



Tyre Health System (THS)

Installation Manual

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1. Tyre Health System (THS) Instruction

1.1. Prerequisites & Preparations

Balancing sand must be removed (with a vacuum cleaner)

We recommend you use Google Chrome as a web reader for THS App. This to ensure that figures and features are presenting correct. On iPhone you will have to use Safari to be able to Add web-app to home screen.

After complete installation make sure the gateway is on power for a minimum of 45 min to ensure communication to the cloud.

1.1.1. Preparations:

- Secure availability of required number of sensors for the vehicle-s
- Secure availability of gateway
- Secure availability of THS Subscription code. Purchased of either El-Watch or Volvo-dealer
- Secure installation material (brackets, cable ties, terminals etc.)
- Ensure availability of electric technician
- Ensure availability of tire technicians
- Registration is done by the Tap & Tell function (See Fleet Owner App manual) S/N may also be registered with a smart phone or by using QR Barcode reader. It can also be entered manually, but this is not recommended.

1.2. General information

THS system will not limit the number of tyres or vehicle combinations and are developed with the entire combinations in mind.

Length from the first axle to the last axle is the only factor and can easily be solved with additional gateway.



Examples: Red box is the gateway

With the new THS we can provide a solution which includes a gateway and the sensors inside tyres. The sensor will be able to measure tyre pressure and the actual tyre temperature which also is an important parameter for the tyre management. The sensors are easily moved into new tyres in case of tyre change.

1.2.1. ADR Compliance

The THS sensor is ATEX approved for use on ADR Vehicles.

1.2.2. THS General, system description

With the web App, <https://neuronths.com/>, it is possible to monitor the status of the Tyre Health System, vehicles connected and pressure/ temperature for each individual tyre. In the App the alarm notifications can be set along with other parameters.

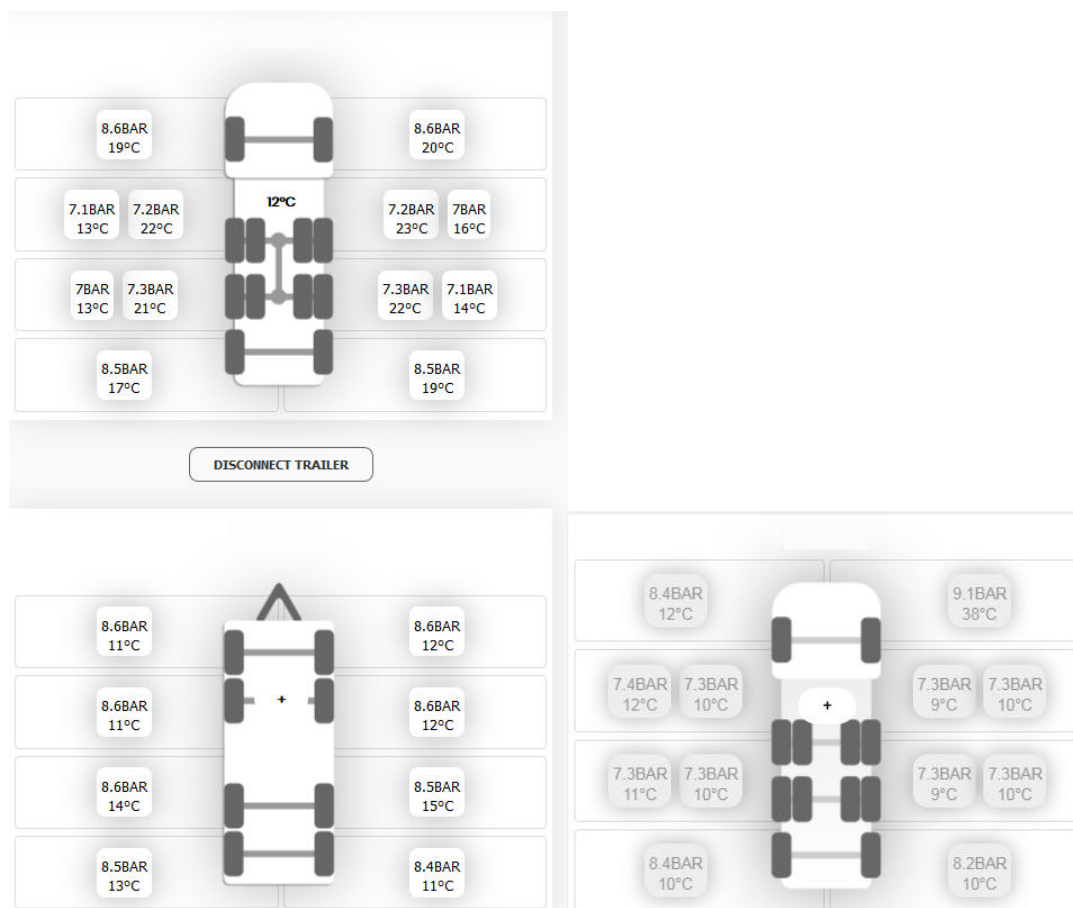
The App works on all platforms, Android, iPhone, Computer or Tablet.

