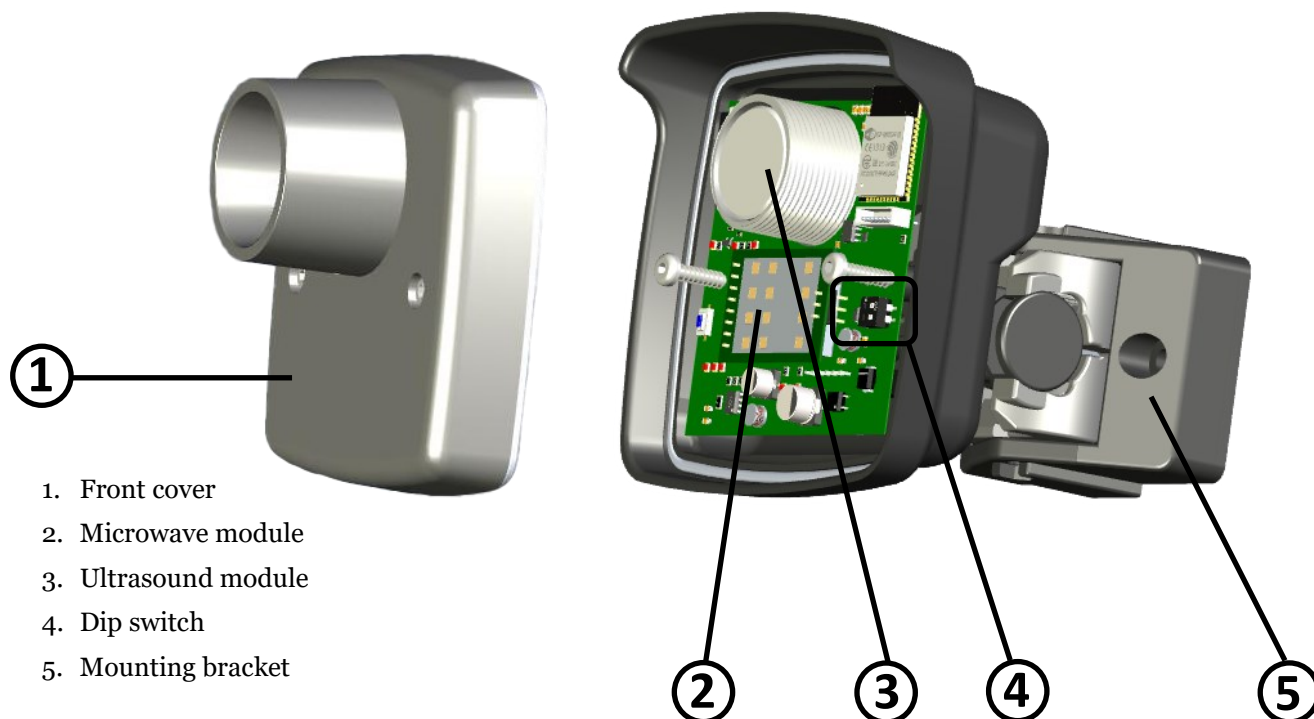


CAPTURE LOOP

v1.0.1

Vehicle detection sensor for barriers and gates - Microwave + Ultrasound



1. Front cover
2. Microwave module
3. Ultrasound module
4. Dip switch
5. Mounting bracket

1 TECHNICAL SPECIFICATIONS

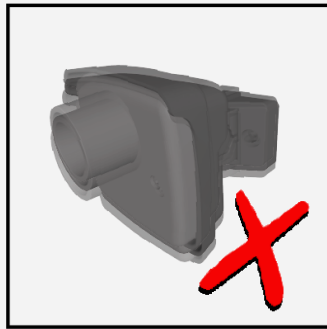
Technology:	Microwave doppler + Ultrasonic
Transmission frequency:	24,150 GHz
Transmitter radiated power:	< 20 dBm EIRP
Transmitter power density:	< 5 mW/cm ²
Detection mode:	Motion (RADAR) + Vehicle presence (ULTRASOUND)
Detection zone:	Microwave: 15 m** ; Ultrasonic: 7,5m** (vehicle), 2,5 m (people)** Ultrasonic Field of View area: 3,6 m ² at 7 m. distance
Minimum motion detection speed:	3-4 Km/h**
Vehicle speed	3 to 50 Km/h
Supply voltage:	12V/24V AC/DC - 50 - 60 Hz, protect with an 1 A fuse
Max power consumption:	< 2 W
Output/Input:	2 opto-isolated outputs (free contacts), RADAR + presence individually configurable NO/NC (max 42V, 500 mA) 1 wake/inhibit input (min 5V, max 12V, 500 mA)
Mounting height:	0,8 m to 3 m (recommended 1,5 m)
Protection class:	IP65
Temperature range:	-30 °C to +60 °C
Inclination angles:	+/- 45°
Materials:	ADA + Polycarbonate
Weight:	650g with cable
Cable length:	10 m.

