Part One Brief Introduction

Thank you very much for choosing Digitire TPMS. As a reliable vehicle proactive safety device, it provides real-time monitoring of all the tires, including air pressure and temperature. It will give warnings about abnormal conditions such as leakage, low pressure, high pressure and high temperature. In addition, Digitire TPMS can identify its corresponding components easily after wheel change or sensor change.

The whole package consists of the components as follows:


Sensors


Display


Cigarette Ligter Adapter


Strips

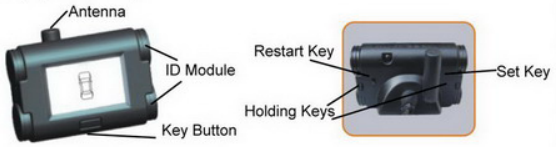

Battery Wire


Double-sided Sticky Tapes


User'd Guide

Sticker

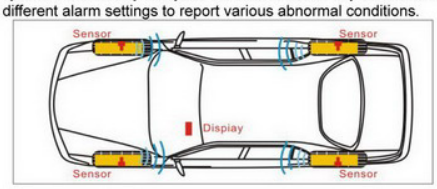
Display detailed key



Part Two How the System Works

A sensor is installed with the valve stem in each wheel, monitoring the pressure and temperature conditions inside each wheel of the vehicle, and wirelessly sends the data it collects to the receiver in the display through antenna. The receiver then transfers the data wirelessly to the display, which is installed on the dashboard and digitally displays the pressure and temperature.

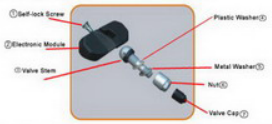
The system continuously analyzes the data to detect any abnormal conditions. It will trigger different alarm settings to report various abnormal conditions.



Part Three Installation Manual

(For professional technicians only, end user can skip this part and go directly to part 4, Key Functions and Operation Guidelines)

3.1 Identifv sensor and ID module



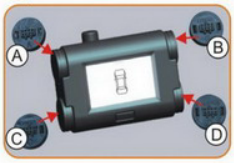
* *Only plastic or aluminum cap is fitted.*
* *Only nickel plated valves can be used.*

(1)Self-lock screw (2)Electronic module (3)Valve stem (4)Plastic washer (5)Metal washer (6)Nut (7)Valve cap

Before installation, make sure you identify each sensor (A,B,C,D) respectively. Each sensor has its own electronic module and nut. For example, you can easily distinguish the "C" electronic module because the letter "C" is at the very end of the S/N. (e.g. T5200-SM5300-050816-0158-C). Each nut also has an engraved letter that show which sensor it belongs to.


T5200-SM5300-050816-0158-C

Each sensor has a corresponding ID module. With four ID modules mounted on two sides, the display resembles a vehicle with four wheels. The ID modules should be placed in the same positions on the display as the corresponding sensors are installed on the vehicle. For instance, if the "C" sensor is installed in the left rear wheel position, then the corresponding "C" ID module has to be placed in the "left rear wheel" position on the display. The manufacturer has set as the default that A, B, C and D ID modules are placed respectively on the Left Front Wheel (LFW), Right Front Wheel (RFW), Left Rear Wheel (LRW) and Right Rear Wheel (RRW).



3.2 Installation of sensor


3.2.1 Use a self-locking screw to join electronic module and valve stem together. The assembly is adjustable to fit the various angles of the


3.2.2 Insert the valve stem through the rim hole from inside. Adjust the angle between the valve stem and the electronic module to fit the rim properly, and then screw tight the valve


3.2.3 Place plastic washer, metal washer and nut on the valve stem, and tighten with 3.5~4.5Nm (30~40 inch pound) torque.


3.2.4 Lock the rim on the tire changer. (If the mounting head of the tire changer is positioned at 12 o'clock, then the valve should be at the 7 o'clock position.)

Apply lubricant on both the tire bead and rim. Mount the lower tire bead on the rim. Ensure that the tire bead does not touch the electronic module during mounting.


