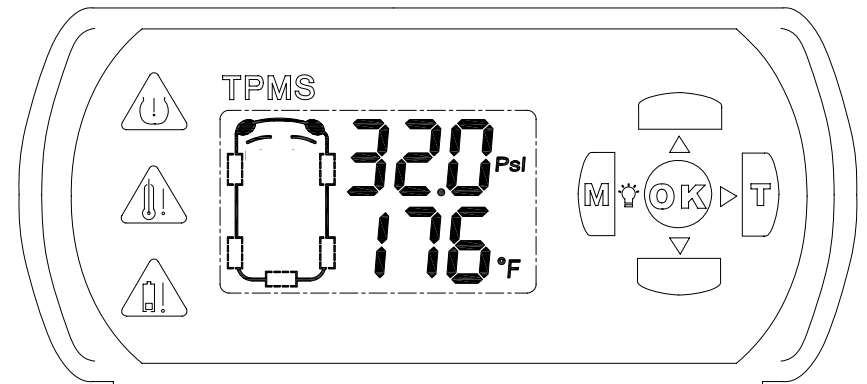




Tire Pressure Monitoring System (TPMS)

Owner's Instructions



Part No: 20257

RoHS Compliant
Directive 2002/95/EC

Specifications subject to change without notice

Rev 1.0 February 2007

1. FCC Notice

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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.

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.

Caution: Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2. Tire Pressure Monitoring System (TPMS)

This system is a sensing device designed to measure and display tire temperature and pressure, and to activate an alert to the driver when pressure and temperature irregularities are detected. It is the responsibility of the driver to react promptly and with discretion to alerts. Abnormal tire inflation pressure should be corrected at the earliest opportunity.

Do not use any temporary re-sealing or re-inflation products containing internal sealants or propellants in any tire assembly as these may adversely affect the operation of the sensor/transmitter.

3. How It Works

Pressure and temperature information is transmitted by radio frequency to the receiver and displayed on the LCD display. When an under-inflated, over-inflated or over-heated tire is detected, the display will emit an audible warning and activate a warning lamp to alert the driver. The icon for the tire with the fault will be displayed along with the pressure and temperature. Each sensor's battery is also monitored, and an alert will activate if a sensor's battery is found to be low in charge. Instant alert will sound when powered up if a fault is detected while in stand-by.

18. °C to °F Conversion Table

The display will allow the driver to view the temperature in either Fahrenheit or Celcius scales. (For more details, see step 4. Programming).

°C	°F	°C	°F	°C	°F
-40	-40	20	68	80	176
-30	-22	30	86	90	194
-20	-4	40	104	100	212
-10	14	50	122	110	230
0	32	60	140	120	248
10	50	70	158	125	257

19. Parts list

Description	Qty	Part Number
Sensor (complete)	4	20154
Receiver Display Module	1	20211
Wiring Loom	1	20212
Wheel Sensor (Snap-in)	1	20214
Torx Screw	1	20562013
Valve (TTV)	1	20522044
Hardware bag, including	1	20230
Cleaning Swab	1	20216
Top Dash Adhesive Strip	1	20217
Front Dash Adhesive Strip	1	20218
Windshield Adhesive Strip	1	20219
Windshield Wedge Adaptor	1	20220

17. Tire Pressure Reading & Translation

The driver can elect to view the information in these formats.
(See details in step 4. Programming).

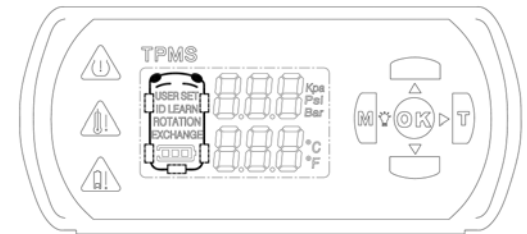
Nominal Pressure			Alarm (PSI)	
kPa	PSI	BAR	Low	High
180	26.1	1.8	19.58	39.15
200	29	2	21.75	43.50
210	30.45	2.1	22.84	45.68
220	31.9	2.2	23.93	47.85
230	33.35	2.3	25.01	50.03
240	34.8	2.4	26.10	52.20
250	36.25	2.5	27.19	54.38
260	37.7	2.6	28.28	56.55
270	39.15	2.7	29.36	58.73
280	40.6	2.8	30.45	60.90
290	42.05	2.9	31.54	63.08
300	43.5	3	32.63	65.25
320	46.4	3.2	34.80	69.60
390	56.55	3.9	42.41	84.83
460	66.7	4.6	50.03	100.05
580	84.1	5.8	63.08	126.15

4. Programming

Press and hold the "M" button for 3 or more seconds (when receiver is on) to enter programming mode. Use the ▲ or ▼ buttons to select, then use the button ► to enter the selection. The programmable options are:

- USER SET Setting Pressure/Temp (front and rear tires)
- ID LEARN Learning Sensors
- EXCHANGE Rotating Tires
- SPARE TYRE ON/OFF
- UNIT kPa/PSI/bar, °C/°F

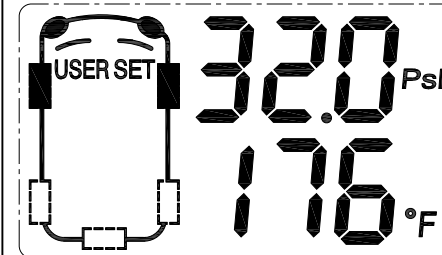
Press "OK" to accept the changes.
Press and hold "M" button to quit & exit this mode.



