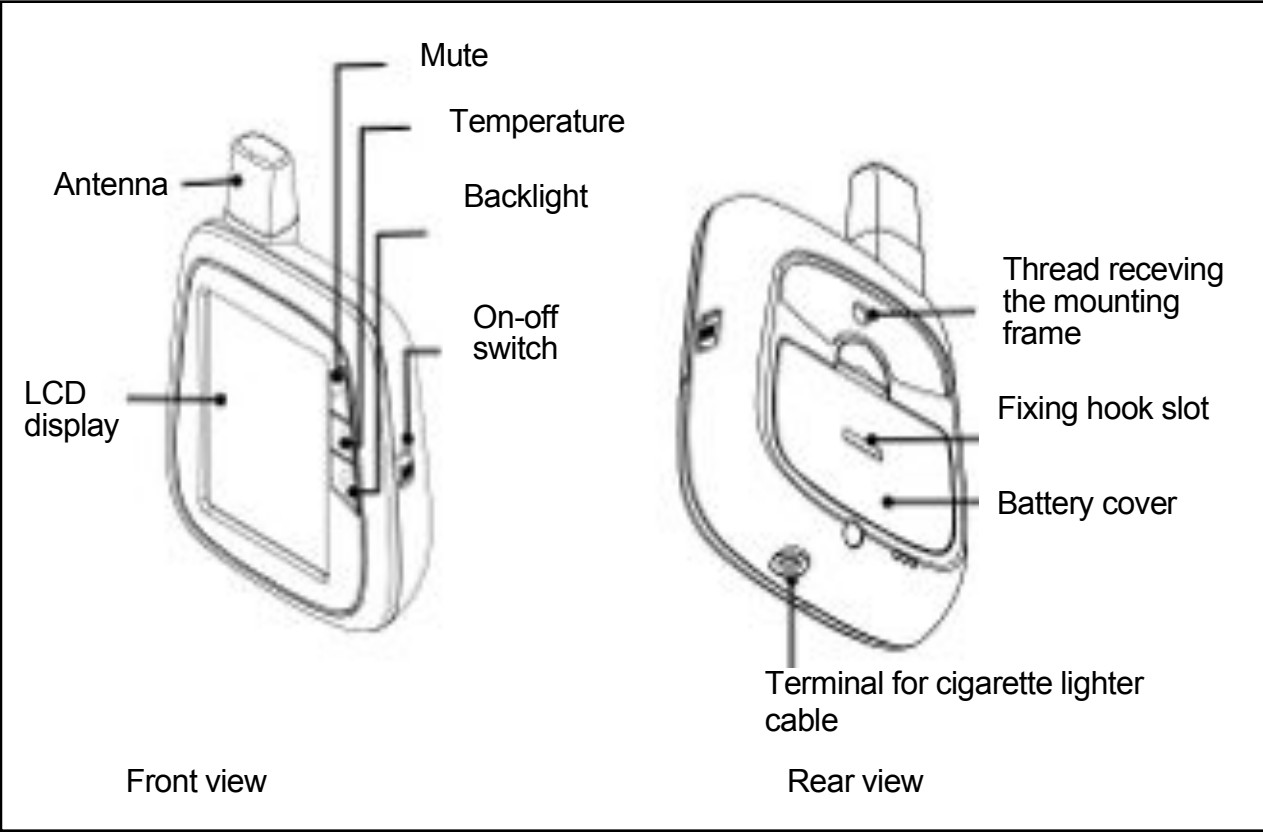
The checklist to follow should help you identifying and resolving any possible problems arising. Please review the installation and operating guidelines before turning to this checklist.

1. Displays disappear from / are not shown in the display
  - A. Make sure that the device is switched on.
  - B. Make sure that batteries have been inserted.
  - C. Make sure that the battery capacity is sufficiently high.
  - D. Make sure that the batteries have been inserted with correct polarity.
  - E. When using the cigarette lighter cable, please make sure that it has been plugged.
  - F. Please check whether the battery is discharged. The battery may be dead after a longer service life, and we recommend replacing it.
  - G. Please check whether the system is in sleep mode; the system automatically passes into the sleep mode for electricity-saving reasons if no activity has been detected for more than 10 minutes. However, you can re-enable the system by slightly striking against or pressing one of the control knobs.

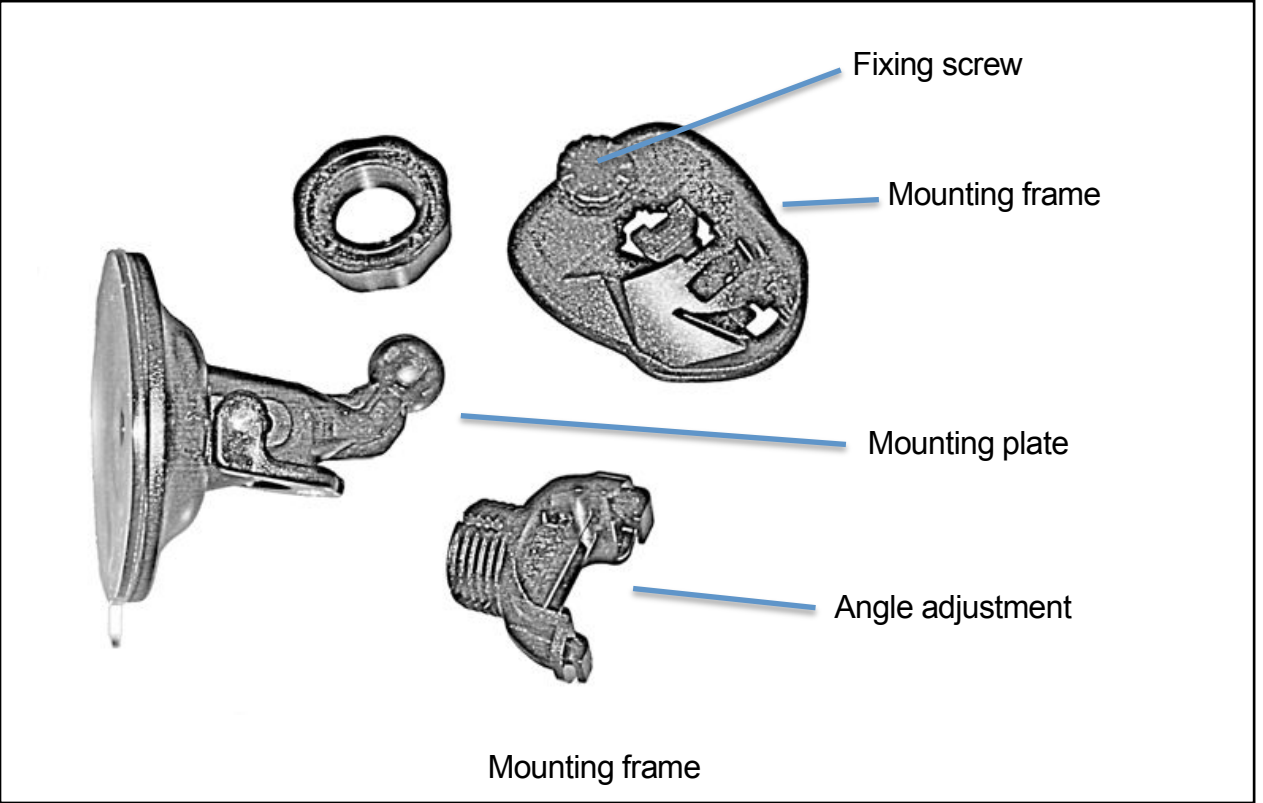
In case the present information should not provide further assistance to you, please contact your TireMoni distributor or our TireMoni support team: [www.tiremoni.com/FAQ.html](http://www.tiremoni.com/FAQ.html)

2. No connection between the sensors and the display unit. The status is displayed as shown below, and the respective pressure values related have gone; instead, ---, is displayed.