3.2.5 Mount the upper tire bead the same way. (If the mounting head of the tire changer is positioned at 12 o'clock, then the valve should be at the 5 o'clock position).


3.2.6 Apply soapsuds on the valve tip. If no leakage is found, put on the valve cap. Otherwise determine the reason for leakage and reinstall this sensor.

Inflate the tire to nominal pressure.


3.2.7 Dynamic balance the wheel before it is put back on the vehicle.

3.2.8 Use the same procedure to install the other five sensors. Please install A, B, C, D, E and F sensors on the wheels labeled "1" "2" "3" "4" "5" "6" respectively.

3.3 Installation of antenna


3.3.1 Place the two antennas underneath the rubber layers of the two 'A' posts along the fringe of the dashboard.


3.3.2 Place the cable of the antenna along the front edge of the dashboard.

3.4 Installation of Power Wire Option 1
Plug lighter adapter into cigarette adapter


3.4.1 Connect the lighter adapter with main harness with fuse.


3.4.2 Plug the head of lighter adapter into the cigarette lighter slot.

3.5 Installation of Power Wire Option 2
Connect the battery wire with permanent battery


3.5.1 Connect the battery wire with main harness with fuse. Remove the cover on the side of the dashboard or below the dashboard.


3.5.1 Connect the red wire and the blue wire from the display with the positive power cable out of battery and the negative ground in the circuit board of the car respectively, the screen background will be lighted up in blue and displaying "000" at the four corners in the display. Then, the joint connecting wires should be safely wrapped with insulating tape.

3.6 Installation of display

Fix the display unit on the dashboard with double-sided tape. Do not block the driver's view. Pay attention to the viewing angle of the display.

3.7 How to remove the sensor

(When removing or replacing a sensor and taking off or changing the tire from the rim of the wheel)


3.7.1 Deflate the tire and remove the wheel weights from the rim. Push the tire bead away from the rim. Make sure to always set the bead breaker at least 90 degrees from the valve stem to void damaging the electronic module.


3.7.2 Firmly fix the wheel on the turntable clamps. (If the mounting head of the tire changer is positioned at 12 o'clock, then the valve stem should be at the 11 o'clock position.) Apply lubricant to both tire bead and rim, and then dismount the upper tire bead.


3.7.3 Use the same procedure to dismount the lower tire bead. (If the mounting head of the tire changer is at the 12 o'clock position, then the valve should be at the 12 o'clock position.)

3.7.4 Final inspection: visually inspect the rim, valve stem and electronic module to ensure no damage has occurred.

Part Four Application of TPMS-201

We recommend to use in vehicles with 4 tubeless tires. We have 5 types of TPMS for different vehicles with different cold inflation pressure. Please refer to the application chart as follows:

Part No.	Standard Cold Inflation Pressure		
	PSI	Bar	Kpa
TPMS-201A	29~35	2.0~2.4	200~249
TPMS-201B	36~42	2.5~2.9	250~299
TPMS-201C	43~51	3.0~3.5	300~350
TPMS-201D	26~73	1.8~5.0	180~500
TPMS-201E	26~174	1.8~10	180~1000

*Pressure unit (PSI/Bar/Kpa) and temperature unit (C/ F) are optional.

For TPMS-201D/E, customer could set the high and low pressure warning limit according to the tire's standard cold inflation pressure by pressing single button.

Part Five Key Functions and Operation Guidelines

5.1 Key functions

5.1.1 The sensors continuously monitor the air pressure and temperature of the tires.

5.1.2 When tire pressures and temperatures are all at normal settings, the sensor will transmit data to the receiver at intervals. Every time the display receives the latest data, it will refresh and display the tire pressures and temperatures of all four tires.

5.1.3 If the sensor detects any abnormal condition, it will immediately send the signals to the display. The display will instantly give an alarm and indicate the problem.

The little screen is displaying as follows:

5.2 Data display

To read the tire pressure and temperature of each tire, simply press the key button on the display. Press again to switch between air pressure and temperature.

When pressing the key button, the background will light up for 9 seconds before it turns off.

