STARTEC
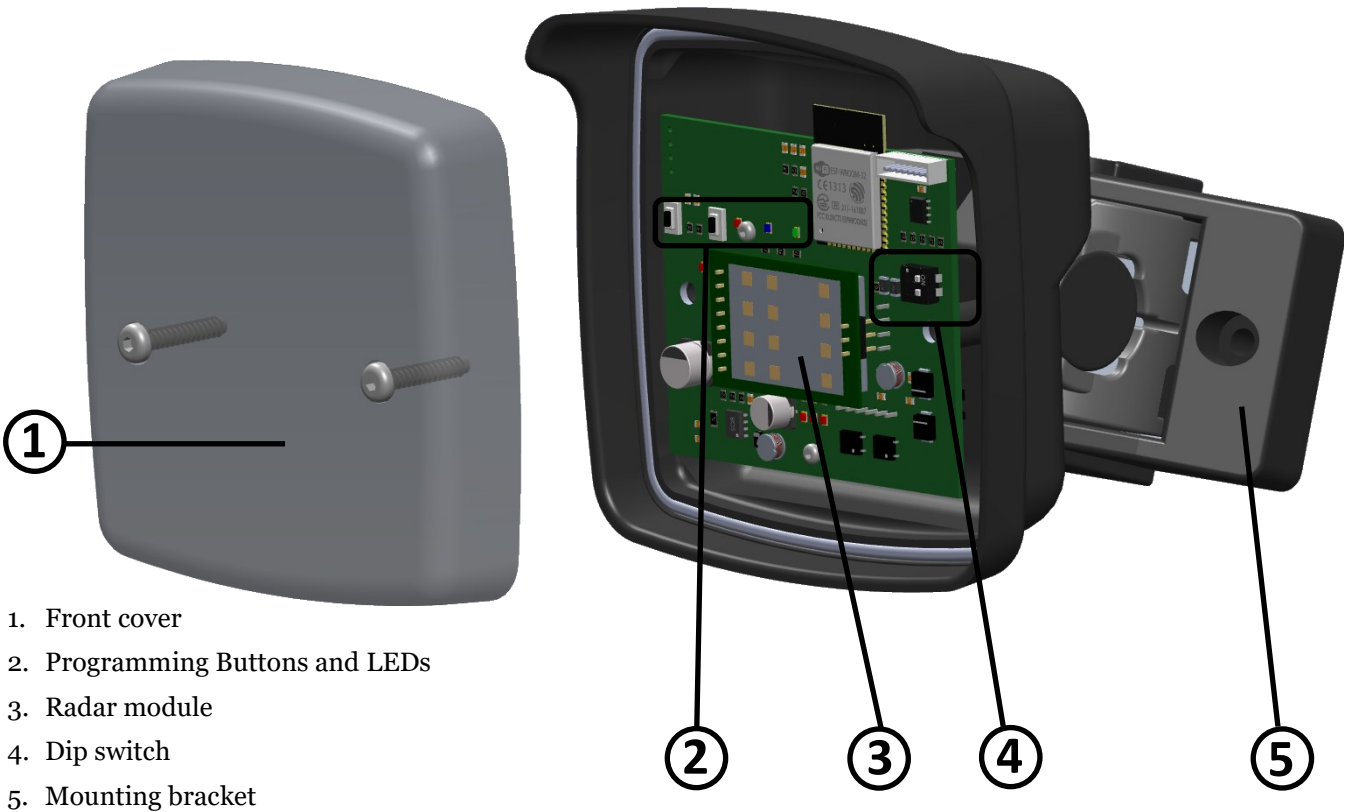
CAPTURE RADAR 1.1.0

Microwave motion detector for industrial doors* (2 m - 10 m)

1. Front cover
2. Programming Buttons and LEDs
3. Radar module
4. Dip switch
5. Mounting bracket

1 TECHNICAL SPECIFICATIONS

|	
Technology:	Microwave doppler radar
Transmission frequency:	24,150 GHz
Transmitter radiated power:	< 20 dBm EIRP
Transmitter power density:	< 5 mW/cm^2
Detection mode:	Motion
Detection zone:	34° x 80°
Minimum detection speed:	5 cm/s**
Supply voltage:	12V/24V AC/DC insert a 1A fuse on external power supply
Mains frequency:	50 - 60 Hz
Max power consuption:	< 2 W
Outputs:	2 outputs: NO/NC configuration (Normally open/closed) Max. load voltage: 42V peak or DC; Max. load current: 500 mA
Mounting height:	2-10 m
Protection class:	IP65
Temperature range:	-30 °C to +60 °C
Inclination angles:	0° to 45° vertically; +30°, +15°, 0°, -15°, -30° horizontally
Materials:	ADA + Polycarbonate
Weight:	240g without cable, 637g with cable
Cable lenght:	Available in 4 versions: a) 6 m, b) 8 m, c) 10 m, d) 15 m
Norm conformity:	EN IEC 62311:2020; EN IEC 62368-1:2014/AC:2015/AC:2017/A11:2017; EN 55032:2015 + A11:2020; EN 55035:2017/A11:2020; ETSI EN 301 489-1 V2.2.3; ETSI EN 301 489-3 V2.1.1; ETSI EN 301 489-17 V3.2.4; EN 300 328 V2.2.2