Technical data may be changed without prior warning.

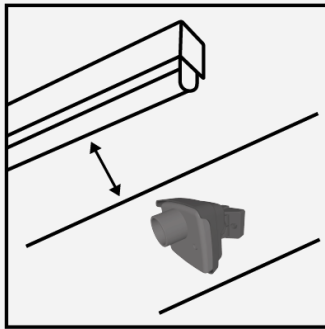
* The use of the sensor other than described cannot be guaranteed by the manufacturer.

** Under optimal ambient conditions.

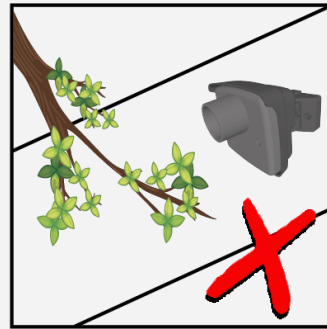
2 MOUNTING ADVICE



Avoid unstable surfaces and vibrations.



Mount sensor away from fluorescent or HID light sources.



Objects such as fans, plants, etc must not protrude into the detection area.

3 WIRING

BROWN	+	SUPPLY VOLTAGE
WHITE	-	12-24 V AC/DC
PINK	>	OUTPUT 1 (NO/NC)
GREEN		
GREY	>	OUTPUT 2 (NO/NC)
YELLOW		
BLUE		INPUT 5V
RED		OUTPUT 5V

Outputs: Each output can be set to activate when a detection is made, either by the radar or the ultrasonic sensor, or both: Radar, Ultrasonic, Radar & Ultrasonic. This configuration will be possible via Capture App.

Input: The input accepts a voltage of 5V and enables four functionalities:

Use **INHIBIT** to deactivate output e.g. while swing gate is moving into sensing zone.

- Can be set **LOW** to inhibit when input signal is low

- Can be set **HIGH** to inhibit when inputs signal is high

Use **WAKE** to temporarily set max sensibility of radar and ultrasonic sensor.

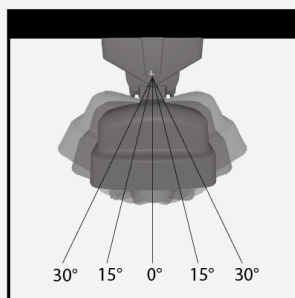
- Can be set **LOW** to boost when input signal is low

- Can be set **HIGH** to boost when input signal is high

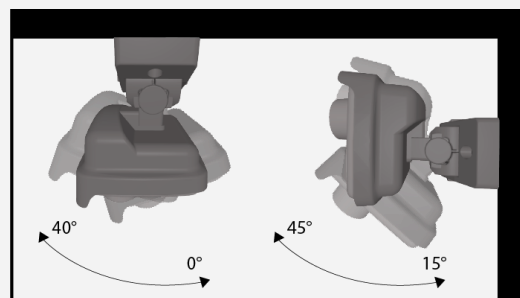
4 INSTALLATION RECOMMENDATIONS



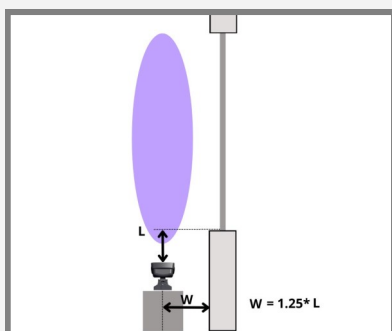
Tilt completely the sensor on one side to have access to fixing holes.



Adjust horizontal angle.

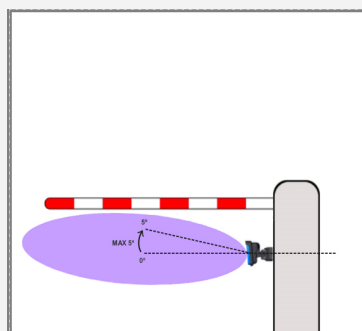


Adjust the vertical angle depending on the mounting height.