Temperature Mode

Pressure Mode

5.3 Warning Signals

5.3.1. Hear

When you hear the warning sound " Beep-Beep" or"Beep-Beep-Beep", pull over to a safe area to check the problem.

5.3.2. Check

When you hear the warning sound, please check the warning icons on the display. The background will light up automatically.

a. If you see an (!), that means one of the tires has a high temperature or an abnormal pressure (high or low)

b. If you see an , that means one of the tires is leaking rapidly (for TPMS-201A/B/C/D/E).

c. If no icon appears, that means one of the tires is leaking slowly (for TPMS-201A/B/C).

5.3.3. Locate

Each number on the display has a square frame. If the frame has disappeared, this tire is the problem tire.

The Abnormality warning signals are shown as below:

Low Pressure Warning：Pressure is lower than
1.6Bar(23PSI)-----TPMS-201A
1.9Bar(28PSI)-----TPMS-201B
2.3Bar(33PSI)-----TPMS-201C
20% lower than standard pressure-----TPMS-201D/E

High Pressure Warning：Pressure is higher than
3.2Bar(46PSI)----TPMS-201A
3.8Bar(55PSI)----TPMS-201B
4.3Bar(62PSI)----TPMS-201C
30% higher than standard pressure --------TPMS-201D/E

High Temperature Warning：The temperature inside the tire is higher than 80 C(176 F)------ TPMS-201A/B/C/D/E

Rapid Leakage Warning
Changes of pressure is greater than 0.20~0.50Bar in a short period.-----TPMS-201A/B/C

Slow Leakage Warning
Changes of pressure is greater than 0.30~0.60Bar within 10 days-----TPMS-201A/B/C

Leakage Warning
Changes of pressure is greater than 0.44Bar in a short period ----TPMS-201D/E

5.4 Setting the standard pressure (only for TPMS-201-D/E)

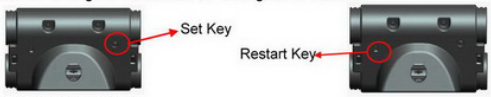
Customer could set the low and high pressure warning limit according to the tires' standard cold inflation pressure by pressing the SET key on the back of the display.

1）When using the device for the first time, please press the set button shortly to check the standard pressure set by manufacturer

2）If you want to change the standard pressure, firstly inflate your tires pressures to standard cold inflation pressure, secondly press the set button for five seconds to delete the old standard pressure, and you will hear sound "beep", then the pressure received is the new standard pressure.

3）Press the set button shortly to look up the standard pressure of each tire.

It's necessary to set standard pressure on the following conditions: 1）First use of product. 2）Change of transmitter. 3）Change of ID module.



5.5 Restart the system

The system has to be restarted to re-identify the ID module in the following situations:

1）Replace the ID module;

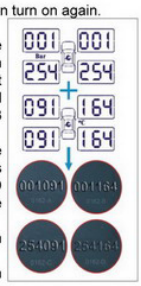
2）Interchange the position of the ID modules and sensors;

3）If the display continues to show some incomprehensible codes or "- - -" or the data does not refresh.

To restart the system, please first turn off the system and then turn on again.

5.6 ID Module checkout

If you see one or more "---" on display, ID module may not be properly plugged into the display. Press and hold the button on the display for 6 seconds and the system will begin the checkout process. Each ID module has a 6-digit ID code. The display will show the first 3 digits. Press again and it will show the last 3 digits.



If the 6-digit ID number shown on the display matches the corresponding 6-digit ID number on the ID module, the system is working properly. Otherwise it isn't. In this case, pull out the ID module and put it back properly. If the problem still exists, the sensor and its ID module need to be replaced.

Press and hold the button again for 6 seconds and the system will resume normal working condition.

Before pulling out the ID module, firmly push the holding key on the back of the display. Otherwise the ID module may be damaged.

Important:

When plugging the ID module into the display, make sure the "needle plugs" on the ID module line up with the slot form on the side of the display. Otherwise the ID module could be damaged when plugged in by force.