Technical data may be changed without prior warning.
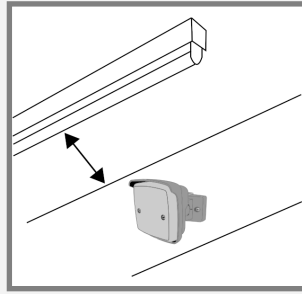* The use of the sensor other than described cannot be guaranteed by the manufacturer.
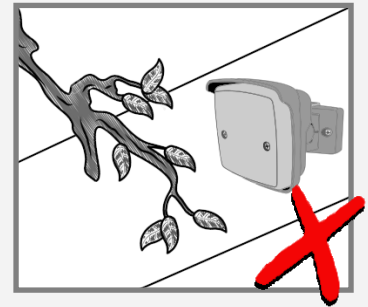** Under optimal ambient conditions.

2 MOUNTING ADVICE
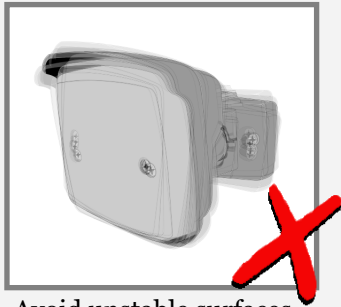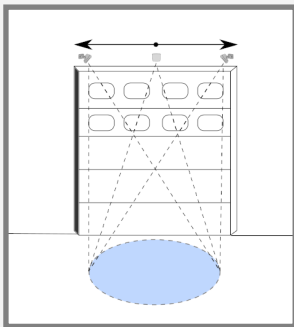
Avoid unstable surfaces and vibrations.

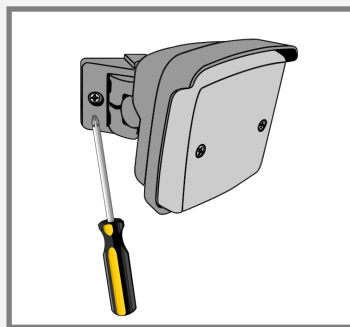Mount sensor away from fluorescent or HID light sources.

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

3 MOUNTING AND WIRING

Can be mounted on the entire lenght of the door.

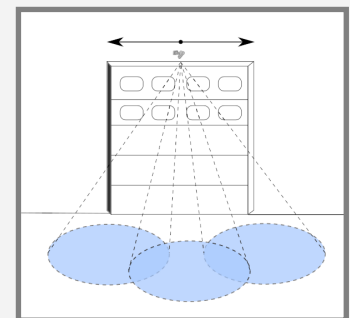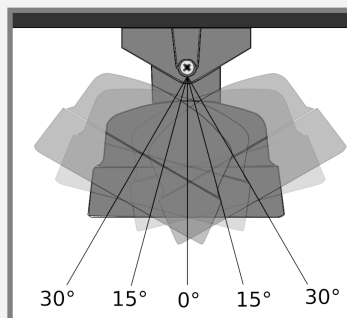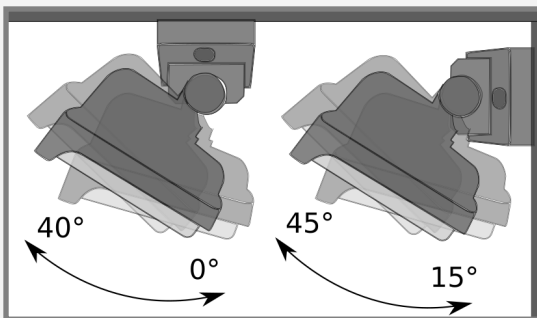Tilt completely the sensor on one side to have access to fixing holes.