The App comes in three different versions: Dealer, Fleet Owner and Driver. To access the Dealer app, you will need to get your log on credentials from technical.team@volvo.com as described in Chapter 1.1. The Fleet Owner credentials are made in the Dealer app. Drivers are able to create their own users via the link. www.neuronths.com

Scan QR code to access the web App



Snap shot of vehicle on road.



If the squares are white the tyre pressure/temperature value have been sent to the THS cloud, if grey there hasn't been any connection between the sensor and gateway in the last 30 minutes or if all are grey the gateway has not been able to send within the last 30 minutes or ignition has been off.

1.3. THS Support information

Contact El-Watch for support

email: support@el-watch.com

phone: +47 71 66 69 08 – press 2 for support

1.4. Gateway THS, installation

NOTE: Make sure to document the THS gateway ID for registration!

It might not be visible once installed on vehicle. With each gateway there's a sticker which shall be placed in the driver door pillar.



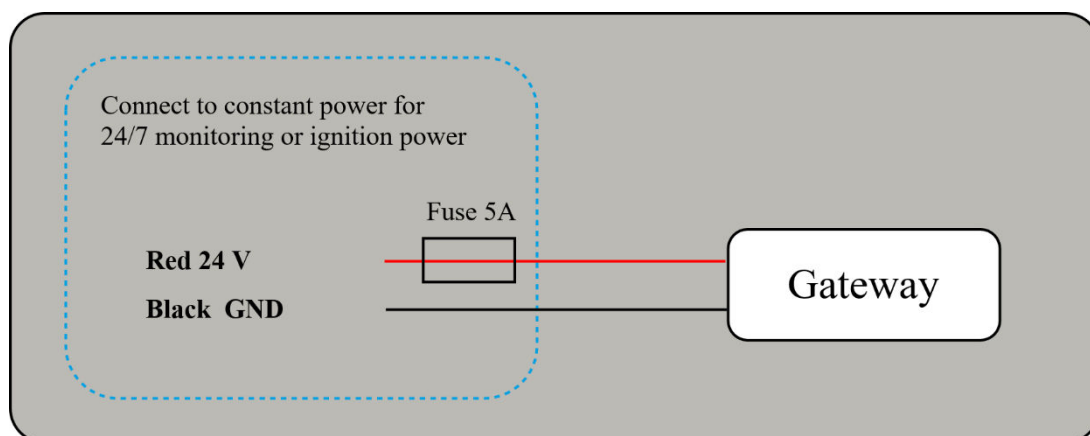
Gateway with sticker for door pillar visible.

The electrical connections for the gateway are limited to 2 wires. Power and Ground. The gateway will be mounted in rear cross member as far towards the back of the vehicle as possible (not the towing member) and wires must be installed to a suitable power connection nearby and fused with a **5 amp fuse**. The power consumption is very low for the gateway and may be connected to constant power to accommodate 24/ monitoring of the tyre pressure. If constant power we recommend to place the fuse accessible for restarting of gateway from time to time. The gateway must be installed and powered prior to sensor installation to communicate with the sensors. If the vehicle will/have a towing device the gateway shall be installed in rear cross member to cover all sensors.

Exception: If a vehicle combination is considered to be too long a 2nd gateway will be needed. Then the gateways should be installed in the middle of the truck and trailer. A super link combination is considered to be the limit for a one gateway. Circumstances like different body connections could affect the maximum distance between sensor and gateway.