Holding Key

5.7 Changing wheel position

Each sensor and its corresponding ID module have the same ID code. With four ID modules mounted on two sides, the display resembles a vehicle with four wheels. The ID modules should be placed in the same positions on the display as the corresponding sensors are installed on the vehicle. Therefore when you change a wheel position, the ID module position should also be changed.

For example, if you interchanged the LFW (Left Front Wheel) and the LRW (Left Rear Wheel), you should also interchange the positions of the upper left ID module and the lower left ID module.

5.8 Replace sensor

When you replace a sensor, first install the new sensor in the wheel. Then plug the ID module came with the sensor in the corresponding position of the display. For example, if you replaced a sensor in the RRW (Right Rear Wheel), then you should plug the new ID module in the lower right position of the display.

Part Six Trouble Shooting

Problem	Probable reason	Solution
"---" shows on the display.	1. ID module is not properly connected with the display.	ID module checkout. See Part 5.6.
	2. System failure.	Press restart key to restart the system
	3. Receiver did not receive the signal from the sensor.	Contact your distributor
1. Data does not refresh; 2. Back light does not turn off; 3. The display continues to show incomprehensible codes.	System failure	Press restart key to restart the system
Nothing shown on the display.	Display power cords is not properly plugged in	Please connect correctly

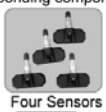
Part Seven Parameters of the Product

Sensor
Weight: 35g (1.26 oz.)
Dimensions: 6.4 x 2.8 x 1.5 cm
(2.52 x 1.10 x 0.59 inch)
Operating Temperature Range:
-40°C to 125°C (-40 to 257°F)
Pressure Accuracy: ±0.05 Bar (0.73 PSI)
Temperature Accuracy: ± 2°C (3.6°F)
Battery Life: 10 years
Maximum Range: 13Bar (203PSI)
Frequency: 315MHz OR 433.92MHz

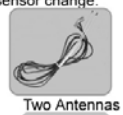
Display
Power Consumption: 130 mW (Regular);
230mW (Max)
Power Supply: DC12 Volt
Weight: 75g (2.65 oz.)
Dimensions: 7.7 x 4.9 x 2.2cm
(3.03 x 1.93 x 0.87inch)
Operating Temperature Range:
-20°C to 70°C (-4 to 185°F)
Pressure Resolution: ±0.01Bar (0.2PSI)
Temperature Resolution: 1°C(2°F)

Part One Brief Introduction

Thank you very much for choosing Digitire TPMS. As a reliable vehicle proactive safety device, it provides real-time monitoring of all the tires, including air pressure and temperature. It will give warnings about abnormal conditions such as leakage, low pressure, high pressure and high temperature. In addition, Digitire TPMS can identify its corresponding components easily after wheel change or sensor change.


Four Sensors


Integrated Display

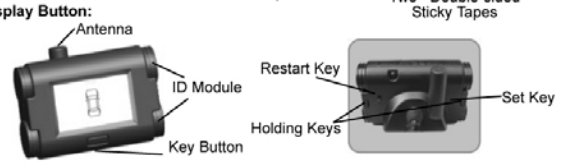

Two Antennas


User's Guide


Strips

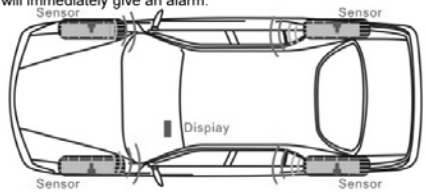

Two Double-sided Sticky Tapes

Display Button:



Part Two How the system works

A transmitter is installed with the valve stem in each wheel, continuously monitoring the pressure and temperature conditions inside each wheel of the vehicle, and wirelessly sends the data it collects to the receiver installed on the dashboard and digitally displays the pressure and temperature. When any abnormal conditions appear, it will immediately give an alarm.



Part Three Mounting & Dismounting Procedure

3.1 Mounting of display

Fix the display unit on the dashboard with double-sided tape. Do not block the driver's view. Pay attention to the viewing angle of the display.

We recommend to install display on the dashboard near the "A" post or in the middle of dashboard for better signal receiving or use dual long antennas because vehicles usually have window films which may restrict signal.