For optimal sensor function, follow the mounting **distances** indicated: **W** is the distance from the wall, **L** is the distance from the corner of the wall.

$$W = 1.25 * L$$

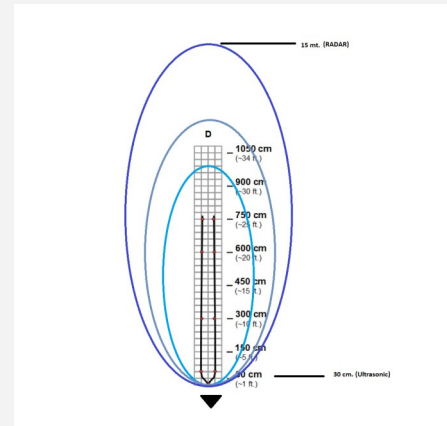


For optimal operation, follow the indicated mounting angle: At any installation height, tilt the device slightly upward (5°–10°) until false detections caused by the floor disappear, as visible in the calibration screen of the app.

5 PARAMETERS CONFIGURATION

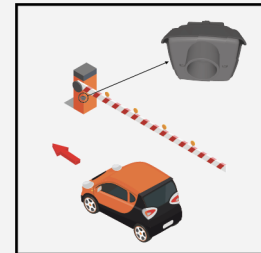
- Field dimension:** Regulate the width of the detection area. Starts from level 1 (minimum width), to level 7 (maximum width). More specific configuration can be set with the smartphone app;

1	2	3	4	5	6	7
-15°, +15°	-20°, +20°	-25°, +25°	-30°, +30°	-35°, +35°	-40°, +40°	-45°, +45°

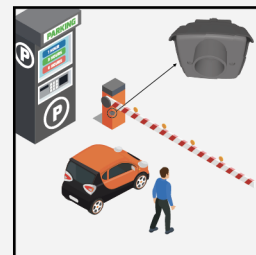
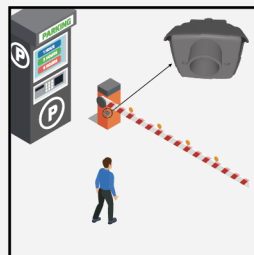
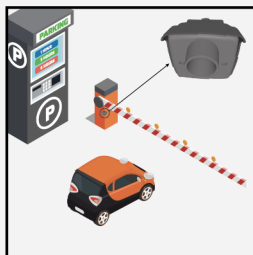


- Radar sensitivity:** Regulate the sensibility and anti-interference filter. Starts from level 1 (maximum sensibility + minimum anti-interference filter), to level 7 (minimum sensibility + maximum anti-interference filter);
- Hold-open time:** Sets the time during which the door stays open. Starts from level 1 (1 second), to level 7 (7 seconds); Longer times are configurable only with the app;
- Vibrations suppression:** in case of strong vibrations, you can use this filter to avoid disturbances. Selection from level 1 (no filters) to level 7 (strong filters).
- CrossTraffic Filtering:** Allows to ignore traffic that moves parallel to the door;

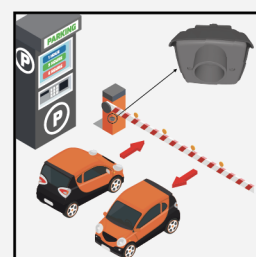
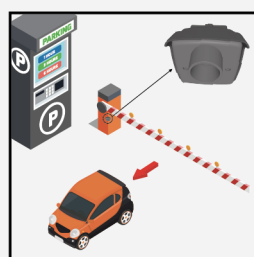
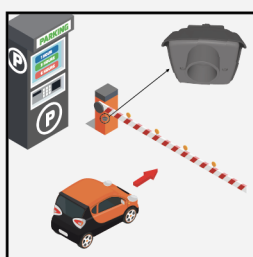
Off	Door opens at every movement detection
1	The smaller portion of cross traffic is ignored.
2	A significant portion of the traffic is ignored.
3	The majority of cross traffic is ignored.



- Outputs detection type:** Vehicles (1), people (2), people and vehicles (3);



- Outputs detection mode:** Sets the detection direction of approaching objects (1), receding objects (2), both directions (3).



6 SMARTPHONE APPLICATION

The radar can also be configured through the free **CaptureRadar** app, available for Android and iOS. The only way to access the change of advanced parameters is to request the password from the dealer.