### Operating elements of display unit



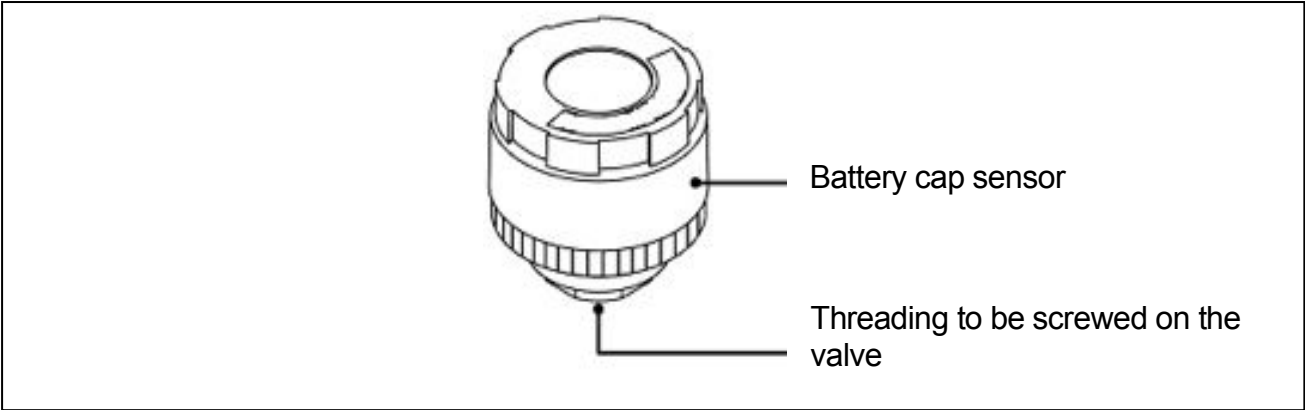
Description of construction frame



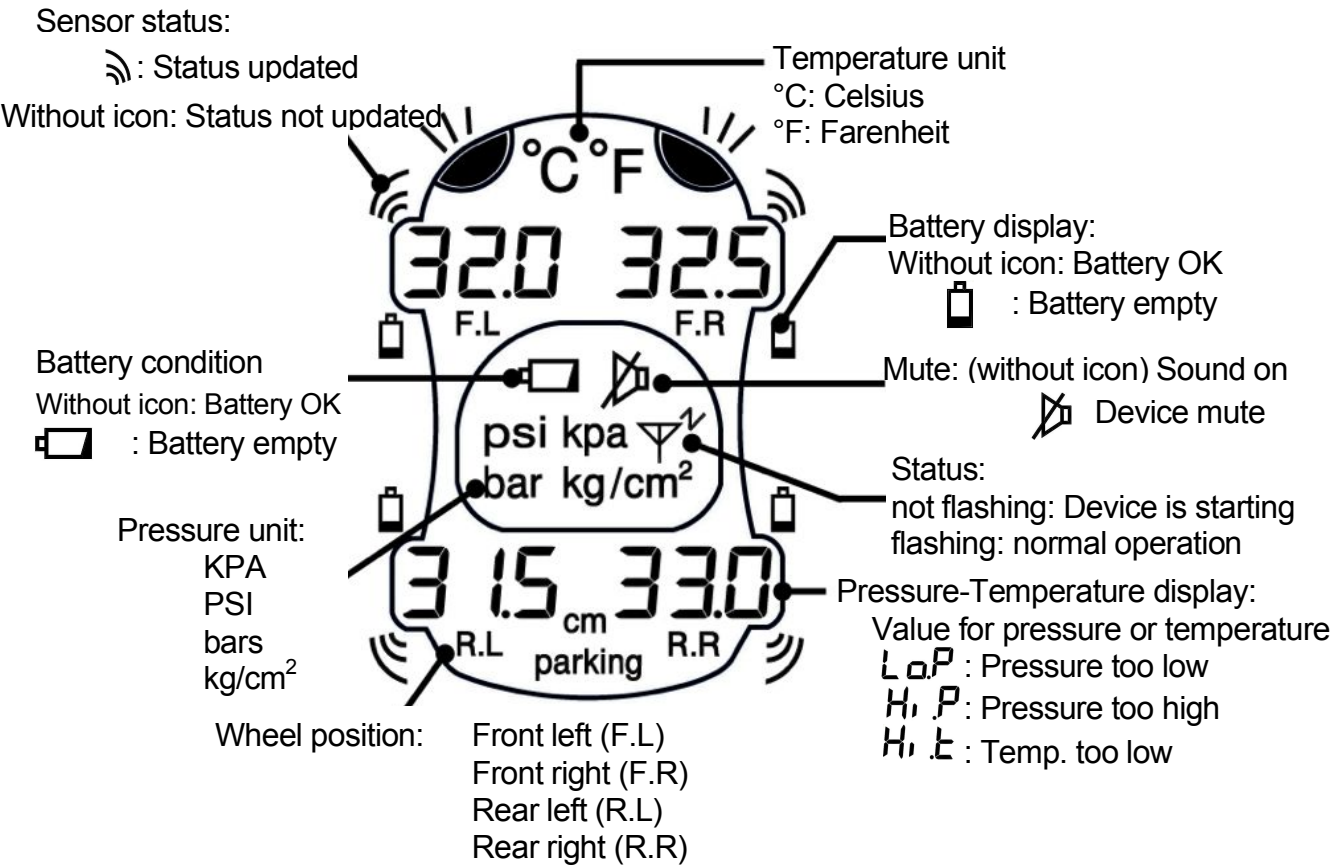


Sensor description

The sensor consists of two parts: sensor cap and sensor housing. The execution as a valve cap allows quick and easy installation, without requiring any technical knowledge



Description of the graphical user interface



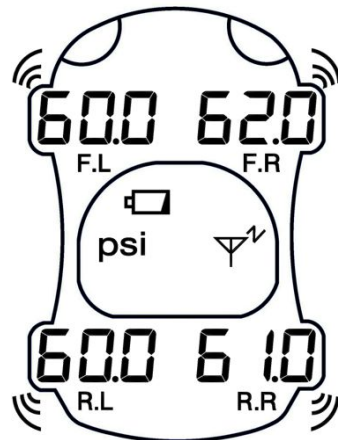
5 Description of alerts and displays

N°	Definition	Purpose	Status
1	Switching on	Advising that the system is now switched on	A beep and switching on the backlight
2	Pressure below the lower warning threshold	To serve as warning that the pressure is too low	Three beeps ten time in a row and switching on the backlight during three seconds
3	Pressure continues to fall by 0.1 bars	When the pressure is below the lower warning threshold, there will be a new warning per 0.1 bars as a reminder	Three beeps ten time in a row and switching on the backlight during three seconds
4	Pressure is above the upper warning threshold	To serve as a warning that the pressure is too high	Three beeps ten time in a row and switching on the backlight during three seconds
5	Pressure keeps on rising by 0.1 bar above the warning threshold	When the pressure is above the upper warning threshold, there will be a new warning per 0.1 bars as a reminder	Three beeps ten time In a row and switching on the backlight during three seconds
6	When the temperature is above the warning threshold	To serve as a warning that the temperature is too high	Three beeps ten time In a row and switching on the backlight during three seconds
7	Main screen displayed	System starting sequence completed	One beep and switching on the backlight during one second
8	Back from the electricity-saving mode	Advising that the system is now enabled	One beep
9	Resetting to factory settings	Advising that the adjustment is now completed	Two beeps and switching on the backlight
10	Learning mode	Advising that the replacement sensor has now been taught in	One beep
11	Back to main screen after completing the adjustment mode	Advising that the settings now have been completed	One beep



**Display unit: Battery becoming exhausted**

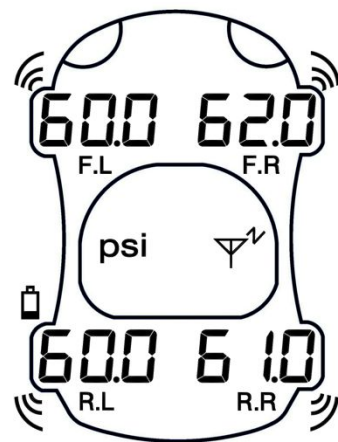
The battery in the sensor is consumed by daily use. When the capacity falls below a certain value, this condition becomes displayed to inform that new batteries shall be used. The symbol is given in the figure below.



