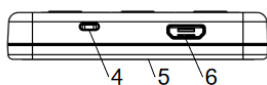


1 Description of the device

Protector XR1 is a device where you can store targets you want to be reminded of later. This could be a place where an authority has deemed it appropriate to carry out a traffic control, or any other location that needs your attention.

2 Names of parts



1. ADD-button
2. MODE-button (light)
3. REMOVE-button
4. Buzzer (sound)
5. Type label (on the bottom)
6. MicroUSB-connector

3 Commissioning the device

In order to work, the Protector XR1 must be installed in a position in the car and in a horizontal plane (for example on the car dashboard) so that the GPS/GNSS receiver can reliably read the signals from the positioning satellites. When installing the device, you should also take into account that the active mode light *) displayed by the device must not dazzle the driver or be visible to the outside in a way that is prohibited by law.

*) If necessary, you can replace the red light with yellow and blue with cyan by holding down the MODE button while the device starts up.

To supply the 5 volt DC voltage required by the device, you need:

- a MicroUSB cable and a telephone cigarette lighter charger or a car equipped with a fixed USB connector that can be loaded with more than the power consumption indicated in the technical data (11)
- or
- Extended Protection accessory (available at a later date).

4 On start-up

The Protector XR1 normally takes a few seconds to less than a minute to start up (hot vs cold start). This is indicated by lights, the meaning and sequence of which are explained below:

Purple light on (1-3 s): the device is reading the memory and the red light flashes if no stored targets were found and the green light flashes once for every 100 targets started.

A purple light starts flashing every two seconds or so: the device is now searching for satellites to locate and the protection is not yet active*).

The protection is active when the light starts flashing according to mode (6) every minute or so.

*) Note: Typically the time should be less than one minute. Otherwise, check the device's ability to receive positioning data from satellites. A steady purple light indicates an internal fault, a flashing light always indicates a lack of satellite connection.

5 Operating principle and adding a target

Protector XR1 measures position and speed*) by receiving signals from GPS/GNSS satellites. After pressing the ADD button, the Protector stores the GPS coordinates and your current speed **) in the device's memory. However, this storage is done by rounding your speed to the nearest ten. So, if the speed measured by the device was, say, 66 km/h, the speed stored would be rounded up according to the general rounding rule, and in this case would be 70 km/h.

*) Please note that the GPS speed measured by the device may not be identical to the vehicle's speedometer, for example due to instrument error.

**) From now on, this combination of GPS position and speed, stored in the memory of the device, will be called "target" for short.

In total, you can store 1000 targets and if you approach such a target from any direction in the future, the device will start reminding you about 15 seconds before you reach the target. Depending on the mode selected, the reminder may be a light or an alarm sound, so that if the speed you are travelling at is higher than the speed stored on the target, the device will try to remind you more intensely the higher the speed is in relation to the value stored on the target.

6 Device modes

The Protector XR1 has three modes to choose from: Silent, Normal and Full, distinguished by the colour of the light that flashes at regular intervals. The mode can be changed by pressing the MODE button.

- Silent mode (red): the device emits only one beep when approaching the target and the light corresponding to the mode lights up or flashes according to the principle described earlier (5).
- Normal mode (blue): in addition to the light, the device will give an audible reminder according to the principle described earlier (5) and the built-in *) extended protection output 1 will be activated about 5 seconds before the target.
- Full mode (green): is otherwise identical to Normal mode, but in addition to extended protection output 1, output 2 is also activated.

*) The Protector XR1 has two Extended Protection outputs, which require a separate accessory to be enabled, for example to control relays.

In short, Extended Protection is for cases where you want to trigger, for example, a privacy measure allowed by law, in addition to sound and light.

7 Deleting a target

You can remove a target by pressing the REMOVE button when you are approaching the target and within 15 seconds of it. That is, the approach indicator light will be on or flashing. However, the target will only be deleted during the next memory operation (8).

If necessary, you can remove all saved targets by holding down the ADD and REMOVE buttons while the device starts up.

The operation cannot be cancelled.

8 Other points to note

- Protector XR1 tracks 20 nearest targets at a time, not all of them, and performs a full memory scan (memory operation) every minute or so. However, protection measures take precedence over this and the execution of the memory operation is delayed, if necessary, to ensure that the protection start time is not exceeded.

Note that the protection is not active during a memory operation. This is indicated by a mode light on the device, typically 0.1 to 3 seconds, the duration of which depends on the number of stored items.

- An accepted ADD, MODE, REMOVE command is indicated by a combination of a beep and a green light, a rejected command by a red light.

9 Restrictions on use

Important! The Protector XR1 must not be used in any context as a personal protective equipment intended to prevent, for example, injury, disability or death.

10 Disclaimer

The Protector XR1 is by its nature a device which is subject to the possibility of a technical malfunction or failure and therefore the user undertakes that he/she shall not be entitled to claim any compensation from the manufacturer or its representative in the event of such malfunction or failure.

11 Technical specifications

- Operating voltage 5 VDC
- Current consumption 200 mA max, typical <60 mA
- Enclosure class IP 20
- Operating temperature +5 - +40°C
- Storage temperature -30 - +60°C

12 Manufacturer

Total Robotics Oy

Tuupikkalantie 2, 25210 Vartsala, Finland



Latest user manual
<https://www.totalrobotics.fi/manuals.html>

CE certificate https://www.totalrobotics.fi/docs/eu/CE-Protector-XR1_en.pdf

RoHS certificate https://www.totalrobotics.fi/docs/eu/RoHS-Protector-XR1_en.pdf