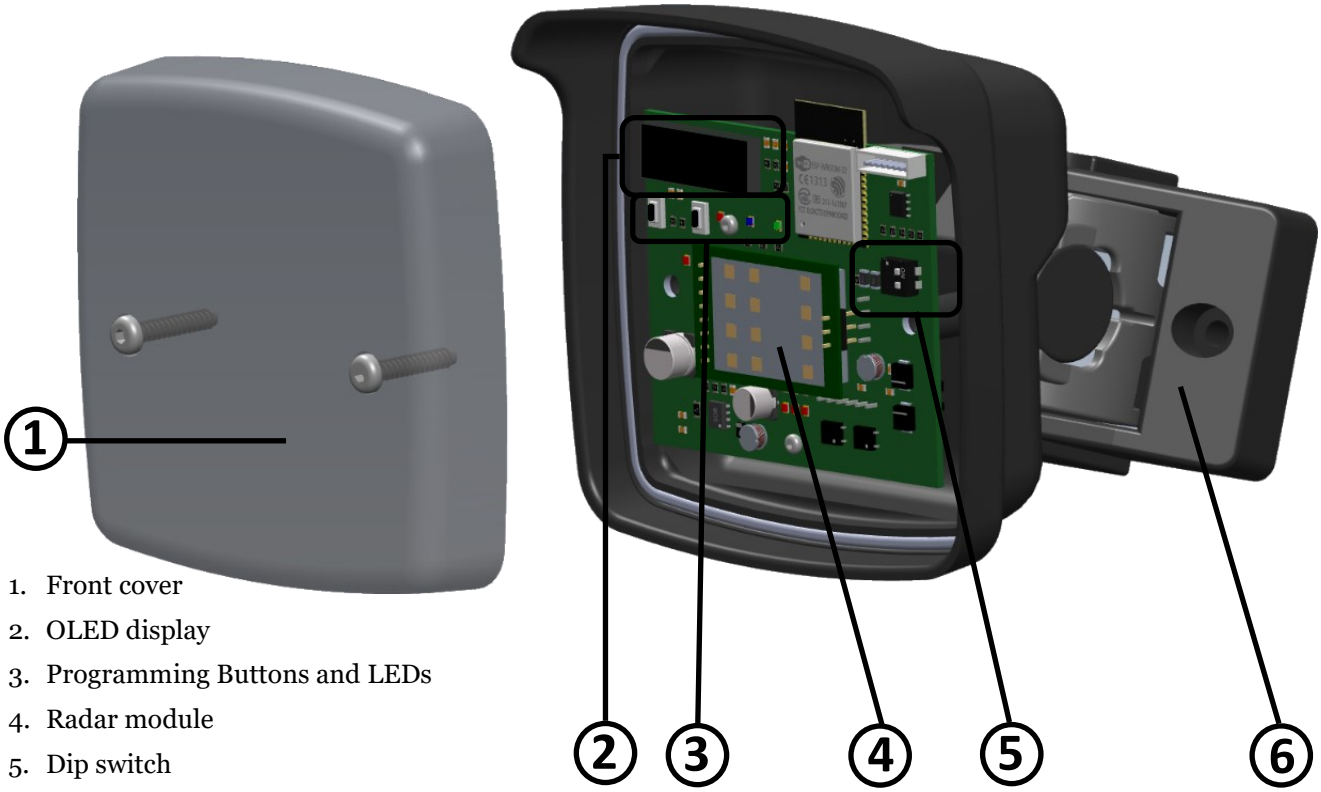
Art. 50500400 Art. 50500441
Art. 50500442 Art. 50500443

STARYEC

CAPTURE RADAR PRO 2.2.2

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



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

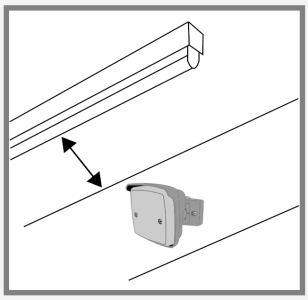
1 TECHNICAL SPECIFICATIONS

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 consumption:	< 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

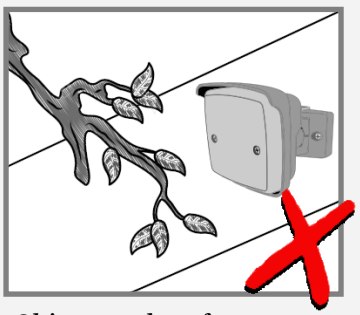
Technical data may be changed without prior warning.
* The use of the sensor other than described cannot be guaranteed by the manufacturer.
** Under optimal ambient conditions.