WHITE	
BROWN	− SUPPLY VOLTAGE 12-24 V AC-DC +
GREEN	
PINK	OUTPUT 1 (NO/NC)
YELLOW	
GREY	OUTPUT 2 (NO/NC)

Connect the wires to the door controller/inverter.
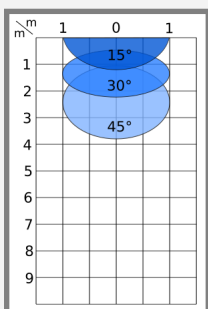
4 DETECTION FIELD ADJUSTMENTS

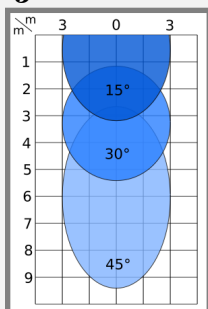Adjust the vertical angle depending on wall or ceiling mounting.

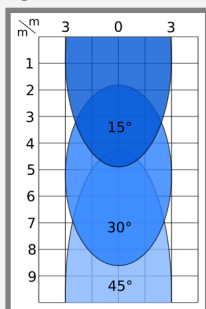40° 0°   45° 15°

Adjust horizontal angle:

30°   15°   0°   15°   30°

With the double joint, the angles can be adjusted quickly and easily as required.

Mounting height:

2 m

m\m	1	0	1
1		15°	
2		30°	
3		45°	
4			
5			
6			
7			
8			
9			

5 m

m\m	3	0	3
1			
2		15°	
3			
4		30°	
5			
6			
7			
8		45°	
9			

8 m

m\m	3	0	3
1			
2		15°	
3			
4			
5			
6		30°	
7			
8			
9		45°	

The dimensions of the detection field were measured under optimal conditions with the standard value for field size (4)

5 CONFIGURATION THROUGH PUSH BUTTONS
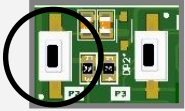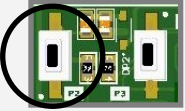
Remove the 2 screws from the front cover to have access to the configuration push buttons.
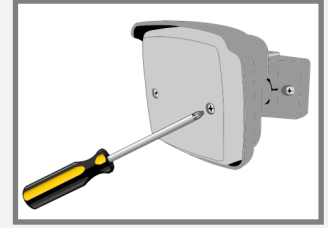
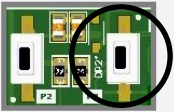The configuration is done through 2 push buttons and 3 colored LEDs (red, blue, green).

To START or STOP A CONFIGURATION SESSION, keep the **left** button pressed until the 3 configuration LEDs flash 2 times. You will hear a confirmation sound.

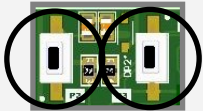To CHOOSE THE PARAMETER, press the **left** button.

Count the LEDs flashes to understand which parameter is selected and its value.

To CHANGE THE PARAMETER'S VALUE, press the **right** button.

To RESTORE FACTORY SETTINGS, keep **both** buttons pressed until the LEDs flashes. You will hear a long confirmation sound.

|	Parameter n.		Values (factory value)
	Red	Blue	Green
1 FIELD DIMENSION	1 red		7 green (4)
2 RADAR SENSITIVITY	2 red		7 green (1)
3 HOLD-OPEN TIME	3 red		7 green (3)
4 VIBRATIONS SUPPRESSION	4 red		7 green (1)
5 MOUNTING HEIGHT	5 red		7 green (4)
6 CROSSTRAFFIC FILTERING	6 red		4 green (1)
7 OUTPUT 1 CONFIGURATION		1 blue	2 green (1)
8 DETECTION TYPE OUTPUT 1		2 blue	3 green (1)
9 DETECTION MODE OUTPUT 1		3 blue	3 green (1)
10 OUTPUT 2 CONFIGURATION		4 blue	2 green (1)
11 DETECTION TYPE OUTPUT 2		5 blue	3 green (2)
12 DETECTION MODE OUTPUT 2		6 blue	3 green (1)

PARAMETERS EXPLAINED IN DETAIL IN PARAGRAPH 6. (page 4)

6 PARAMETERS CONFIGURATION

1. **Field size**: 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°

1: -15°,+15°
4: -30°,+30°
7: -45°,+45°
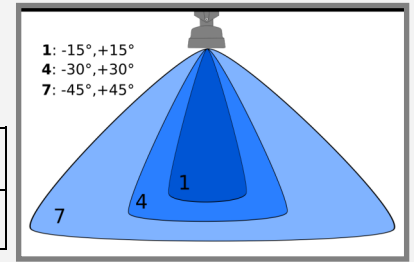
2. **Radar sensitivity**: the sensitivity and the interference filter can be regulated from level 1 (lowest sensitivity and filter) to level 7 (strong sensitivity + strong filter);