14 meter cable

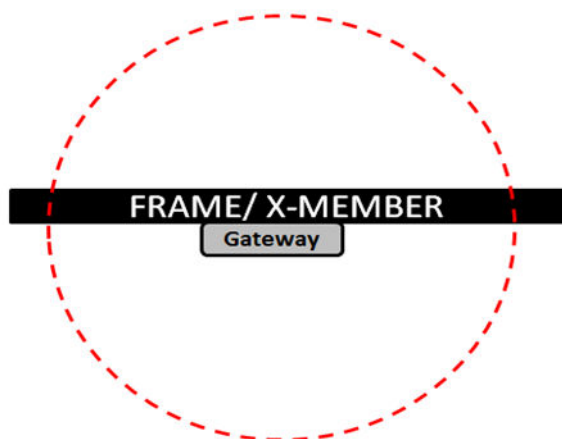


Note that older THS pigtails came with white (+)/black (GND) wires

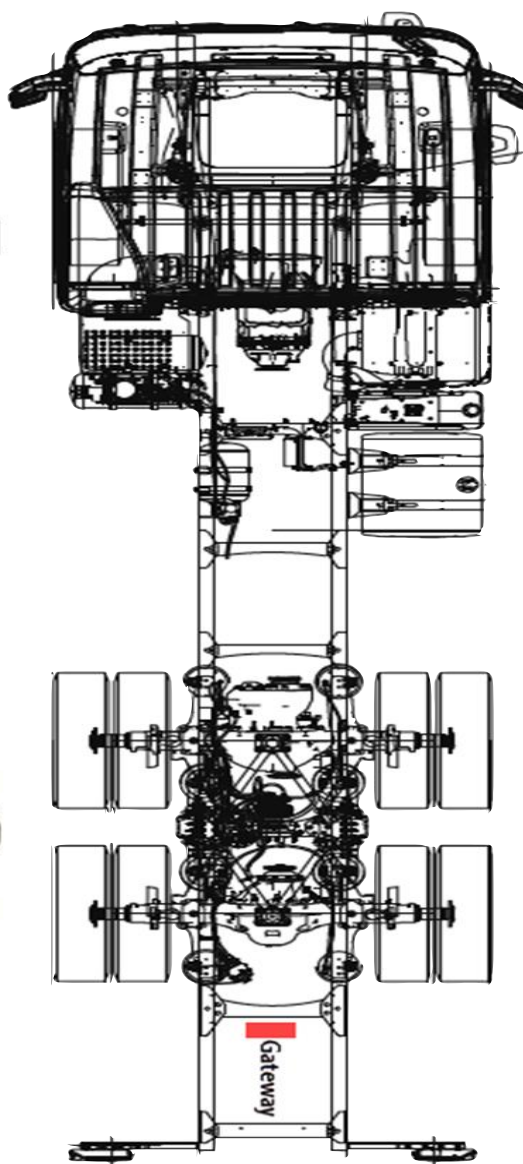
1.4.1. The gateway positioning instructions