Search “**Capture Radar Startec**” on your App Store, or use the QR_Code.



Quick installation configuration:

- 1) After opening the app, select your device from the list. Fig 1
- 2) Enter the default password "capture" and press ok. (For security reasons, we recommend that you change it later). Your smartphone will ask you to pair your Bluetooth device. Agree. Fig 2
- 3) Activate the Cross Traffic Filter before entering the calibration setup. Fig 3
- 4) Enter the "calibration setting" menu and select the position (diagonal left, diagonal right) and the mounting height. The Radar will then use the AutoTune function to automatically set the appropriate parameters. Fig 4
- 5) The configuration is finished. Optional: In the "calibration setting" page (Fig 4) it is possible to plot the radar detection in real time. And it is possible to adjust the ground projection by changing the angles and the minimum and maximum detection distances.

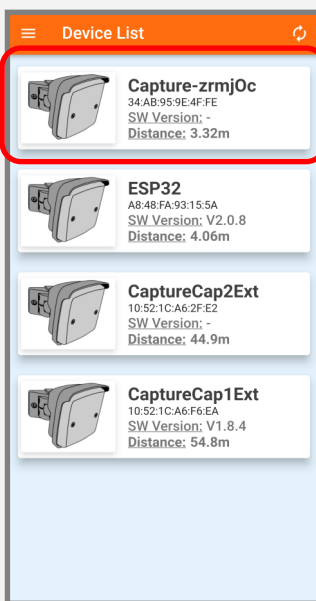


Fig 1

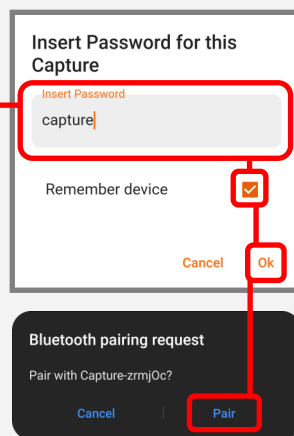


Fig 2

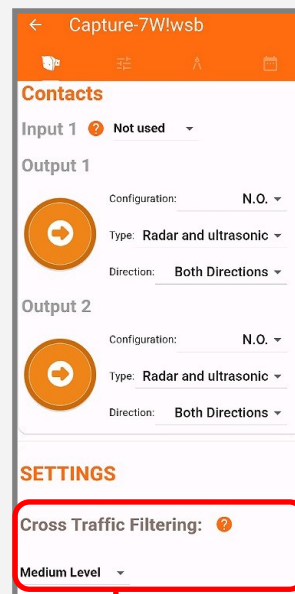


Fig 3

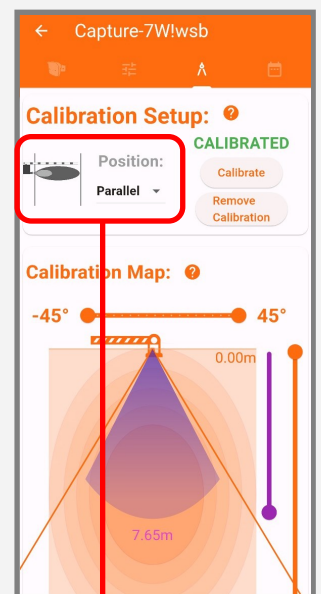
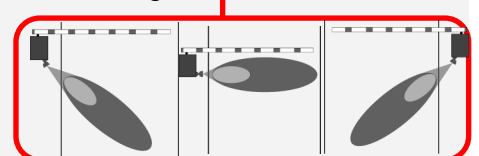
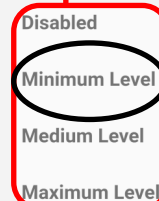
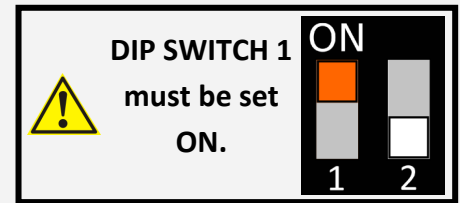


Fig 4



7 CALENDAR

The calendar function allows you to program the operating times of the radar. To activate this function, you need an initial configuration via the free app **App Capture**. After launching the app on your smartphone, connect to the radar to automatically synchronise the time and date.



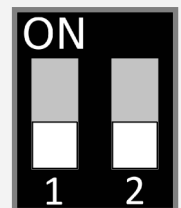
8 DIP SWITCH AND OTA UPDATE

Normally DIPs must be set **Off**.