2 MOUNTING ADVICE

Avoid unstable surfaces and vibrations.

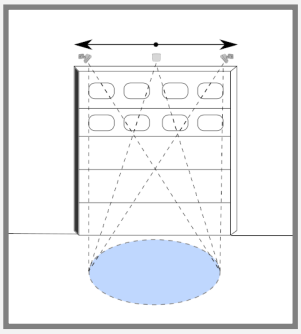


Mount sensor away from fluorescent or HID light sources.

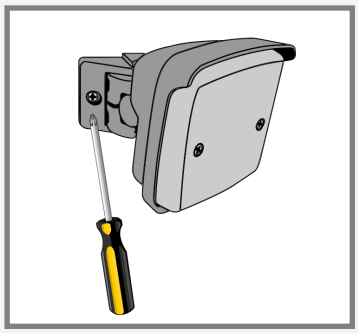


Objects such as fans, plants, etc must not protrude into the detection area.

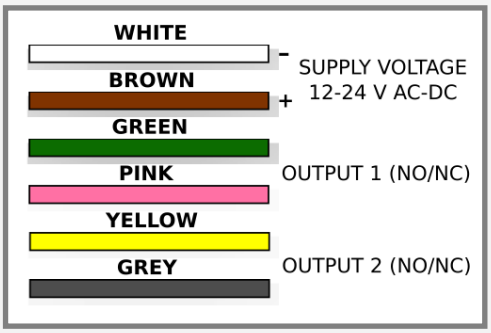
3 MOUNTING AND WIRING



Can be mounted on the entire lenght of the door.



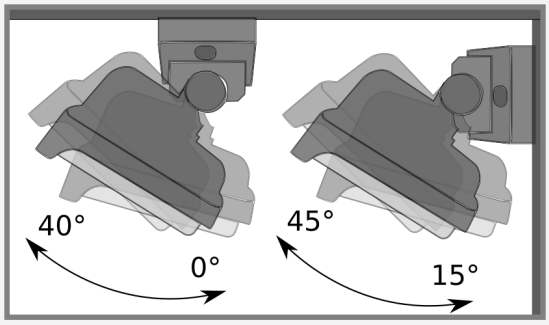
Tilt completely the sensor on one side to have access to fixing holes.



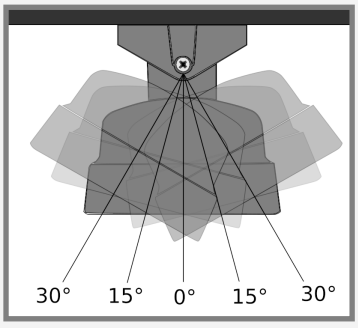
Connect the wires to the door controller/inverter.

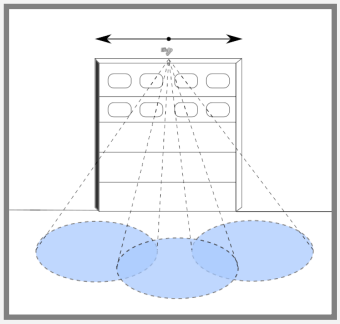
4 DETECTION FIELD ADJUSTMENTS

Adjust the vertical angle depending on wall or ceiling mounting.



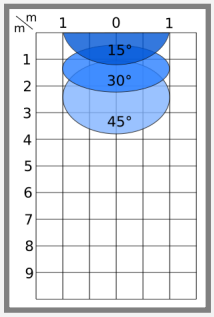
Adjust horizontal angle:



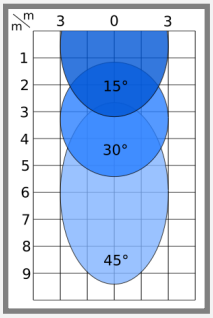


Mounting height:

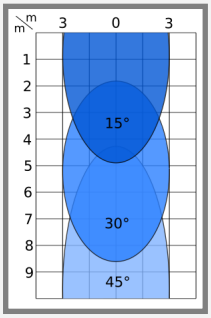
2 m



5 m



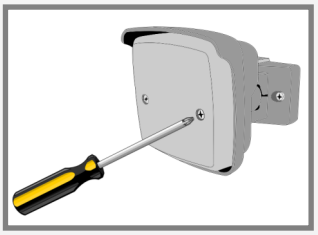
8 m



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

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

5 CONFIGURATION THROUGH OLED DISPLAY



Remove the 2 front cover fixing screws to access the programming buttons and the OLED display.