3. **Hold-open time**: sets the time for which the gate remains open, from level 1 (1 sec.) to level 7 (7 sec.). Longer times can be set via the Free App;

4. **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). We recommend leaving the default value set;

5. <u>**Mounting height**</u>: Sets the installation height of the device. **Indispensable for the correct function of the sensor**;

| 1	2	3	4	5	6	7	8	9
2 - 2,4 m	2,5-2,9 m	3 - 3,9 m	4 - 4,9 m	5 - 5,9 m	6 - 6,9 m	7 - 7,9 m	8 - 8,9 m	9 - 9,9 m

6. **CrossTraffic Filtering**: Allows to ignore traffic that moves parallel to the door;

| Off	Door opens at every movement
1	Door occasionally opens when crossing traffic is detected
2	Door rarely opens when crossing traffic is detected
3	Door never opens by crossing traffic
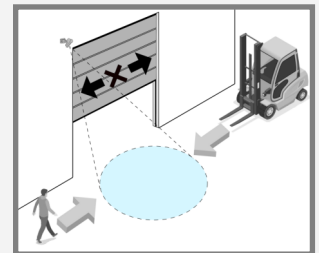
⚠ For optimal operation, indicate in the App where the radar is installed (**central/ right corner/ left corner**). By default, it is set to "central".

7. **Outputs configuration**: **NO** output (normally open), **NC** output (normally closed);

8. **Outputs detection type**: Vehicles (**1**), people (**2**), people and vehicles (**3**);
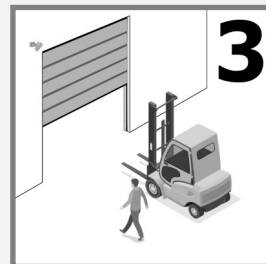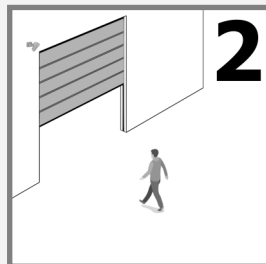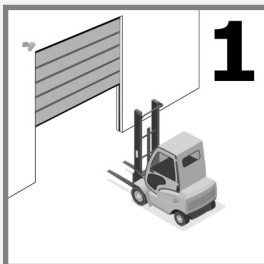
⚠ People cannot be detected beyond height of 7,5 m.

9. **Outputs detection mode**: Sets the detection direction of approaching objects (**1**), receding objects (**2**), both directions (**3**).
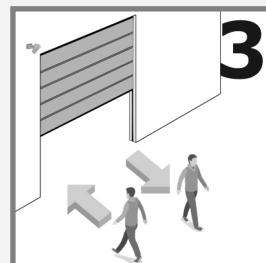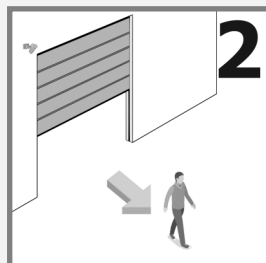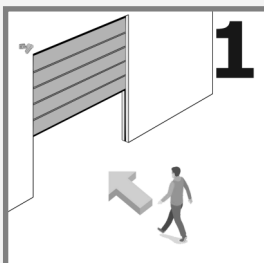
7 DIP SWITCH AND OTA UPDATE

Normally DIPs must be set **Off**.
**DIP 1**: not used.
DIP 2: when set **On**, enables OTA (Over the air) update with the following procedure:

- Disconnect power supply and set **DIP 2** ON;

- Connect power supply and wait until the 3 LEDs flash continuously.

- Set **DIP 2** to **Off** and create a hotspot with your smartphone. Enter SSID: "Capture" and PASSWORD: "password";

- The radar connects to the hotspot and the LEDs stop flashing. During the download, only the green LED flashes.

- At the end of the download the LEDs will flash 2 times.
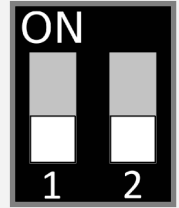
> ! The OTA update can also be started from the smartphone app.