3.2 Installation of antenna

3.2.1 Use dual long antennas instead of short antenna.


3.2.2 Place the cable of the antenna along the front edge of the dashboard.


3.2.3 Place the two antennas underneath the rubber layers of the two 'A' posts along the fringe of the dashboard.

3.3 Mounting of power cord

Option 1 Connect the power cord with permanent battery

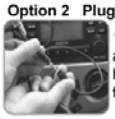
We recommend this way for display is always electrified and shows the data collecting from transmitters even in the parking mode.


1.Connect the battery wire with main harness with fuse.


2. Remove the cover on the side of the dashboard or below the dashboard.

3 Connect the red wire and the blue wire from the display with the positive power cable out of battery and the negative ground in the circuit board of the car respectively, the screen background will be lighted up in blue and displaying "000" at the four corners in the display. If the display doesn't be lighted up, make sure the connection is right or the switch on the back of display is on. The joint should be safely wrapped with friction tape. Tie up all the cables with a strap and put in the compartment. Then replace the dashboard cover.

Option 2 Plug lighter adapter into cigarette adapter

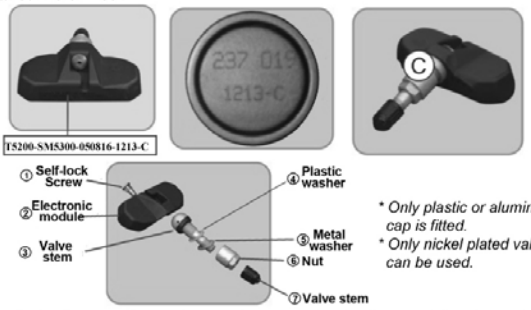

1 Connect the lighter adapter with main harness with fuse.


2 Plug the head of lighter adapter into the cigarette lighter slot.

3 Switch on the power of vehicle (don't need to ignite the vehicle), the screen backlight will be lighted up in white and display "000" at the four corners in the display. If the display doesn't be lighted up, make sure the connection is right or the switch on the back of display is on.

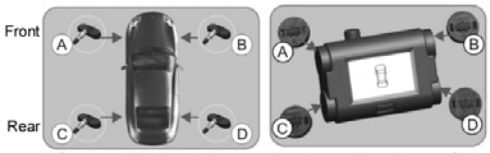
3.4 Mounting of transmitter

3.4.1 Identify transmitter: There are four pairs of transmitters and ID modules engraved with A/B/C/D respectively, each pair of transmitter and ID module can't be used separately. The nuts also engraved with letter are used to distinguish the transmitters installed in the wheel.



** Only plastic or aluminum cap is fitted.*
** Only nickel plated valves can be used.*

3.4.2 Mounting position of transmitters: pay attention to the default installation position of transmitters and ID modules as follows:



** If you need do tire rotation or replace transmitter, please refer to 4.8 & 4.9*


3.4.3 Use a self-locking screw to join electronic module and valve stem together. The assembly is adjustable to fit the various angles of the rim.


3.4.4 Insert the valve stem through the rim hole from inside. Adjust the angle between the valve stem and the electronic module to fit the rim properly, and then screw tight valve stem.


3.4.5 Place plastic washer, metal washer and nut on the valve stem, and tighten with 3.5~4.5Nm (30~40 inch pound) torque.


3.4.6 Lock rim on the tire changer. (If the mounting head of tire changer is positioned at 12 o'clock, then valve should be at the 7 o'clock position.)

Apply lubricant on both the tire bead and rim. Mount the lower tire bead on the rim. Ensure that the tire bead does not touch the electronic module during mounting.


3.4.7 Mount the upper tire bead the same way. (If the mounting head of the tire changer is positioned at 12 o'clock, then the valve should be at the 5 o'clock position.) Inflate the tire to nominal pressure.


3.4.8 Apply soapsuds on the valve tip. If no leakage is found, put on the valve cap. Otherwise determine the reason for leakage and reinstall this sensor.