Please replace the battery in the display unit once the corresponding message appears to make sure that the system is functioning properly.

**Sensor: Battery becoming exhausted**

The battery in the sensor is consumed by daily use. When the capacity falls below a certain value, this condition becomes displayed to inform that new batteries shall be used. The symbol is given in the figure below.

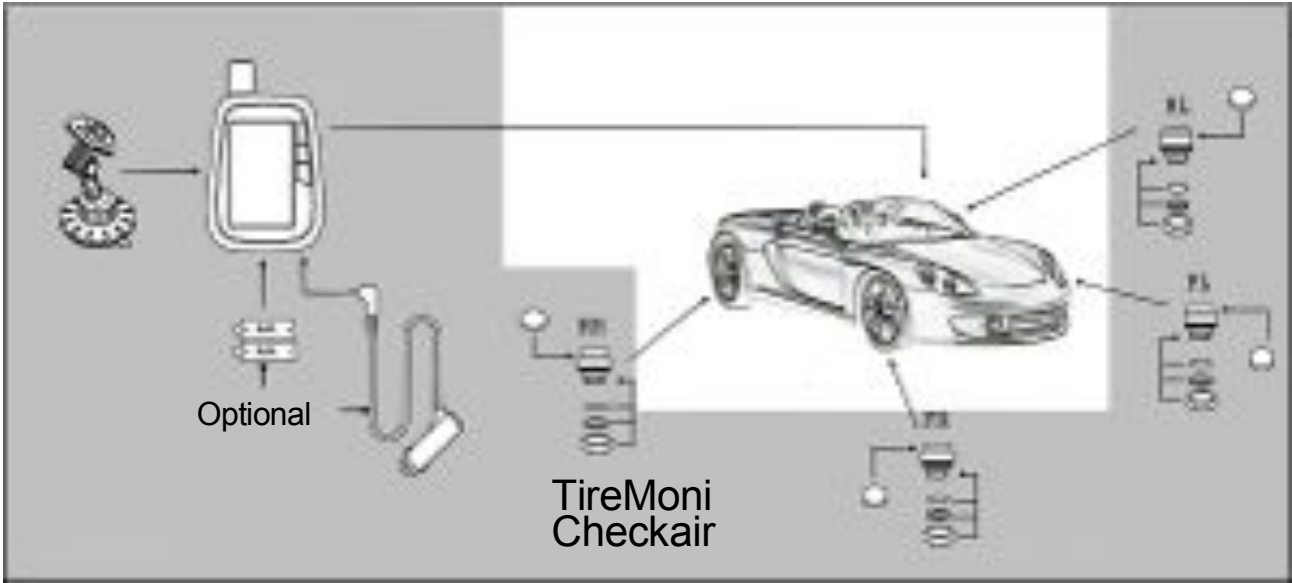


In this example Rear Left (R.L.)

Please change the battery in the sensor as soon this becomes displayed to make sure that the system is functioning properly.

**Starting up**

**System diagram**



**Installation**

The display unit can either be operated using batteries or the cigarette lighter cable. In the following, we will first describe the battery-operation option. Please observe the following steps for starting the relays, display unit and sensors:

**Installation instructions**

1. Insert the batteries into the display unit
2. Switch on the display unit
3. Insert the batteries into the sensors
4. Screw the sensors instead of the valve caps onto the corresponding wheels

**Installing the display unit**

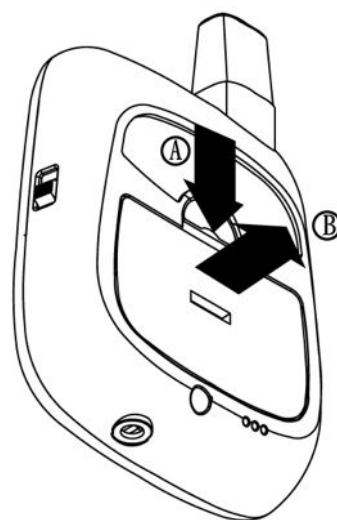
**Battery-operation**

A. Unpack the batteries provided

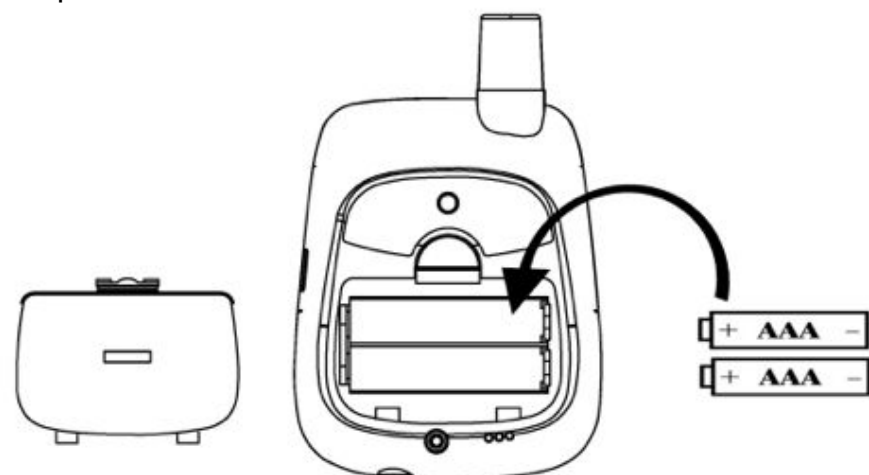


**B. Open the battery compartment**

To do so, please press the lock downwards, as shown in the figure, and open the compartment

**C. Insert the batteries**

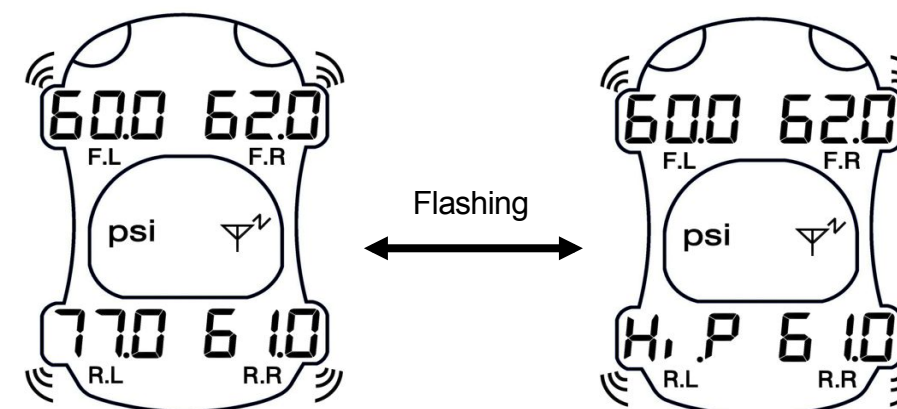
Insert the batteries with their negative pole pointing at the resort and then gently press the battery into position, until it is fully contained in the compartment.