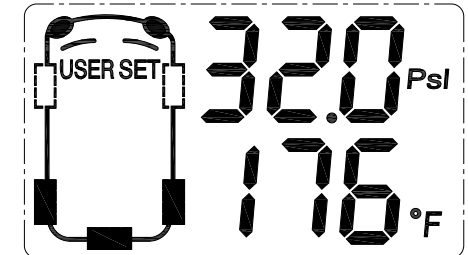
5. User Setting

This pressure should be set to the vehicle placard pressures when tires are cold. See table on page 10 for alarm trigger points for different pressures. Front and rear pressures have a different setting. Enter programming mode and select USER SET. Front tire setting is done first. Press the ► button, and the first pressure digit will flash. Change the number with the ▲ or ▼ buttons. Then next digit can be selected by pressing the ► button. Continue until all pressure and temperature digits are changed. Once the front setting has been adjusted, press "OK" button to store. Press and hold the ▼ button to adjust the rear and spare tire setting. The temperature setting is the level at which the alarm will trigger.

Front Tire Pressure Setting



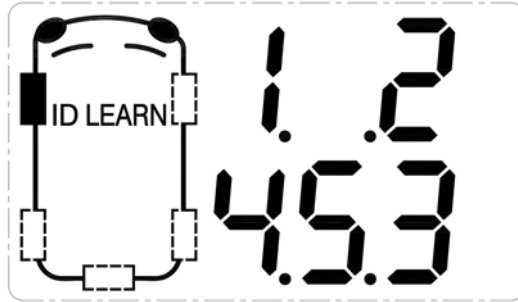
Rear & Spare Tire Pressure Setting



6. ID Learn

When new sensors or receiver is installed, the receiver needs to learn each new sensor. Enter programming mode and select ID LEARN. Press the ► button to learn the first sensor (Left Front). The front left tire icon will start to flash along with its ID digit. Deflate the tire by at least 1 PSI (8.25kPa). When the receiver learns this sensor, it will beep and the flashing LCD icons will stop flashing. Press the ► button to proceed to the next tire (LF, RF, RR, LR, SPARE). Repeat until all tires (including spare if fitted) are learned. Press "OK" to store.

Note: If a sensor is replaced or requires re-learning, ALL sensors will be erased from memory, and must be re-learned at the same time.



7. Exchange

After the tires are rotated and locations changed, the sensor ID data must be changed to reflect actual tire rotation. Enter programming mode and select EXCHANGE and press the ► button. The front left tire icon will start to flash along with ID digit. Use the ▲ and ▼ buttons to change the ID. Press the ► button to proceed to the next tire. Repeat above steps for remaining tires. Continue until all tires (including spare if fitted) are changed. Press "OK" to store.



15. Glossary

kPa	Pressure in kilo Pascals
PSI	Pressure in pounds per square inch
BAR	Pressure in BAR
°C	Temperature in degrees Celsius
°F	Temperature in degrees Fahrenheit
Cold Pressure	Recommended tire pressure at an ambient temperature of approximately 72°F (22°C) (See tire placard or vehicle's Owners Manual)
Display / Receiver	Internal electronic unit with built-in display and buzzer
Sensor / Transmitter	Wheel mounted (internally) measuring and transmitting pressure and temperature information
LCD	Liquid Crystal Display (section of display showing car)