3.4.9 Dynamic balance the wheel before it is put back on the vehicle.

3.4.10 Use the same procedures to install the other three sensors. Please install A, B, C, and D transmitters on the Left Front Wheel (LFW), Right Front Wheel (RFW), Left Rear Wheel (LRW) and Right Rear Wheel (RRW) respectively.

3.5 Setting baseline pressure


1. Customer could set the baseline pressure according to the tires' standard cold inflation pressure by pressing the SET KEY on the back of the display.


2. Press the set key shortly to check the baseline pressure set by manufacturer. If the baseline pressure set by manufacturer doesn't accord with your tires' standard cold inflation pressure, you need to re-set.

3. Inflate your tires' pressures to standard cold inflation pressure (such as 65 psi).


4. Press the SET KEY for five seconds to delete the old baseline pressure, and you will hear sound "beep"

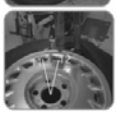

5. Run your vehicle, the new tire pressure received is new baseline pressure

6. It's necessary to set warning limit pressure on the following conditions:
(1) First use of product. (2) Change of transmitter. (3) Change of ID module.

*** After mounting each component, please refer to Part Four"Operation Guide".**

3.6 How to remove the sensor


3.6.1 Deflate the tire and remove the wheel weights from the rim. Push the tire bead away from the rim. Make sure to always set the bead breaker at least 90 degrees from the valve stem to void damaging the electronic module.


3.6.2 Firmly fix the wheel on the turntable clamps. (If the mounting head of the tire changer is positioned at 12 o'clock, then the valve stem should be at the 11 o'clock position.) Apply lubricant to both tire bead and rim, and then dismount the upper tire bead.

3.6.3 Use the same procedure to dismount the lower tire bead. (If the mounting head of the tire changer is at the 12 o'clock position, then the valve should be at the 12 o'clock position.)

3.6.4 Final inspection: visually inspect the rim, valve stem and electronic module to ensure no damage has occurred.

Part Four Operation Guide

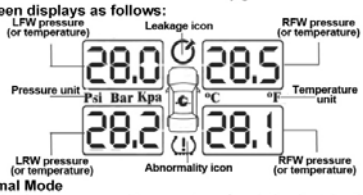
4.1 Installation verification

After mounting each component of Digitire TPMS, you need to run your vehicle at speed of 25km/h at least to check if all four tires' pressure are received well. If there is problem, please refer to "Part Five Trouble Shooting".

4.2 Working conditions

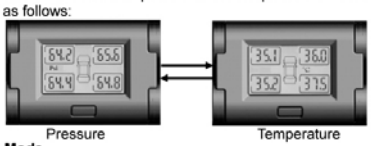
1. The transmitters monitor air pressure and temperature of four tires 24 hours.
2. In parking mode, the transmitter will transmit data to the receiver at eight-minute intervals. Every time the display receives the latest data, it will refresh and display the tire pressures and temperatures of all four tires.
3. In driving mode, the transmitter will check pressure & temperature every 4 seconds. When the tires are normal, the sensor will transmit data to the receiver at 30-second intervals. When the tires are abnormal, the sensor will immediately send the signals to the receiver which will instantly give an alarm and indicate the problem.

The screen displays as follows:



4.3 Normal Mode

To read the tire pressure and temperature of each tire, just shortly press the key button on the display to switch between air pressure and temperature. When tires are normal, display shows as follows:



4.4 Abnormal Mode

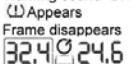
The display will show the pressure and temperature of abnormal tires automatically without any operation.

Low pressure warning	Alerts
current pressure is 20% decrease from baseline pressure	1) Warning sound "Di-Di" 2) (!) Appears 3) Frame disappears

High pressure warning	Alerts
current pressure is 30% increase from baseline pressure	1) Warning sound "Di-Di" 2) (!) Appears 3) Frame disappears

High temperature warning	Alerts
the temperature in the tire is more than 80℃(176℉)	1) Warning sound "Di-Di" 2) (!) Appears 3) Frame disappears

Leakage warning	Alerts
air leakage is more than 0.44Bar/6.4psi in 15 seconds	1) Warning sound "Di-Di" 2) (!) Appears 3) Frame disappears



4.5 ID Module checkout

Step	Operation	Photograph
1	Press and hold the key button on the display for 6 seconds. The display will show the first 3 digits of ID module.	
2	Shortly press again and it will show the last 3 digits of ID module.	
3	If the 6-digit ID number shown on the display doesn't match the corresponding 6-digit ID number on the ID module, pull out the ID module and put it back properly (refer to 4.7).	
4	Press and hold the button again for 6 seconds and the system will resume normal working mode.	