**Note:** When inserting, please observe the correct polarity

**Tyre pressure above upper warning threshold**

If the tyre pressure rises above the set upper warning threshold (default setting: 5.2 bars), the display unit beeps ten times and switches on the backlight during three seconds. The pressure value and 'HiP' appear alternately. This is represented in the figure to follow: The pressure of the wheel rear left is too high.



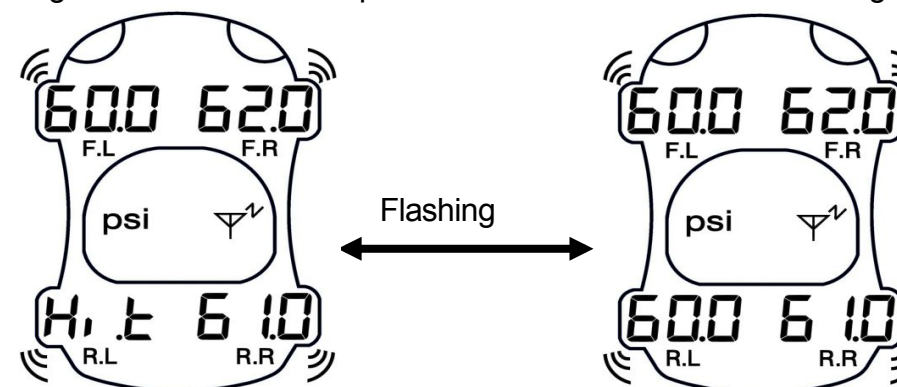
In this example Rear Left (R.L.)

If the pressure continues to rise, the display unit gives a warning every time the pressure rises by another 0.1 bars. These warnings will stop as soon as the pressure (i.e. by venting air) is again below the set warning threshold.

**Attention:** If the warning is given, you should first assess the situation to ensure safe stopping; only then, you should check the tyres as quickly as possible.

**Tyre temperature above upper temperature warning threshold**

When the temperature rises above the set upper warning threshold (default setting: 70°C), the display unit beeps ten times showing the alert 'HiT' at the wheel position concerned. This is shown in the figure to follow: The temperature of the wheel rear left is too high.



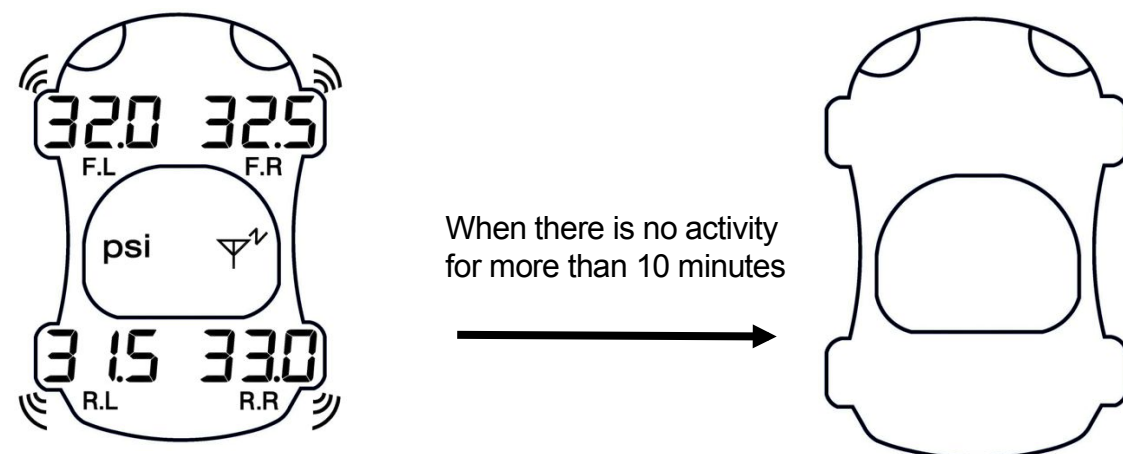
In this example Rear Left (R.L.)

If the temperature continues to rise, the display unit gives a warning every time the temperature rises by another 1°C. The warning stops as soon as the temperature falls again below the set warning threshold.

**Attention:** If the warning is given, you should first assess the situation to ensure safe stopping; only then, you should check the tyre thoroughly.

### 3 Power-save mode (sleep mode)

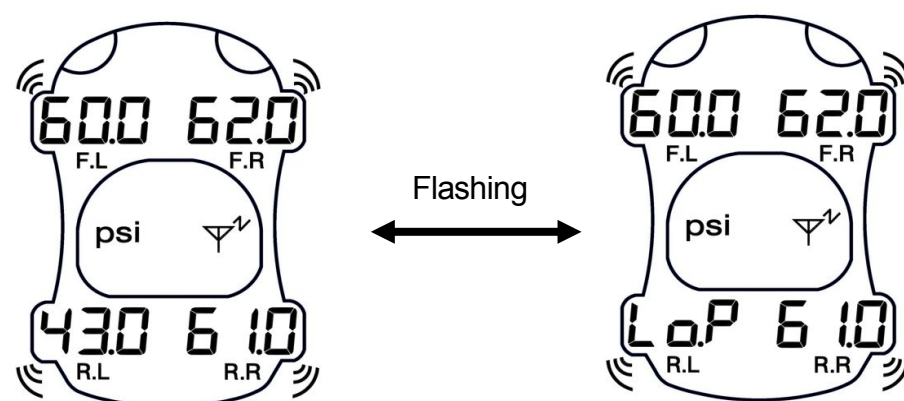
For an optimum utilisation of the battery capacity, the system (display unit and sensors) has an intelligent energy management; the display and sensors automatically pass into the sleep mode when no activity is detected for more than 10 minutes. In this mode, the display is switched off to save electricity. When any kind of movement becomes available (i.e. by opening a door or pressing a button), the display unit is immediately re-enabled. The display then looks like below, since the measuring values have not been updated yet.



### 4 Abnormal tyre pressure or temperature

#### Tyre pressure below lower warning threshold

When the tyre pressure is below the lower warning threshold (default setting: 3.1 bars), the display unit beeps ten times, and the related tyre symbol shows 'LoP' alternately with the pressure value, to indicate the low pressure value. This is represented in the figure to follow: The tyre pressure of the wheel rear left is too low.



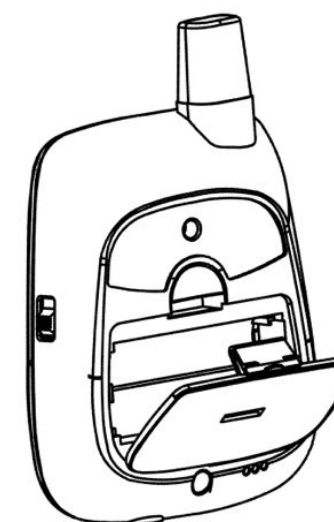
In this example Rear Left (R.L.)

If the pressure continues to fall, the display unit gives a warning every time the pressure falls by another 0.1 bars. The warnings will stop as soon as the pressure (i.e. by refilling) is again above the set warning threshold.

**Attention:** If the warning is given, you should first assess the situation to ensure safe stopping; only then, you should check the tyres as quickly as possible.