16. Conversion Formulas

Pressure Conversion

$$1 \text{ PSI} = 6.895 \text{ kPa}$$

$$1 \text{ BAR} = 0.01 \text{ kPa}$$

$$1 \text{ kPa} = 100 \text{ BAR}$$

Temperature Conversion

$$^{\circ}\text{F} = (9/5)^{\circ}\text{C} + 32$$

$$^{\circ}\text{C} = (5/9)(^{\circ}\text{F} - 32)$$

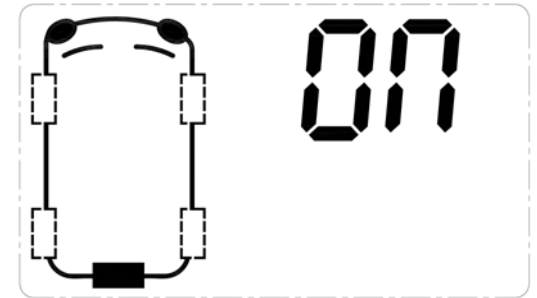
14. Troubleshooting Guide		
Symptoms	Possible Cause(s)	Solution
No display on LCD	<ul style="list-style-type: none"> No Power Faulty Unit 	<ul style="list-style-type: none"> Check connections on power cable Replace receiver
Not powering up	Ignition key is OFF	Turn to IGN position
Not learning ID	<ul style="list-style-type: none"> Localized RF noise Not enough pressure drop 	<ul style="list-style-type: none"> Move to another location and try again Release more air from tire
No instant alert	Incorrect installation	Reverse Constant and IGN on electrical wires
Tire data remains blank on LCD	<ul style="list-style-type: none"> Sensor not activated Sensor faulty 	<ul style="list-style-type: none"> Increase speed over 25mph (40km/h) Replace faulty sensor
Incorrect units displayed	Incorrect display setting	Change to suit
Spare tire sensor not displayed	<ul style="list-style-type: none"> Spare tire not enabled No sensor in spare 	<ul style="list-style-type: none"> Turn on spare in display Fit sensor to spare

8. Spare Tire

If a sensor is fitted to the spare tire, it can be monitored during normal TPMS usage.

Enter programming mode and select spare tire mode. Press the ► button to enable change to be made (spare tire icon flashes). The only selection is either ON or OFF. Use the ▲ button to select ON, and use the ▼ button to select OFF.

Press "OK" to store.



9. Pressure / Temperature Unit Setting

The displayed pressure and temperature units may be changed to suit your requirements.

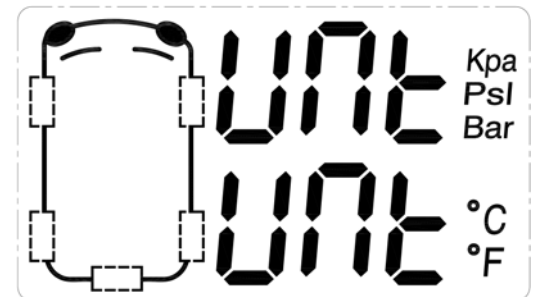
Enter programming mode and select UNIT.

Press the ► button to allow a selection to be made.

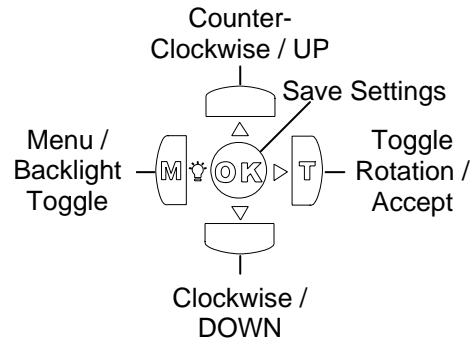
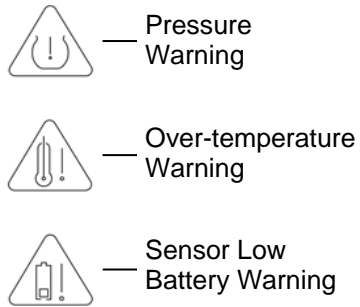
Use the ▲ and ▼ buttons to select the pressure unit (flashing). After making your selection, press the ► button to continue onto temperature selection.

Use the ▲ and ▼ buttons to select temperature units. Press the ► button to confirm your selection.

Press "OK" to store.



10. Front Panel Legend



12. Technical Specifications - Sensor

Operating Temperature Range	-40 to 212°F (-40 to 100°C)
Operating Humidity	85%
Weight	32 grams
Size (LxWxH)	2.25 x 0.91 x 0.51 in (57 x 23 x 13mm)
Battery Life (Projected)	5 years normal use
Transmitter Frequency	433.920MHz (+/- 100kHz)
Transmitter Activation	Pressure Change or Speed over 25 mph (40km/h)

11. Normal User Features

▲	Rotate displayed tire counter-clockwise
▼	Rotate displayed tire clockwise
"T"	Toggle automatic rotation on display
"M"	Momentary=Backlight toggle, Press & hold=Programming Menu
"OK"	Temporarily silence alarm condition (sound only)

13. Technical Specifications - Receiver

Power Supply	9 to 15 V DC
Current Consumption	1mA (nominal), 60mA (alert)
Operating Temperature Range	-40 to 185°F (-40 to 85°C)
Weight	63 grams
Size (LxWxH)	1.10 x 3.66 x 1.69 in (28 x 93 x 43mm)
Monitored Temperature range	-40 to 257°F (-40 to 125°C)
Monitored Pressure range	0 to 101.5 PSI (0 to 700kPa)