The configuration is done via 2 buttons with which you can select the parameters on the OLED display.

When idle, the message “CAPTURE OLED” appears on the display.

Press one of the 2 buttons to enter the configuration menu. You will hear a confirmation tone.

Press the **right** button to go to the next parameter.

Press the **left** button to go to the previous parameter.

To ***select a parameter***, press **both** buttons at the same time. You will hear a confirmation tone.

Press the **right** button to increase the value.

Press the **left** button to decrease the value.

Press **both** buttons at the same time to confirm the value displayed. You will hear a confirmation tone.

Keep pressed the **right** button for **3** seconds to exit the parameter configuration menu without modifying the value. You will hear a confirmation tone.

Select  to exit the configuration menu (You will hear a confirmation tone), or *wait 30 seconds* to exit automatically.

To RESTORE THE FACTORY SETTINGS, press **both** buttons until the LEDs flash.

Before restoring factory settings you must exit the configuration menu.

1) FIELD SIZE						
15°	20°	25°	30°	35°	40°	45°

2) SENSITIVITY						
1	2	3	4	5	6	7

3) HOLD-OPEN TIME						
1s	2s	3s	4s	5s	6s	7s

4) VIBRATIONS SUPPRESSION						
1	2	3	4	5	6	7

5) MOUNTING HEIGHT								
2-2,4m	2,5-2,9m	3-3,9m	4-4,9m	5-5,9m	6-6,9m	7-7,9m	8-8,9m	9-9,9m

6) CROSS-TRAFFIC FILTER			
Off	1	2	3

7) OUTPUT 1 CONFIGURATION		
	(NO)	(NC)

8) DETECTION TYPE 1			

9) DETECTION MODE 1			

10) OUTPUT 2 CONFIGURATION		
	(NO)	(NC)

11) DETECTION TYPE 2			

12) DETECTION MODE 2			

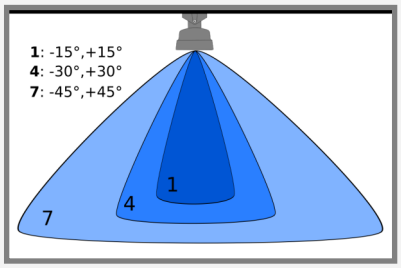
CALENDAR SCHEDULER
YYYY-MM-DD HH:MM:SS

14) EXIT

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

6 PARAMETERS CONFIGURATION

1. **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;

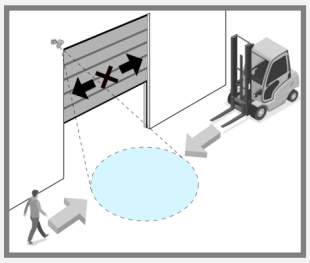


1	2	3	4	5	6	7
-15°,+15°	-20°,+20°	-25°,+25°	-30°,+30°	-35°,+35°	-40°,+40°	-45°,+45°

2. **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);
3. **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;
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. **Mounting height**: Sets the installation height of the device. ***Fundamental 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

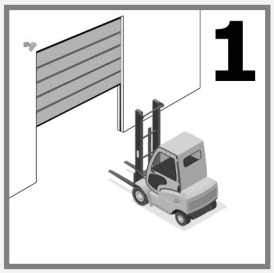
6. **CrossTraffic Filtering**: Allows to ignore traffic that moves parallel to the door;

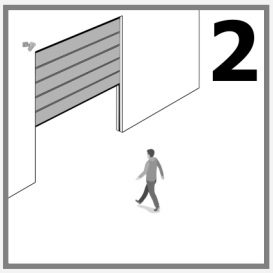


Off	Door opens at every movement
1	Door occasionally opens when crossing traffic is detected
2	Door rarely opens when crossing traffic is detected
3	Door never opens by cross traffic

⚠ For optimal operation, indicate in the App where the radar is installed (**central/ right corner/ left corner**). By default, it is set to "central".