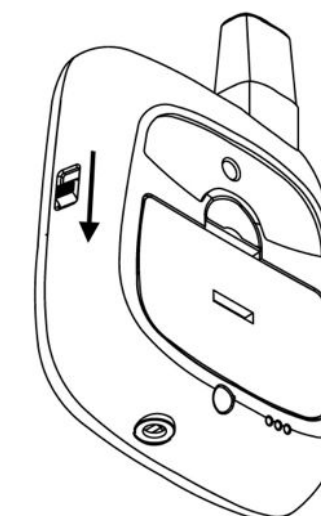
#### D. Close the compartment

Press the compartment to the device until it engages.



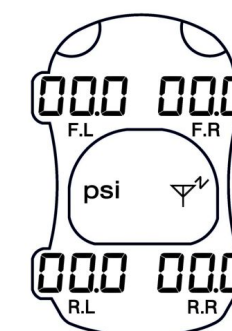
#### E. Switch on the display unit

Put the switch to the 'On' position, as shown in the figure. The display unit gets started and receives the signals from the sensors.



The display unit beeps once and shows the last received (before the sleep mode) pressure values.

The figure to follow shows the condition available after starting up:



**Note:**

1. When the batteries are becoming exhausted, the charging condition is displayed as described further down.
2. Before taking the next step, the display unit needs to be switched on.
3. Please observe the correct polarity when inserting the batteries.
4. The system was designed to allow easy handling. There is no need for switching off the display unit. It is even recommended to always keep the display unit switched on. If not used, the device automatically passes into a sleep mode for saving electricity.

**Installation of the pressure sensors**

The sensors are consecutively numbered, and each sensor has its respective position it needs to be mounted to. Depending on the number of wheels monitored, every single sensor number corresponds to another wheel position. When inserting the batteries, please make sure not to confuse the sensor caps. The relays sensor allocation table informs you at what wheel position the different sensors are to be mounted. Please find the allocation table below:



F.L. or 1 stands for Front Left  
F.R. or 2 stands for Front Right  
R.L. or 3 stands for Rear Left  
R.R. or 4 stands for Rear Right

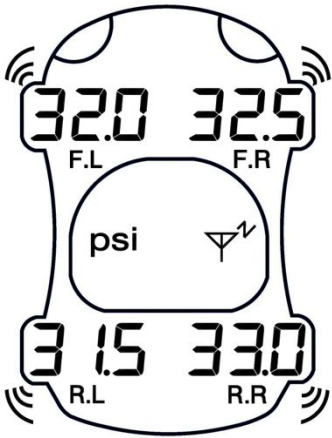
**Note:**

When inserting the batteries, please observe the correct polarity.  
Do not confuse the sensors' sensor caps.  
As soon as the batteries are becoming dead, the battery condition gets displayed.

**System operation**

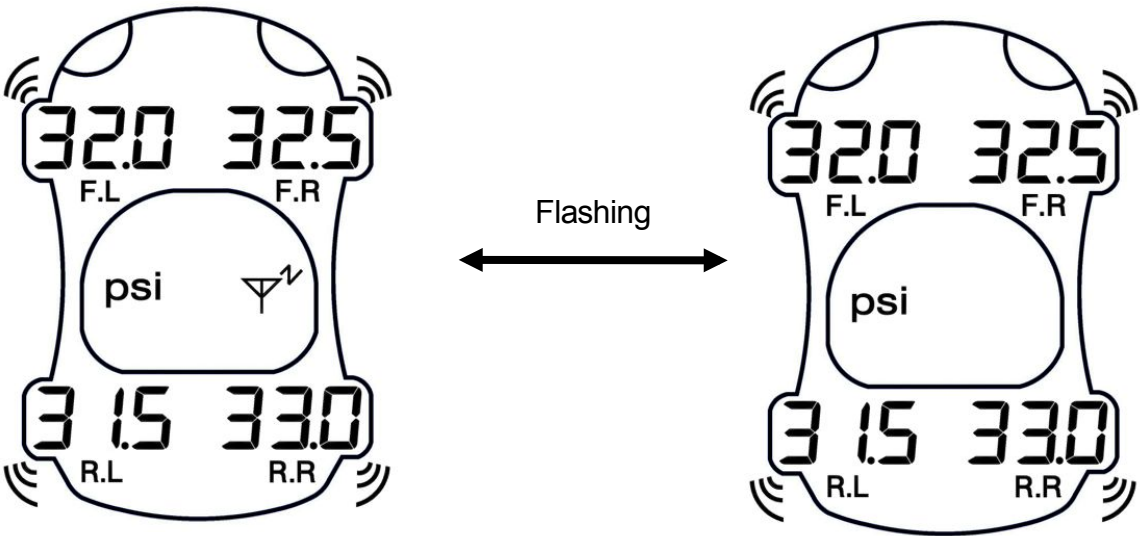
**1 Initialisation**

During the initialisation phase, the display unit first establishes the contact to the sensors and then displays information after starting up.



**2 Main screen**

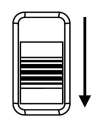
After starting up, the system displays the main screen. Most of the time, your system will stay in this display mode, and show the most recent values for tyre pressure and temperature. A beep tells the driver that the system is in operation.



Main screen



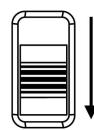
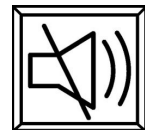
**3 Advanced settings**



- Resetting to factory settings


At times, it is necessary to reset the device to factory settings. This function allows setting all warning thresholds to default settings.

Before switching on the display, please press the 'temperature' button and switch it on while keeping the button pressed. The reset is acknowledged by the system through two beeps.

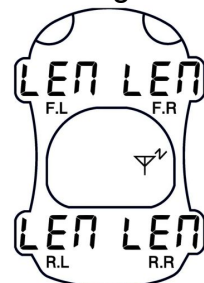


- Learning mode

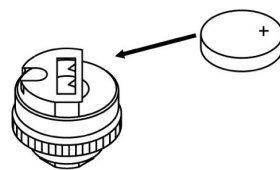
If one of the sensors in the system needs to be replaced with a replacement sensor, this function is required. Each original sensor has its own ID number, and no setting is required at this point. However, if the original sensor is lost or broken, it needs to be replaced with a replacement sensor; only replacement sensors can be taught using this procedure, this will not work with original sensors. Replacement sensors are available with your distributor or directly at [www.tiremoni.com](http://www.tiremoni.com).

Before switching on the display unit, please press the button  and then, keeping pressing the button, switch on the device

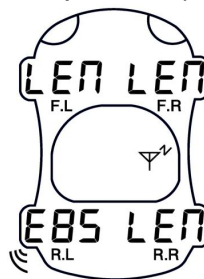
. This causes the device to pass into the "learning mode" and to display "LEN".



Please now insert the battery into the replacement sensor. At completion of the learning procedure, the display unit will again beep.



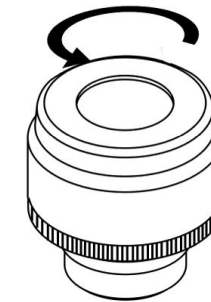
In this example R.L. (Rear Left)



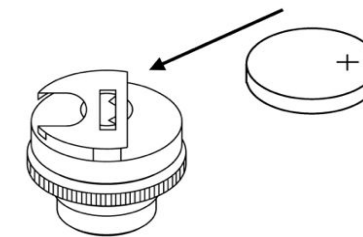
**Note:** This function requires a teachable replacement sensor; the procedure will not work with an original sensor. Should you attempt this using an original sensor, all that would happen is hearing three beeps for 30 seconds.