8 LED MEANING
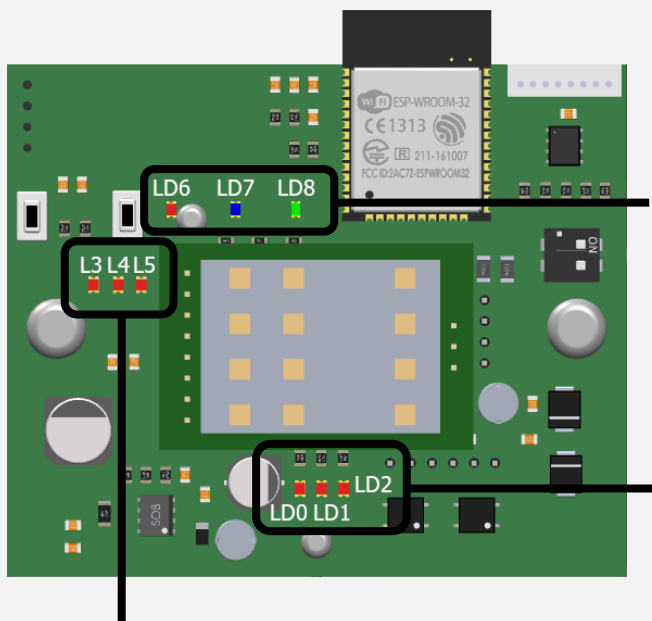
LD8 - Watchdog. Firmware (flashes at steady frequency).
LD6, LD7, LD8 - Flash when switching on and during a Bluetooth pairing.

LD0 - Power supply OK
LD1 - Output CH1 enabled
LD2 - Output CH2 enabled

Radar sensor detections

L3 - Direction (ON = approaching, OFF = receading)

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

L5 - Micro-detection

9 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.

GET IT ON
Google Play

Download on the
App Store

10 APP INITIAL SETUP

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 (left, centre, right from the door) 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.
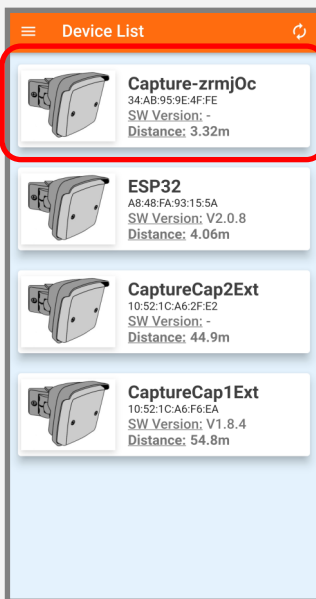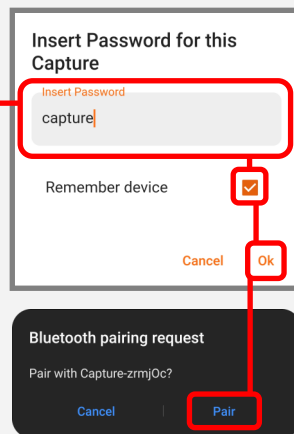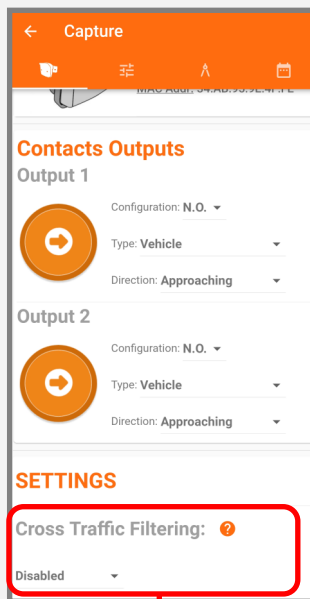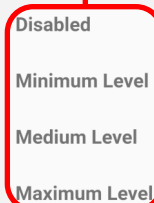
Fig 1

Fig 2

Fig 3

Fig 4

11 COMMON PROBLEMS

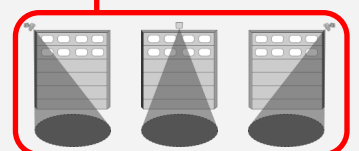|		
The door remains closed. The LED is OFF.	The sensor power is off.	Check the wiring and the power supply.
The door does not react as expected.	Improper output configuration on the sensor.	Check the output configuration setting on each sensor connected to the door operator.
The door opens and closes constantly.	The sensor is disturbed by the door motion or vibrations caused by the door motion.	1. Make sure the sensor is fixed properly. 2. Increase the tilt/inclination angle. 3. Reduce the field size.
The door opens for no apparent reason.	The sensor detects raindrops or vibrations.	1. Decrease sensibility. 2. Enable vibrations suppression.
The door stays open.	Improper output configuration (NO/NC) .	Change the output configuration.
The door does not distinguish correctly between people and vehicles.	Wrong mounting height set.	Change the mounting height value.
Cross traffic doesn't work on a corner installation.	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 (central, corner left, corner right).
The door opens during raining or snowing.	The default configuration has been changed.	Three settings can solve the problem: 1. Set direction detection to "approaching"; 2. Disable the first meter of the detection field; 3. Reduce the sensitivity treshold.

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 inhibited.

STARTEC

CE 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.