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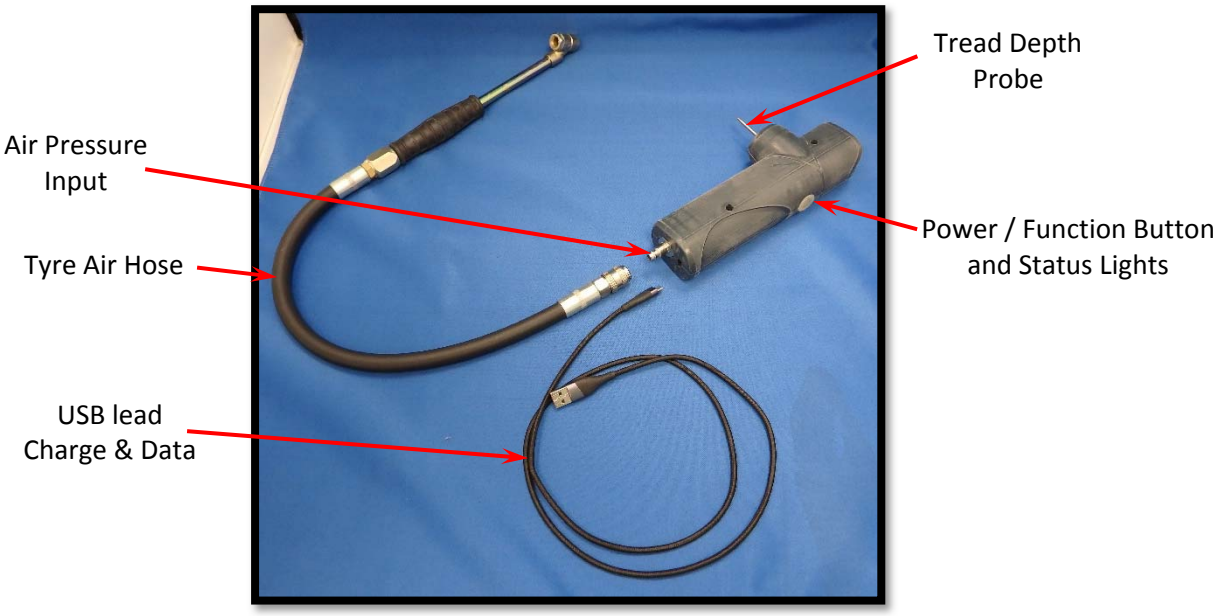
TL-GX Tyre Probe User Manual

Contents



SPECIFICATIONS

GENERAL

Model Options:

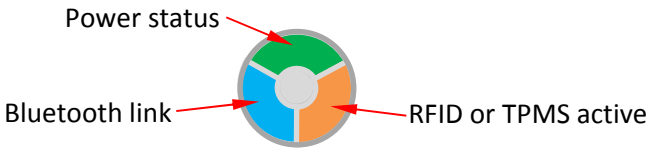
TL-GX1- = Tread depth only.

TL-GX2- = Tread + Pressure.

TL-GX3- = Tread + Pressure + RFID.

TL-GX4- = Tread + Pressure + RFID + TPMS.

LED Status Indicators in the Probe button



Weight: ..... 250g (without hose)
Battery run time: ..... 24 hours typical
Battery: ..... Built in Li-ion 3.6V 2600mAh
Storage Temperature: ..... -30°C to 60°C
Operating Temperature: ..... 0°C to 45°C

Alerts: ..... Audible tone and Vibrate.
Max. temperature = 60°C. Charge via USB C socket (0.5A).

Communication: ..... Bluetooth v5.0 Classic (BR/EDR) & Low Energy. IOS, Android and Windows compatible.
Or cable USB **type C** connector (USB 2 / 3 / 3.1).
Bluetooth range: ..... 20m in free air.

RFID

Frequency Range: ..... 859 – 930MHz
Read Range: ..... Up to 50cm

TPMS

Frequency: ..... 433 MHz (315 MHz optional)
LF Initiator: ..... 125 KHz
Read Range: ..... Up to 60cm dependant on protocol

TYRE TREAD DEPTH PROBE

Measurement Range: ..... 0 – 30mm
Accuracy: ..... +/- 0.1mm
Measurement Modes: ..... Data, mm, inches

TYRE PRESSURE PORT

Measurement Range: ..... 0 – 150 psi / 0 – 10 bar
Accuracy: ..... +/- 0.25%

Start up

Press the button once. The probe will vibrate twice and the button will flash red then illuminate blue and orange while it is starting up.
The button will then turn green if the battery has plenty of charge or red if the charge is low (See **Battery Charging** section).

Shut down

Press and hold the button for about 2 seconds until the probe vibrates once and the LED in the switch goes off.

Tread depth reading.

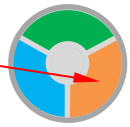
To take a tread depth reading, push the metal needle into the recess to be measured until the face of the Probe makes contact.
As soon as the probe tip has been still for a moment, the depth value will be transmitted via the Bluetooth data link.

Pressure readings from the Probe.

To measure tyre pressure using the Probe's internal sensor, push the tyre hose attachment onto the valve. As soon as the pressure has stabilised, the pressure value will be transmitted via the Bluetooth data link.

Pressure and Temperature readings from a TPMS sensor (TL-GX 4 only)

Initiate a TPMS sensor read using whichever method is used on your system set up.
This may be by tapping a button on the screen of a PDA or tablet or by a single or double press of the Probe button.
Hold the Probe close to the tyre and wait for the sensor to respond.
While the TPMS search is active, an orange LED in the probe button is lit.