Mount the gateway with the “backside” towards the front of the vehicle

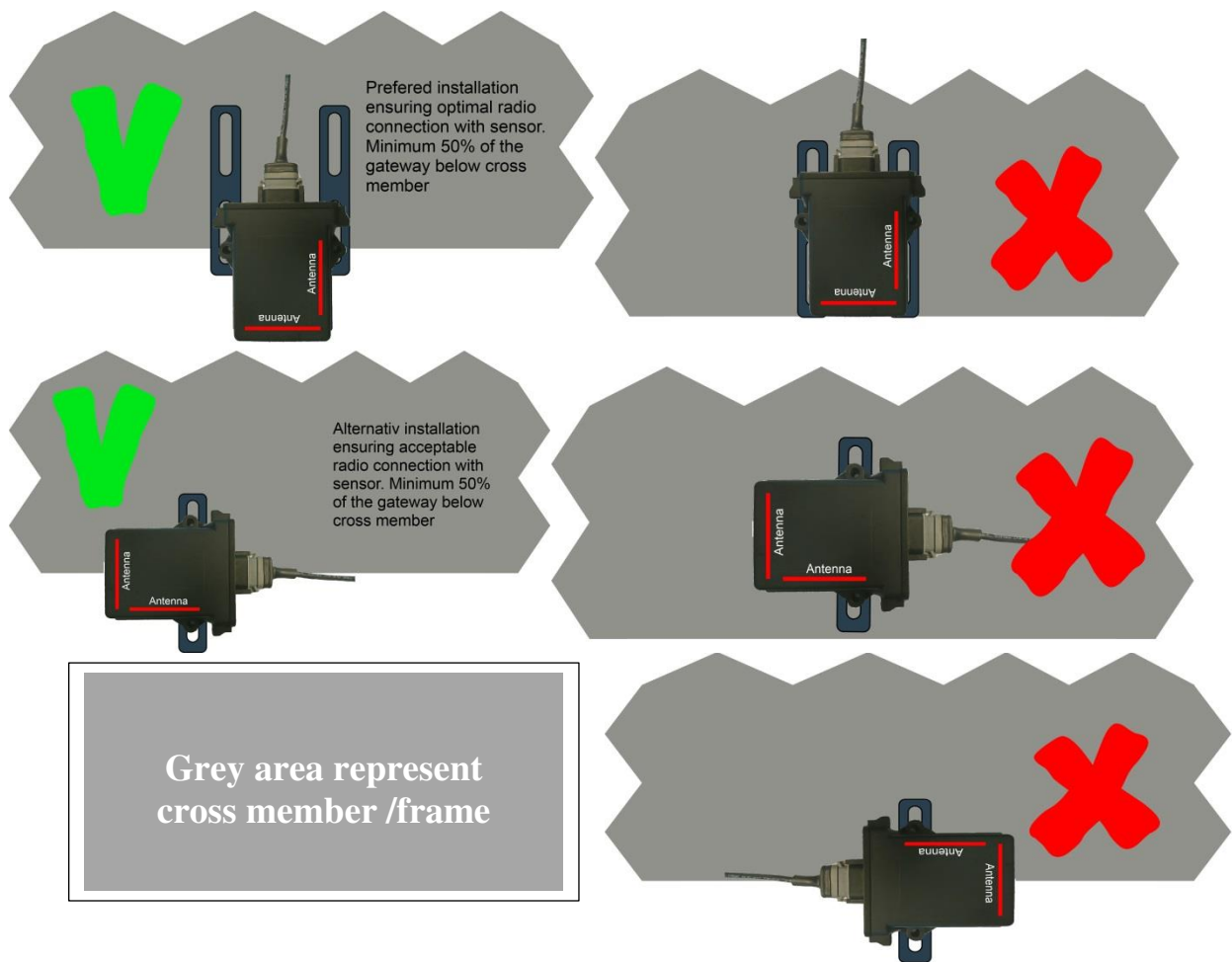
Seen from above!



The clearance around the gateway will affect the gateway reception.
Try to find a position far back on the chassis but also consider the clearance for the gateway.
It is not recommended to install gateway on the towing member.



The side visible in the picture shall be towards the rear of the vehicle. This will optimize the reception for towing devices.

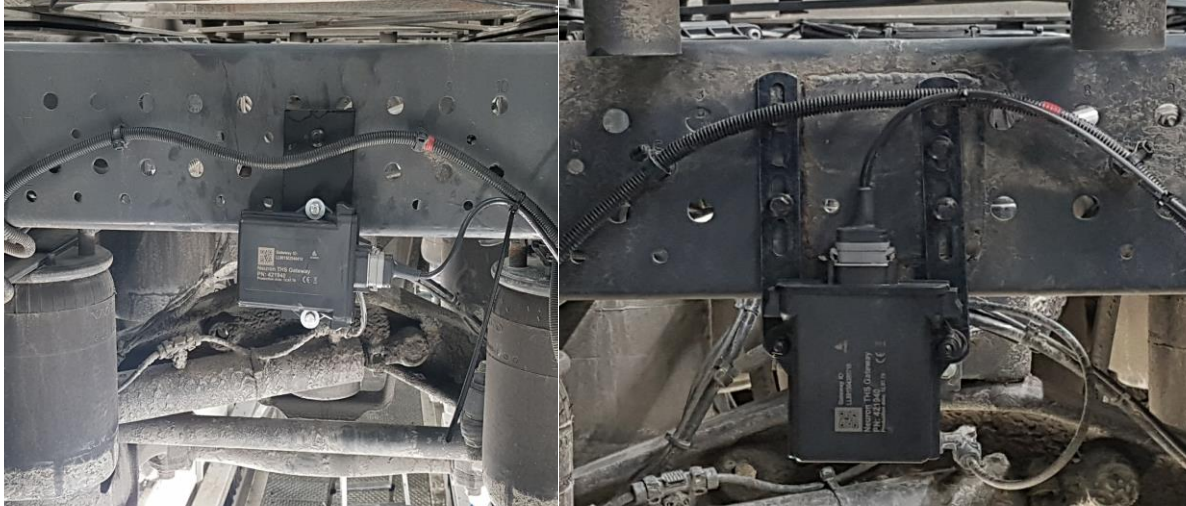


The gateway shall be installed in the centre of the chassis and in the rear of the chassis to cover towing device. (Depending on the truck combination)