**Inserting batteries into the sensor**

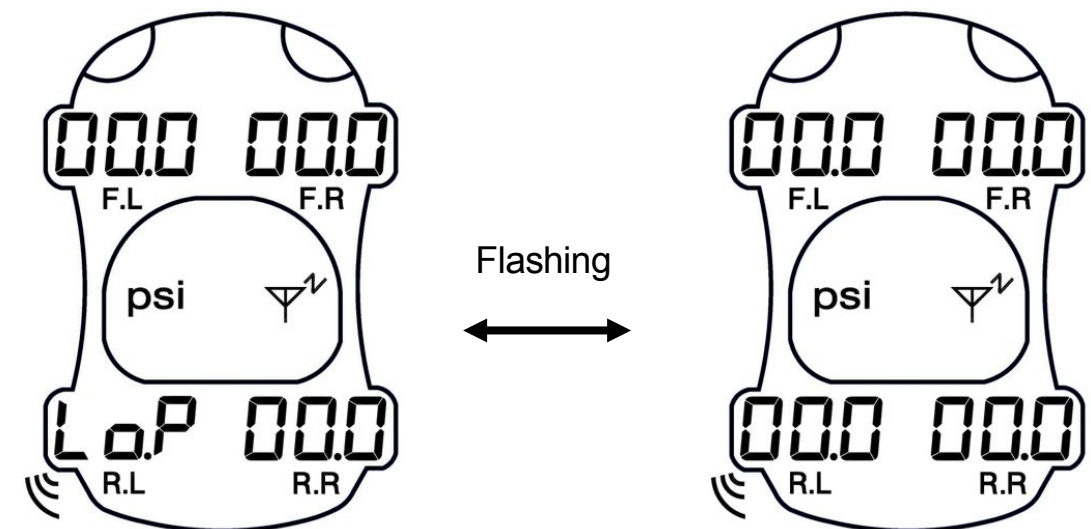
- A. Unscrew sensor caps



- B. Insert lithium battery and observe correct polarity (see figure).



The display unit now receives signals of the related sensor and then indicates the pressure value. After inserting the battery, first '0.00' becomes displayed, since the sensor has not been mounted yet. The display content is as represented below:

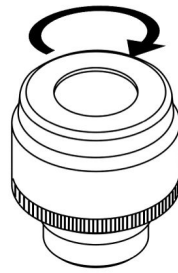


In this example, the sensor is shown R.L. (Rear Left)

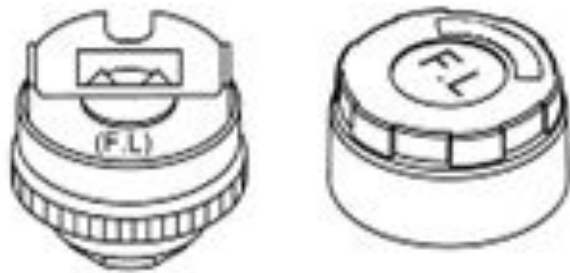
**Note:**

After removing the battery, please allow the sensor to be battery-free for at least 10 seconds before re-inserting the battery. Otherwise, the sensor may not start properly.

C. Screw the sensor cap back on



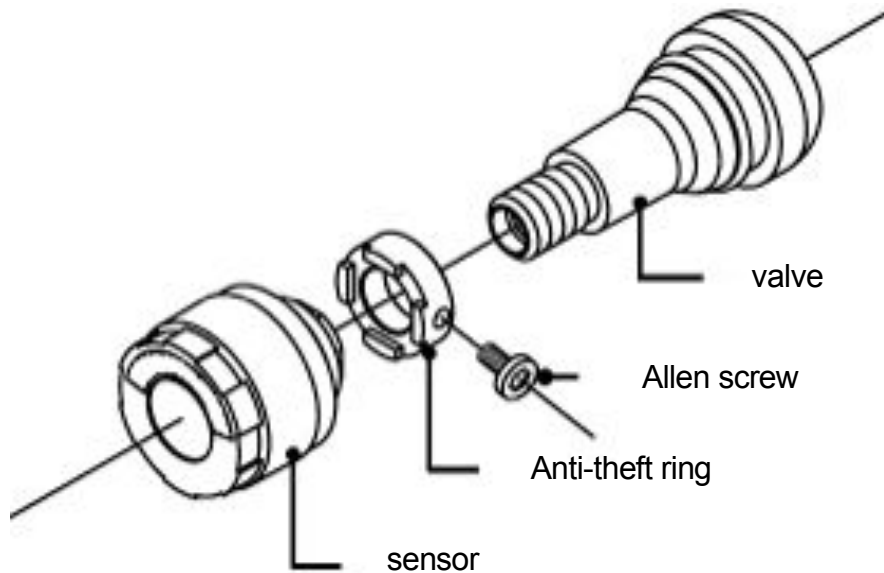
Consult the allocation table (p. 12) to check whether each sensor is mounted at its proper wheel, and please make sure not to confuse the sensor caps. Both the sensor cap and the sensor itself are labelled with the position marking.



Sensor position Front Left (F.L.)

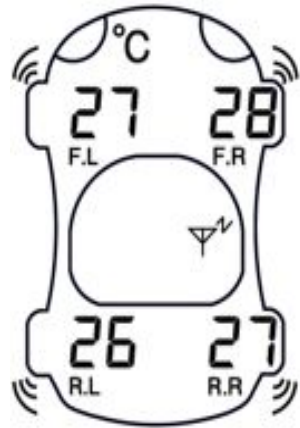
Anti-theft protection for sensor (optional)

With our anti-theft protection, the sensors cannot be screwed off. The user can decide whether to have this feature installed or not.



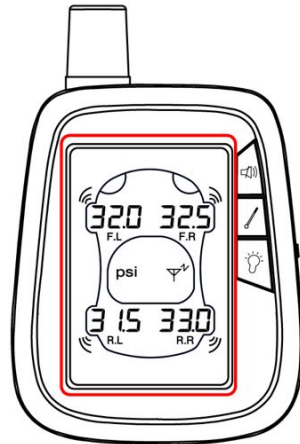
• Temperature

After pressing the 'Temperature' button, all tyre temperatures are displayed during three seconds. Afterwards, the display returns to the main screen.



• Backlight

For reading the device in the dark, the backlight can be switched on using this button. The backlight is turned off automatically after three seconds.



B. Press longer than 5 seconds:

When pressing this button longer than 5 seconds, the device passes into the mode for adjusting the measuring units and warning thresholds. This is described hereinafter:

The symbols



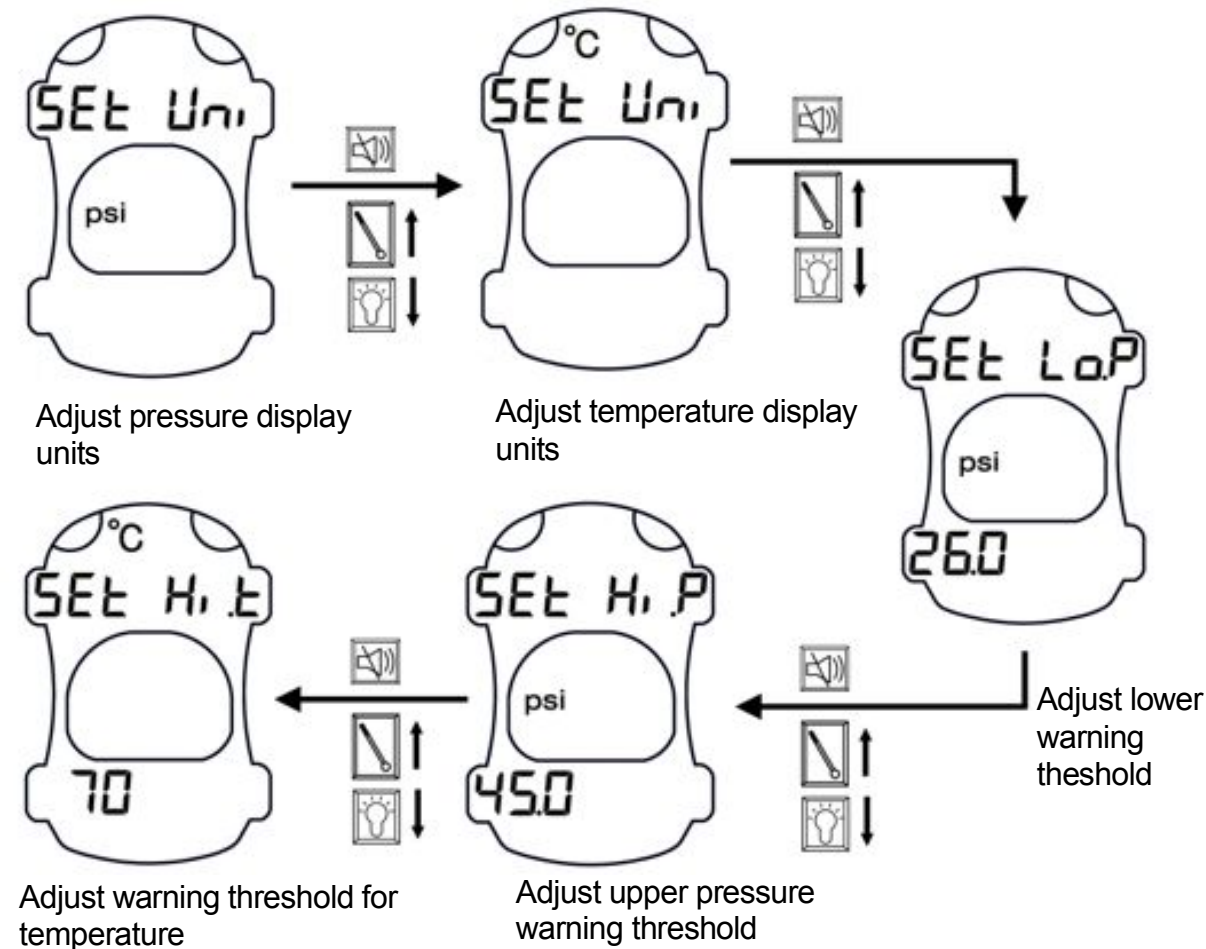
are used to select the measuring units and to increase or decrease the values for the warning thresholds.

Pressing the 'Mute' button will take you to the next adjustment point respectively.

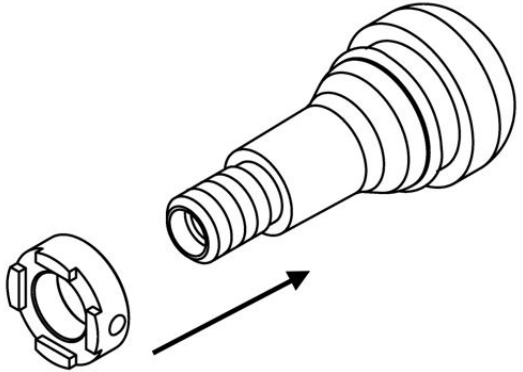
After completing all settings, the display unit passes into normal operation by emitting a short beep.

The available measuring units for the pressure are: PSI · KPA · BAR · kg/cm<sup>2</sup>.

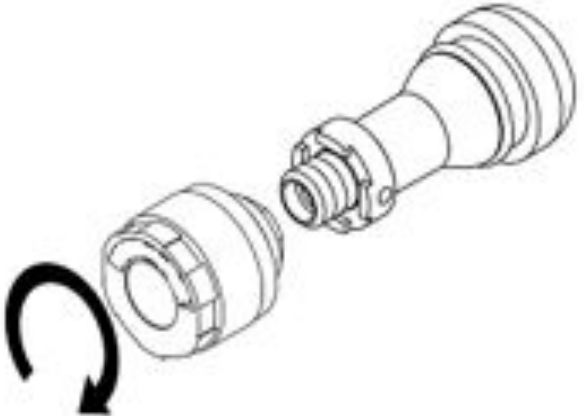
The available measuring units for the temperature are: degrees Celsius (°C) and Fahrenheit (°F).



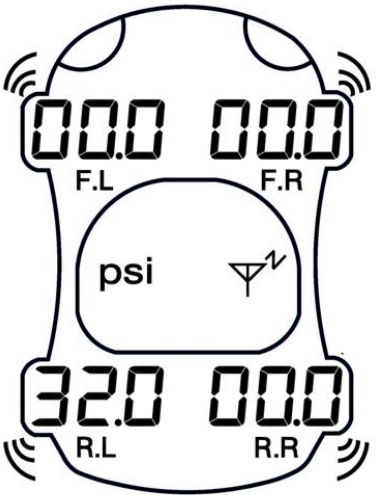
Slide the anti-theft protection onto the valve.



A. Put the sensor on the valve. Do not apply too much force when tightening.



The current pressure value is now displayed

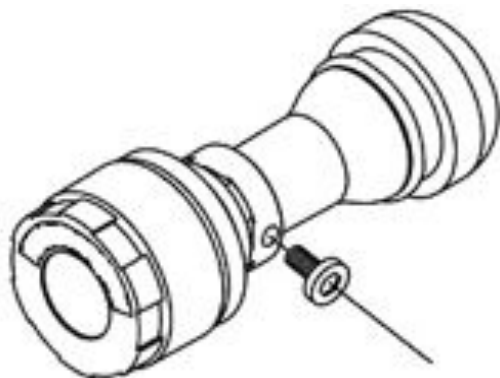


In this example Rear Left (R.L.)

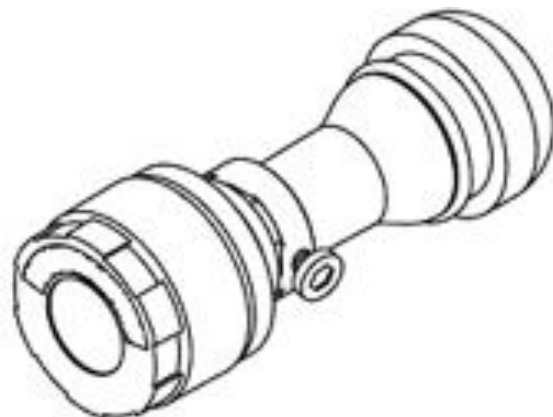
B. Please arrange the anti-theft protection in such way that the ring is engaging in the sensor bottom.



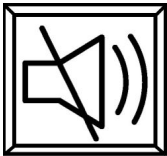
C. Screw the socket screw onto the threading to be used for attaching the anti-theft protection. The sensor is now protected against screwing off. (Do not over-tighten to avoid any valve damage.)



D. After installing all four sensors, please use some water to check for any leakage in the sensors and valves (by pouring some water across the valve and checking for air bubbling).



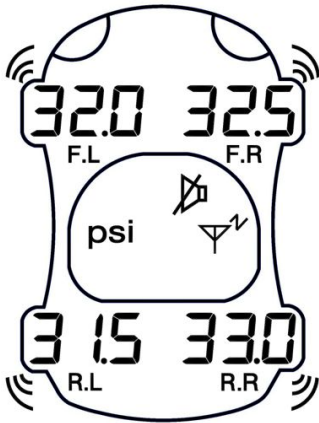
E. It is up to the user whether to have the anti-theft protection installed or not. In the negative case, the steps A, C and D can be skipped.



