Localisation marker
User documentation
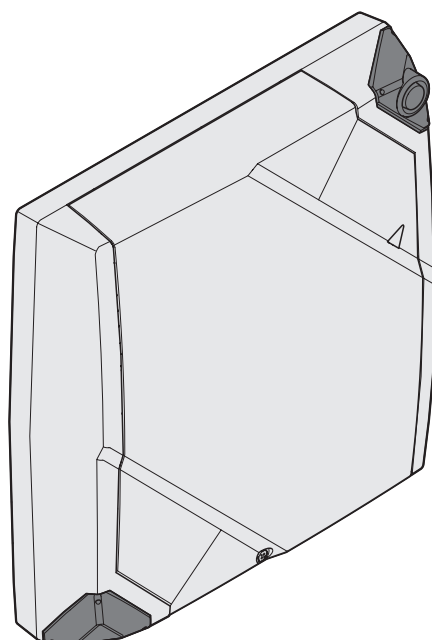
1. Description

Intended use

The SmartLiberty localisation marker enables the localisation of SmartLiberty badges by combining infrared (IR) and low frequency (LF) signals.

Reference documents

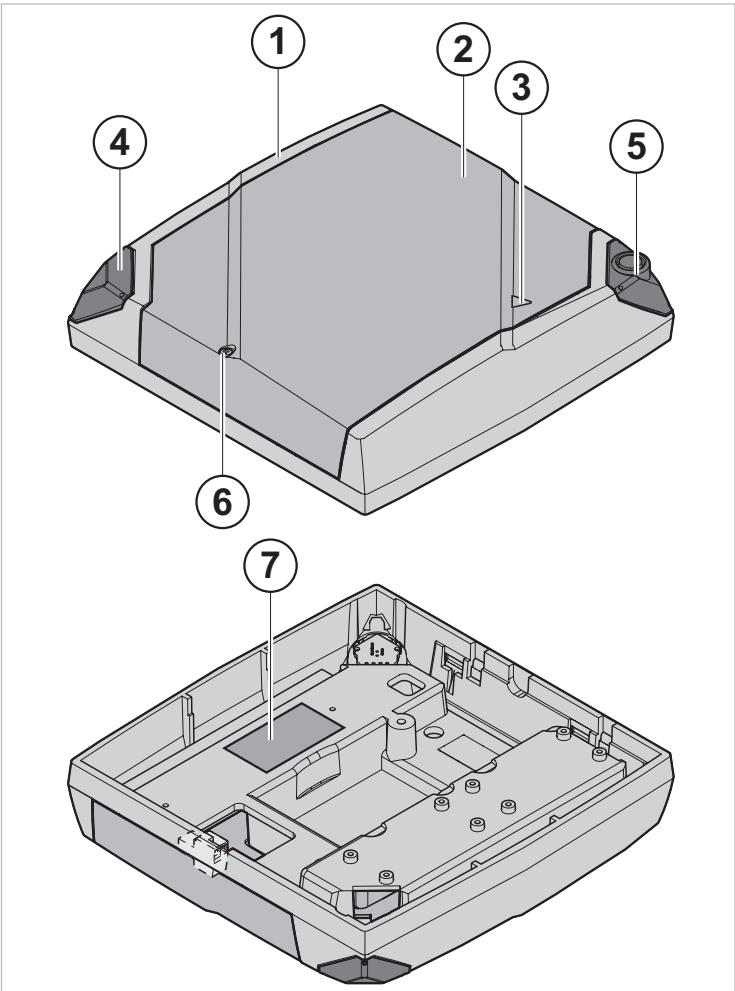| Document	Description / Document no.
Data sheet	Localisation marker technical features
Project contract	Client specifications and installation plan
User documentation IP65 dust and waterproof kit	User documentation with instructions for installation and use