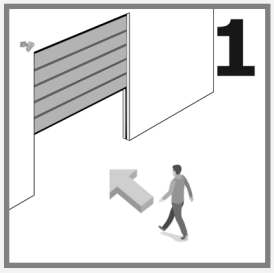
7. **Outputs configuration**: **NO** output (normally open), **NC** output (normally closed);
8. **Outputs detection type**: Vehicles (**1**), people (**2**), people and vehicles (**3**);

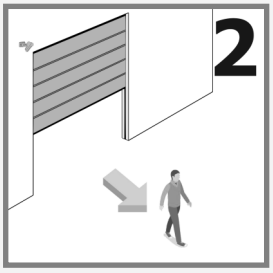


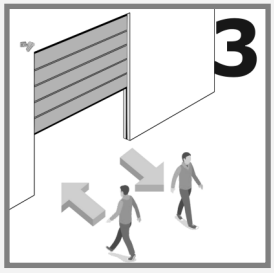


⚠ People cannot be detected beyond height of 7,5 m.

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





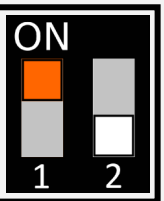


7 CALENDAR SCHEDULER

To use this feature, plug in the battery before the installation.

The calendar function allows you to programm 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.

DIP SWITCH 1 must be set ON.



CONFIGURATION VIA OLED DISPLAY

Enter menu 13 *CALENDAR SCHEDULER* by pressing **both** buttons (you will hear a confirmation tone).

Select the day tou want to configured and press **both** buttons to start the configuration (confirmation tone). *Fig. 1*

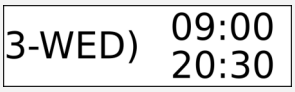


Fig. 1

Select the radar starting time using the **right** button to increase by *30 minutes at a time* (from 00:00 to 23:59), and the **left** button to decrease it. *Fig. 2*

Fig. 2

Press **both** buttons to confirm the start time (confirmation tone).

Now select the ending time in the same way as previously explained. *Fig. 3*

Fig. 3

To exit the configuration menu, keep the **right** button pressed, or just wait 30 seconds to automatically exit.

24h/24h operation

Simply set the same start and end time. *Fig. 4*

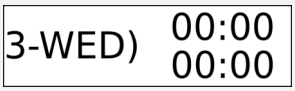


Fig. 4

Radar disabled

The radar can be disabled for the whole day. After you have entered the configuration of the day, press and hold the **left** button. You will hear a confirmation tone and dashes will appear instead of the time. *Fig. 5*

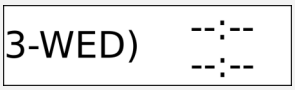
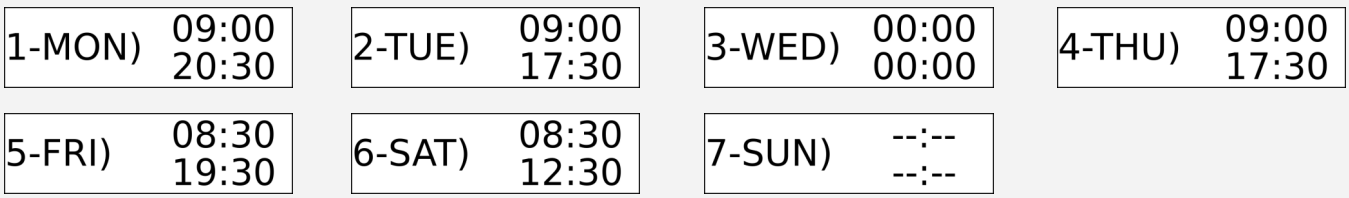


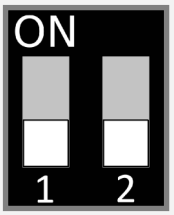
Fig. 5

Configuration example



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:

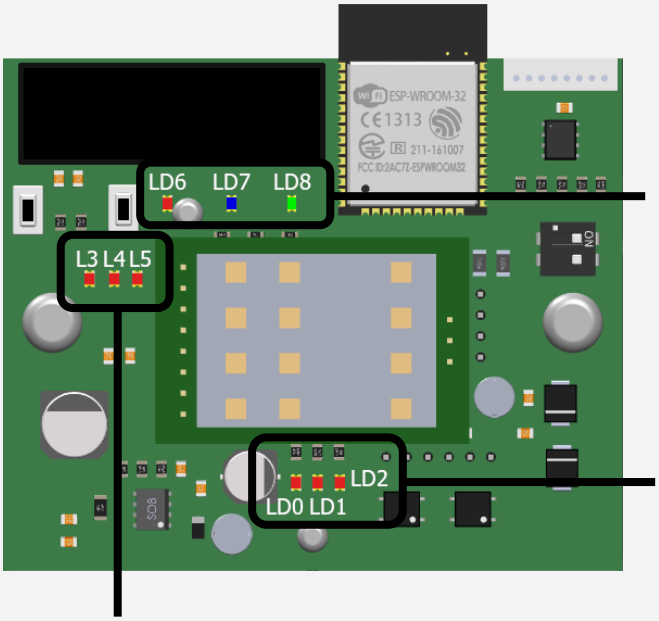


- Disconnect power supply and set **DIP 2** ON;
- Connect power supply and wait until the 3 LEDs flash continuously;
- Set **DIP 2** to **Off** and create a hotspot with your smartphone. Enter SSID: "Capture" and PASSWORD: "password";
- The radar connects to the hotspot and the LEDs stop flashing. During 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.

> Only set **DIP 1** ON during the installation in order to not drain the battery.

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 - Direction (ON = approaching, OFF = receading)
L4 - Angulation (OFF = left side, ON = right side)
L5 - Micro-detection

10 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

11 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.

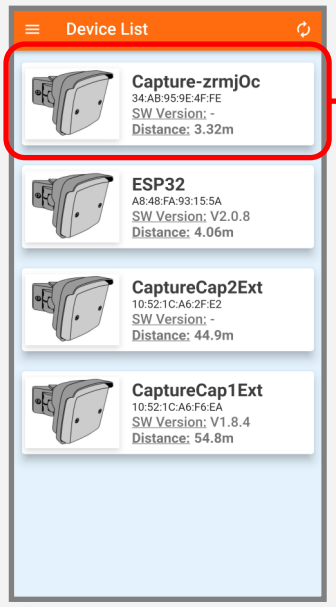


Fig 1

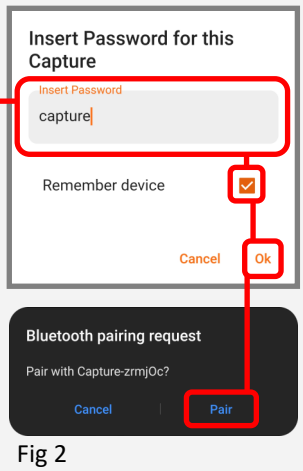


Fig 2

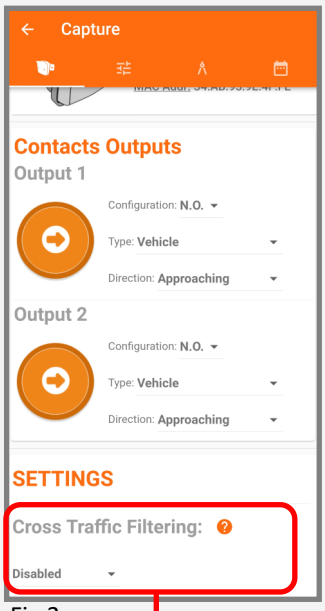


Fig 3

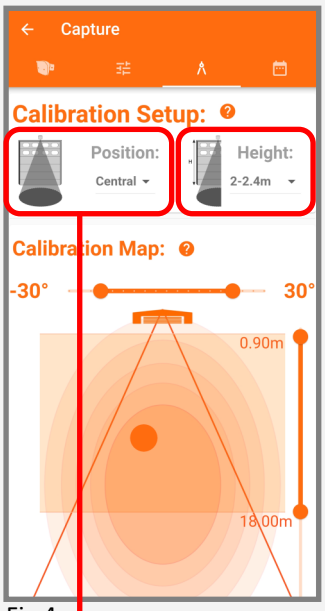
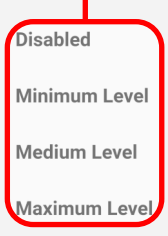
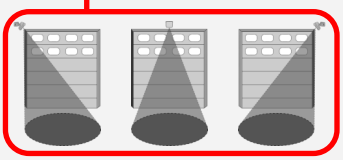


Fig 4





12 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 sensitivity. 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.
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.
Daylight saving time (DST) shift doesn't work.	Daylight saving time is set to work properly in the european countries.	Set the calendar scheduler taking into account the time difference shift of your contry compared to Central Europe.
Cross traffic doesn't work on a corner installation.	The installation type was not selected correcly.	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 void.

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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.