- Mute (press shortly once)
- Measuring units and warning thresholds (press long)

A. Press shortly:

When the tyre pressure or the temperature comes into an abnormal state, the driver hears beeps. When pressing the 'Mute' button, the acoustic warning is switched off, and only the warnings in the display are visible. When pressing the 'Mute' button once more, the beeps are re-enabled.

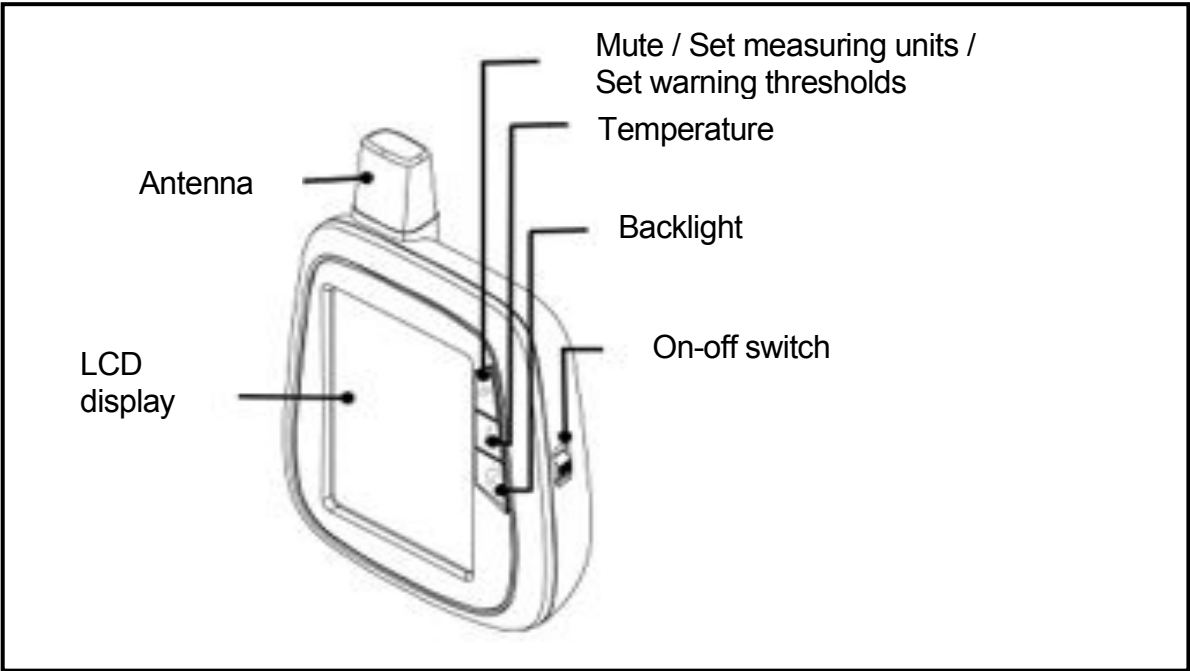




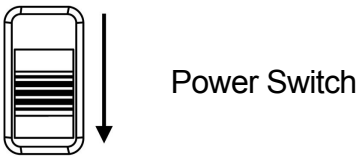
Instructions for use

1 Basic display unit functions

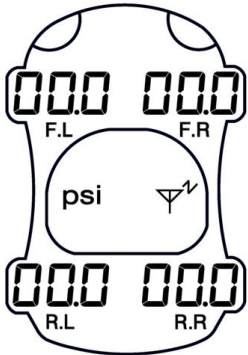
Position of operating elements



2 Screen content and basic functions



Switch on the display unit as indicated above. The device gets started and will display the last measured values before receiving data from the sensors.



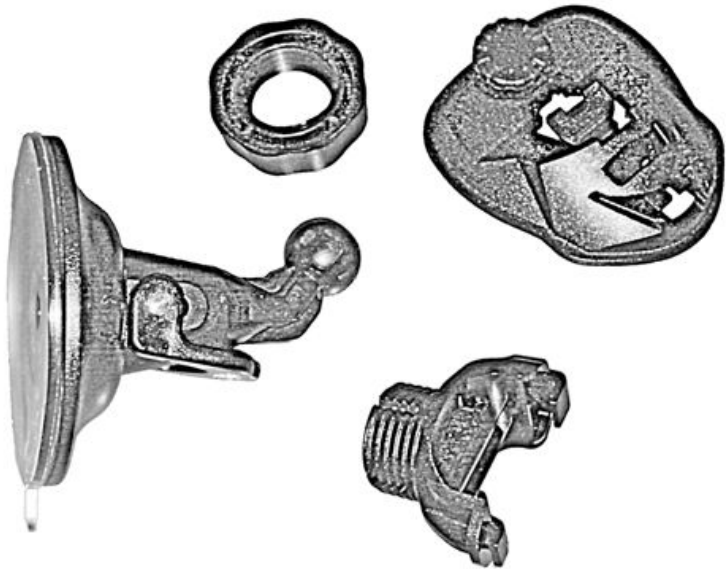
Main screen

(This is an example; the actual pressure values and configuration may differ.)

Installing the display unit at the front screen or dashboard

Installing the mounting frame

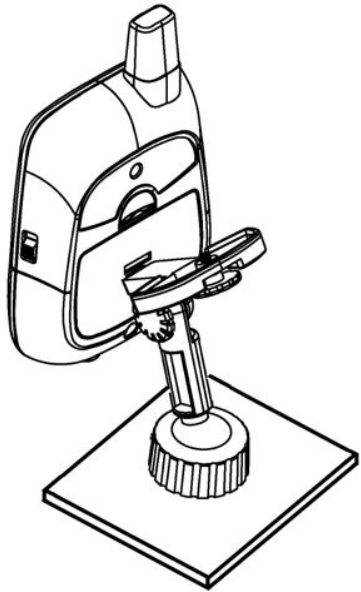
The package comes with a suction cup holder, mounting frame and angle adjustment with locknut.



A. Mounting frame w. vacuum cup

Attaching the mounting frame at the display unit

A. First hook in the mounting frame at the display unit



B. Then firmly tighten the screw



C. Place the locknut over the ball in the suction cup holder, click the angle adjustment onto the ball and lightly screw the locknut onto the angle adjustment. Do not tighten the locknut just yet.

D. Hook the angle adjustment to the back of the mounting frame, press against the backside and move upward a few millimetres until it clicks in place. Mounting frame and suction cup holder are now connected via the angle adjustment piece.

E. Attach the display unit at the front screen or dashboard using the suction cup lever.



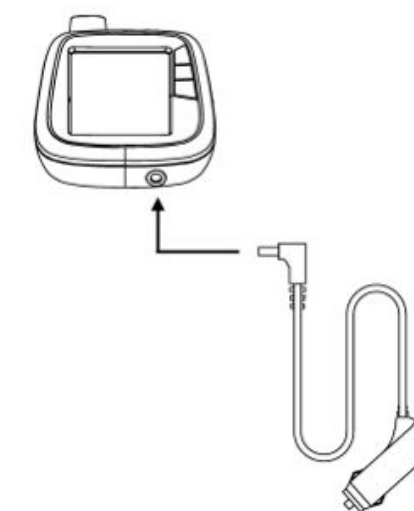
**Note:**

- Do not spill any liquids across the display unit.
- For attaching the device, a flat and clean is surface is required.
- When cleaning, please avoid touching the screen surface. Hold the display unit at its housing only.
- The display unit should be mounted in an upright position. A position pointing upwards may cause failures.

**Optional: Cigarette lighter cable**

Another operating option is using the cigarette lighter cable terminal; in this case, no batteries are required.

A. Cigarette lighter cable terminal in the display unit



B. Plug cigarette lighter cable