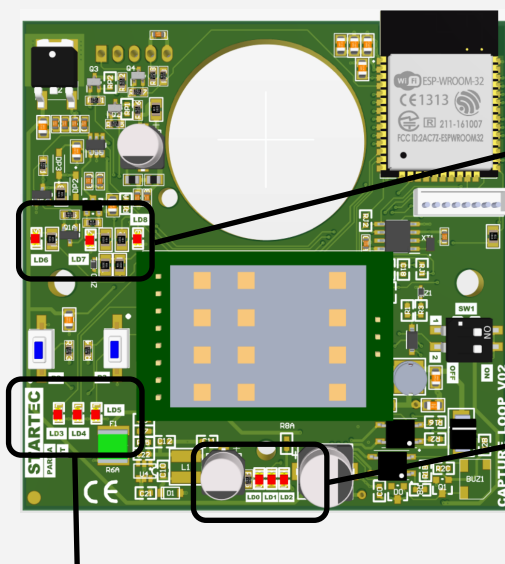
DIP 1: when set **On**, enables battery use.

DIP 2: when set **On**, enables OTA (Over the air) update with the following procedure:

The OTA update can be started from the smartphone app.



9 LED MEANING



LD8 - Watchdog. Firmware (flashes at steady frequency).

LD6, LD7, LD8 - Flash when switching on and during a Bluetooth pairing.

LD0 - Power supply OK

LD1 - Output CH1 enabled

LD2 - Output CH2 enabled

Radar sensor detections

L3 - Micro-detection Direction

L4 - Angulation (OFF = left side, ON = right side)

L5 - Direction (ON = approaching, OFF = receding)

10 COMMON PROBLEMS

The barrier remains closed. The LED is OFF.	The sensor power is off.	Check the wiring and the power supply.
The barrier does not react as expected.	Improper output configuration on the sensor.	Check the output configuration setting on each sensor connected to the automation.
The barrier opens and closes constantly.	The sensor is disturbed by the automation motion or by vibrations .	<ol style="list-style-type: none"> 1. Make sure the sensor is fixed properly. 2. Increase the tilt/inclination angle. 3. Reduce the field size.
The barrier opens for no apparent reason.	The sensor detects raindrops or vibrations.	<ol style="list-style-type: none"> 1. Decrease sensitivity. 2. Enable vibrations suppression.
The barrier stays open.	Improper output configuration (NO/NC) .	Change the output configuration.
The sensor detects people as well as vehicles.	The sensitivity is too high or the maximum people magnitude threshold is too low.	<ol style="list-style-type: none"> 1. Decrease sensitivity. 2. Increase the maximum people magnitude threshold.
Wrong clock time	The clock is not synchronised.	Connect the smartphone app to the radar to synchronize the time.
The clock always resets when power is turned off.	The battery level is low.	Replace the battery.
The calendar scheduler doesn't work.	Date and time haven't been synchronized with the smartphone app.	Connect the smartphone app to the radar to synchronize the time.
Cross traffic doesn't work properly	The installation type was not selected correctly.	Connect to the radar via the smartphone app and check the calibration tab. On this page you should select the installation type (diagonal left - diagonal right).
The barrier opens during raining or snowing.	The default configuration has been changed.	<p>Three settings can solve the problem:</p> <ol style="list-style-type: none"> 1. Set direction detection to "approaching"; 2. Disable the first meter of the detection field; 3. Reduce the sensitivity threshold.

SAFETY INSTRUCTIONS



The manufacturer of the door system is responsible for carrying out a risk assessment and installing the sensor and the door system in compliance with applicable national and international regulations and standards on door safety.
Only trained and qualified personnel may install and setup the sensor.
Only authorised personnel may carry out modifications or repairs to the product. Otherwise the warranty is void.

STARTEC

43126 Roncopascolo (Parma)
Via Pescatori Francesco, 5/a

Tel. (0039) 0521 63 11 01; Fax (0039) 0521 63 11 02

www.startec-automazioni.it

info@startec-automazioni.it



STARTEC hereby declares that the CAPTURE is in conformity with the basic requirements and the other relevant provisions of the directives 2014/53/UE and 2011/65/UE.



Devices with this symbol must be treated separately during disposal. This must be done in accordance with the laws of the respective countries for environmentally sound disposal, processing and recycling of electrical and electronic equipment.