The gateway has antennas, and this require installation position being optimized. Red lines display the gateway antennas inside the gateway. There is no marking on the outside of the gateway. Ensure the gateway antenna is located below the cross member for optimized wireless communication. (Picture above)

1.4.1.1. Gateway Installation example

The gateway shall be positioned with the “backside” towards the front of the vehicle

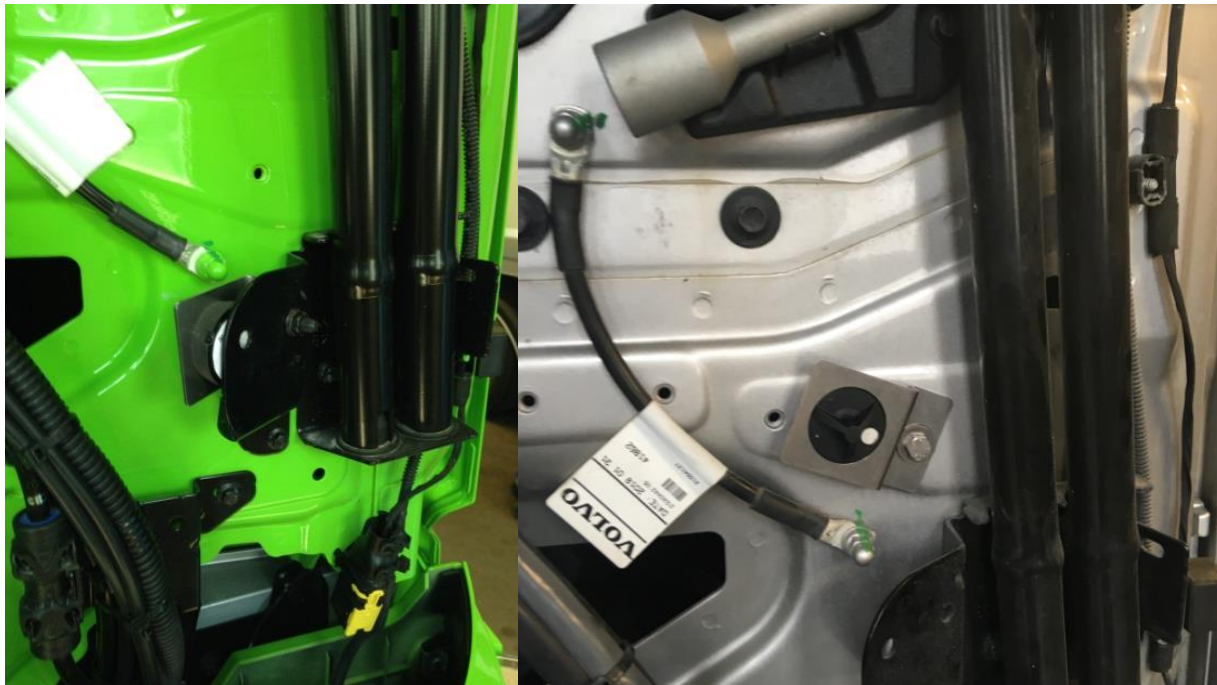


1.4.2. Ambient temperature sensor, mounting

The ambient temperature sensor should be mounted away from any heat source on the vehicle. To be mounted behind the front hood and using an tyre sensor and the bracket included.



1.4.2.1. Ambient sensor example pictures



There are usually holes available in cab for installation the Ambient sensor. Attach the bracket and the sensor with a bolt and lock nut in the inner free hole, as shown in the picture above.

NOTE: Bolt and locknut isn't included

1.5. Tyre Sensor installation THS

A THS sensor is placed inside each tyre of the vehicle. Let the air out and push one side to access the inside and just drop it inside. The sensor has a magnet that will fixate the sensor to the cord.

We strongly recommend using the Tap&Tell registration method, read the Fleet Owner manual to read about how this is done.

NOTE: Balancing sand must be removed

The red diode in this pic should flash every 10-12 second.



NOTE: It's recommended to check so it flashes when the sensor is moved between tyre and also check that the white membrane is unharmed (If a flat tyre ,change of tyre e.g.)

NOTE: If the red diode is lit and not flashing the sensor is malfunctioning.
Do no insert it. Replace the faulty sensor and if it's a new one claim it.