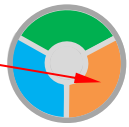


You may have to move the probe around the tyre to pick up the sensor. If no sensor is found within 10 seconds, the search will time out.

When the sensor has been read, the readings will be transmitted to your system via the Bluetooth data link.
If the Probe options are set, the Probe can give an audible tone and / or vibration when the tag has been sucessfully read.

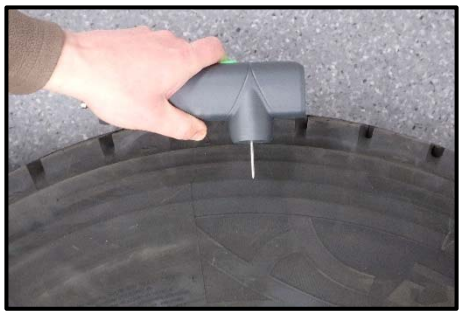
RFID Tag Reading / Writing.

Initiate an RFID tag read or write using whichever method is used on your system set up.
This may be by tapping a button on the screen of a PDA or tablet or by a single or double press of the Probe button.
Hold the Probe close to the tyre and wait for the tag to respond.
While the RFID tag search is active, an orange indicator LED in the button is lit.



You may have to move the probe around the tyre to pick up the tag.
If no tag is found within the chosen timeout period (default = 10 seconds), the search will stop.

When the tag has been read, the readings will be transmitted to your system via the Bluetooth data link.
If the Probe options are set, the Probe can give an audible tone and / or vibration when the tag has been sucessfully read.



Best orientation for picking up RFID tags in a tyre sidewall.

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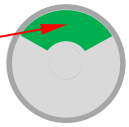
Battery Charging

To check battery charge, turn the probe on and check the LED colour, after power up (Orange and Blue LEDs on).
It will be Green for battery OK or Flashing Red for battery low.
Faster Flashing Red indicates critically low battery level. In this state, some high current probe functions will be disabled and it should be put on charge as soon as possible. The probe will soon shut itself down automatically.

Power status indicator LED in the button



To charge the battery, Connect the probe to a standard USB port or charger with the USB lead supplied.

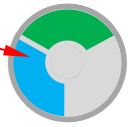
Power status indicator LED meanings:

ON BATTERY POWER	
▬▬▬	Battery GOOD
▬ ▬ ▬	Battery LOW
▪ ▪ ▪ ▪ ▪ ▪	Battery VERY LOW. Some functions disabled. Shutdown imminent.

ON USB POWER	
▬▬▬	Battery charging
▬ ▬ ▬	Battery fully charged
No LEDs on	Probe has been at full charge for longer than the idle timeout period.

Bluetooth Connection

The Tyre Probe communicates to your Bluetooth enabled device using a standard Bluetooth v5.0 wireless connection. The Probe utilizes the standard virtual serial port protocol to send and receive standard ASCII format serial data, which enables it to operate in a very similar manner to many other serial devices such as modems etc. Different devices have different software for managing Bluetooth connections, however using a standard Bluetooth protocol means that every type of device must function in a similar way to connect to the probe. The basic steps for connecting to the probe are as follows:

Bluetooth connection LED indicator 

- **Search & detect the Bluetooth connection of the probe** - Most Bluetooth applications have a method of searching for the available Bluetooth devices. The Tyre Probe usually shows up during the search with the name "TL-GX4- xxxxxx". Where xxxxxx is the serial number of the probe.

- **Pair with the probe** - Most Bluetooth applications will let you pair with the probe. Pairing is simply a way of indicating to the device which bluetoth enabled device you want to connect to. Also during the pairing process, the Bluetooth security measures must be passed through and the software may ask for a passkey. Bluetooth uses a simple 4 digit passkey to authenticate the connection. The default passkey for all probes is "1234".

- **Discover the available service** - The probe uses the standard serial port protocol which sometimes must be selected from the service list. This service is called "SPP" and must be selected before the device can assign the probe its COM port number. When the serial port service has been selected a COM port number will be assigned to the probe. Otherwise a COM port number will have been automatically assigned. The COM port number is needed to start communication with the probe.

- **Connect to the serial port and communicate** - Standard serial communications routines can be used to connect to the assigned COM port. Communication is performed using standard ASCII text format. The software application on your Pocket PC should automatically handle any communications with the probe giving the operator a user friendly interface to enable them to use the probe with ease. However other COM's applications like Hyperterminal can also be used to communicate with the probe.

  The list of commands can be found in Document G 13632 TL GX Probe command protocol.

COM Port	**Assigned by Bluetooth Manager Application**
Bluetooth Passkey	**1234**

USB Connection

The USB C connector on the probe is for:
Charging the built-in battery from any USB charger or port capable of delivering 0.5A.
Data communications instead of using the Bluetooth link. Compatible with USB 2 , 3 and 3.1.

Serial port Connection Settings:

Baud Rate	**115200 bps**
Data bits	**8**
Parity	**None**
Stop Bits	**1**
Start Bits	**1**

Calibration

The probe is calibrated at the factory.
Recalibration of the depth measurement is possible but to recalibrate, a calibration block with flat side for 0mm and a 16.0mm deep hole is required.
Special commands need to be sent to the probe to store these calibration points.
The software application on your Pocket PC may be able to guide you through a calibration procedure but this is not covered in this basic guide.