4.6 Restart the system

The system has to be restarted to re-identify the ID module in the following situations:

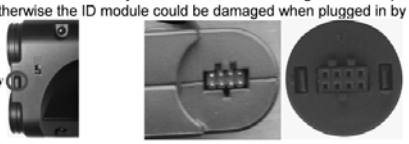
1)Tire rotation;

2)Replace transmitter or ID module;

To restart the system, please first turn off the system and then turn on again.

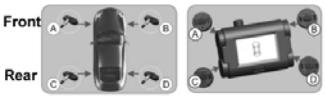
4.7 Mounting and dismounting of ID module

Caution: firmly press the holding key on the back of display when pulling out and plugging into ID module. Pay attention to the matching of needle plugs and sockets, otherwise the ID module could be damaged when plugged in by force.



4.8 Tire Rotation

4.8.1 pay attention to the default installation position of transmitters and ID modules



4.8.2 For example, rotate LFW (left front wheel)/Transmitter A and LRW (left rear wheel)/Transmitter C

4.8.3 Interchange ID module A and ID module C

4.8.4 Restart the system (see 4.6) and run your vehicle at speed of 25km/h at least.

4.9 Replace transmitter

After replacement of transmitter, plug the new ID module in the proper position on the display. Restart the system (refer to 4.6) and run your vehicle at speed of 35km/h at least. The new ID module is offered along with the new sensor.

Part Five Trouble Shooting

Problem	Probable reason	Solution
"000" shows on the display	First use of TPMS, need to verify installation	Run vehicle at speed of 25 km/h at least, see 4.1
	No signal	Make sure right installation position of transmitters and ID modules, see 3.4.1 & 3.4.2
		Change display's position, see 3.1
		Use dual long antenna, see 3.2
Nothing shown on the display	Switch of display is off	Turn on switch on the back of display
	Power cord is not properly installed	Check power cord connection, refer to 3.3
dash "- - -"shows on the display	System failure	Restart the system, see 4.6
	ID module is not properly connected with display	Pull out the ID module and re-plug in, refer to 4.7; then restart the system, see 4.6
	Receiver did not receive the signal from the sensor	Change display's position, see 3.1
		Use dual long antenna, see 3.2
	Transmitter or ID module failure	Contact your distributor
Data does not refresh	System failure	Restart the system, see 4.6
Back light does not turn off		
The display continues to show incomprehensible codes		

Part Six Parameters of the Product

Sensor
Weight: 35g (1.26 oz.)
Dimensions: 6.4 x 2.8 x 1.5 cm
(2.52 x 1.10 x 0.59 inch)
Operating Temperature Range:
-40°C to 125°C (-40 to 257°F)
Pressure Accuracy: ±0.05 Bar (0.73 PSI)
Temperature Accuracy: ± 2°C (3.6°F)
Battery Life: 7years
(Theoretically estimation: 10 years)
Maximum Range: 7 Bar (100PSI)
Standard cold inflation pressure:
1.8~5.0 bar / 26~73psi
Frequency: 315MHz OR 433.92MHz

Display
Power Consumption: 130 mW (Regular);
230mW (Max)
Power Supply: DC12 Volt
Weight: 75g (2.65 oz.)
Dimensions: 7.7 x 4.9 x 2.2cm
(3.03 x 1.93 x 0.87inch)
Operating Temperature Range:
-20°C to 70°C (-4 to 158°F)
Pressure Resolution: ±0.01Bar (0.2PSI)
Temperature Resolution: 1°C(2°F)

Part Seven Certificates

FC CE e-Mark