1.5.1.1. Sensor example pictures



Placed in the tyre, cut through picture



1.5.2. Installing THS Rubber Socket (optional accessory)

It is recommended to use THS Rubber Socket on wheels with 17.5'' rims and for combinations with heavy load combined with high speed. Under these conditions the stress is very high and the sensor may in some cases be damaged. THS Rubber Socket ensures that the sensor is kept safely in place.

1. Place the sensor in the rubber socket



2. Clean the back of the socket with a non-lint cloth and alcohol based cleaner



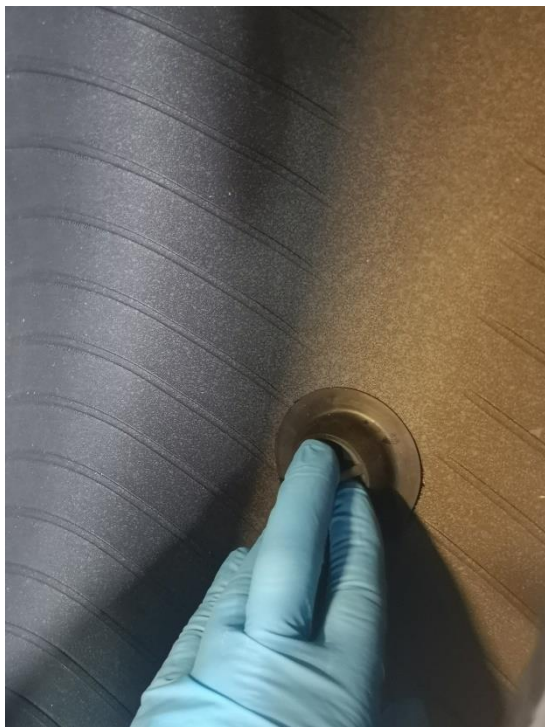
3. Clean the are where the sensor is to be placed



4. Apply Loctite 380 on the back of the socket (Loctite 406 may be used as an alternative)



5. Place the sensor in the cleaned area and apply pressure for 20 seconds.



6. Apply pressure around the edge of the socket to ensure good adhesion over the entire area.



7. Sensor installed, let cure for 1 hour before driving on road.

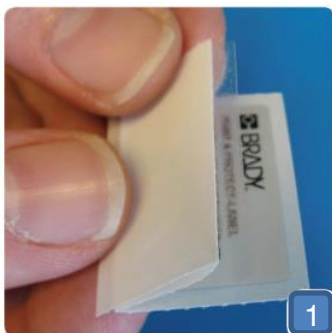


1.5.3. Installing THS Rim Label

To make it easier to see that a wheel contains a THS sensor, all sensors purchased from July 2022 will be delivered together with a label to put on the rim, preferably close to the valve.

Before applying the label to the rim, the protective film must be applied. Follow instructions below.

The thoroughly clean the application area and place the label on the rim.



1.6. THS Dashboard LED

How it works

The THS Dashboard LED works as an instant visual indicator when deflation/high temperature occurs. The electronics unit communicates directly with the THS gateway and will therefore alert even if the gateway should not have cellular connection.

RGB LED messaging

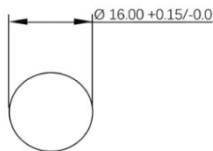
RGB LED state	Message
Red flash	Fast leakage ¹ or high temperature at any tyre.
Red constant	Slow leakage or pressure below 6 bar at front axle of truck
Yellow constant	Slow leakage or pressure below 6 bar at any truck or trailer tyre
Blue constant	No cellular network detected
Blue / Green slow flash ²	No gateway detected (No tyre warnings will be displayed)
No light	Connected to gateway, no new messages.

¹ more than 1 bar leakage per hour

² Start up condition until gateway is connected to LED module

Installation

1. Drill a 16mm hole in a suitable place in the dashboard or in a “dummy button”



Note that if the LED is to be mounted in a dummy button the nut will not fit inside the button and the LED needs to be glued.

2. Important! Register the serial number on the electronics unit in the vehicle set up in the app, or keep track of the serial for later. Read *User Manual THS Fleet Owner App* for more info.
3. Place the electronics unit behind the dashboard
4. Connect the 4 pin plug on the LED to the 4 pin connector on the electronics unit
5. Connect the power leads to 24VDC and connect the power connector on electronics unit

1.7. THS App set up instructions

Read the User Manual THS Fleet Owner App on how to register vehicle, gateway and sensors. It could be found by pressing the Help button in the app or by visting <https://el-watch.com/en/neuron-tyre-health-system-ths>

1.8. Disposal

The THS sensors and gateway should be disposed to the nearest Electronic Waste facility.