Overview

Fig. 1   Localisation marker

1   Marker housing
2   Cover
3   Indicator light (LED)
4   Infrared transmitter corner
5   Motion sensor
6   Closure screw
7   Optional self-adhesive tag indicating installation point
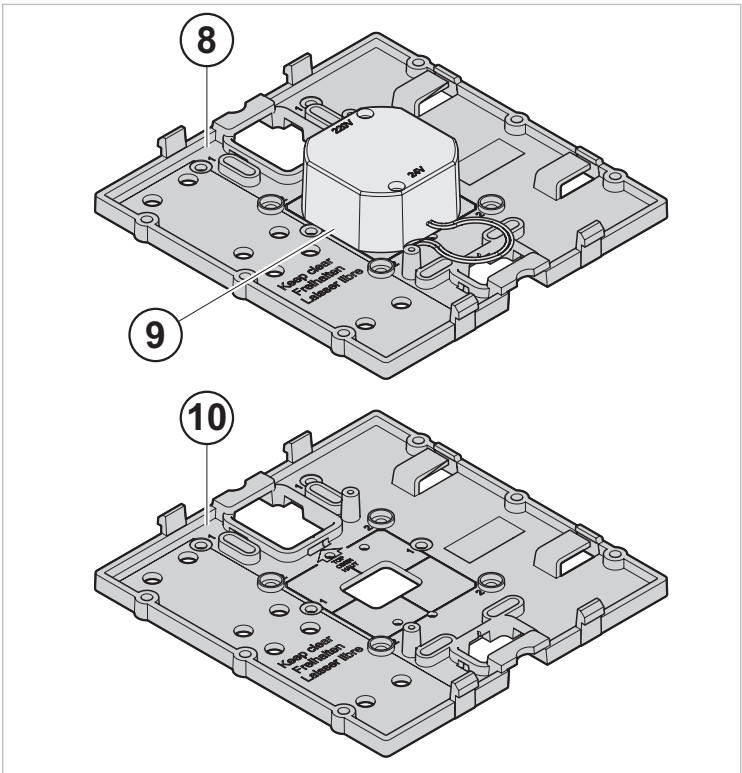

Fig. 2   Universal mounting plate with or without 230 V / 24 V transformer

8   Universal mounting plate
9   Transformer with 230 VAC / 24 VDC cables
10   Universal mounting plate
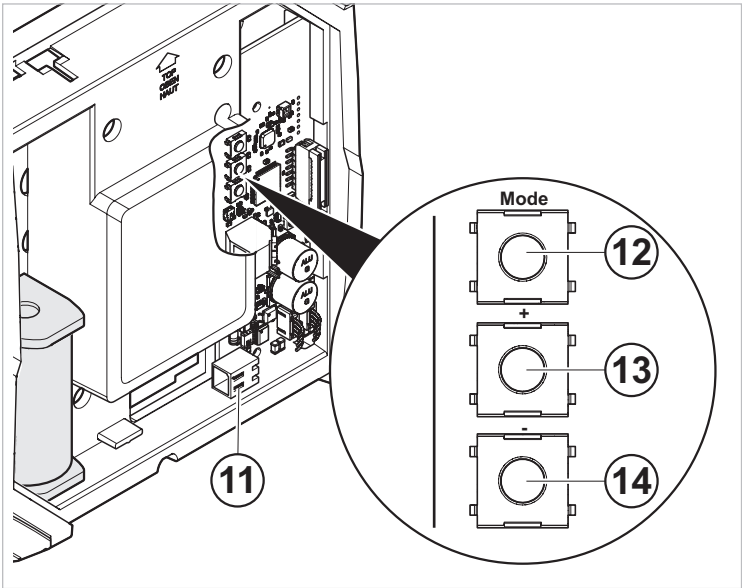

Fig. 3   Settings

11   Optional plug-in terminal 2-pole, for max. 2x1 mm^2 24 VDC
12   Mode button for setting the test mode
13   Button for increasing the range (0-255)
14   Button for decreasing the range (0-255)

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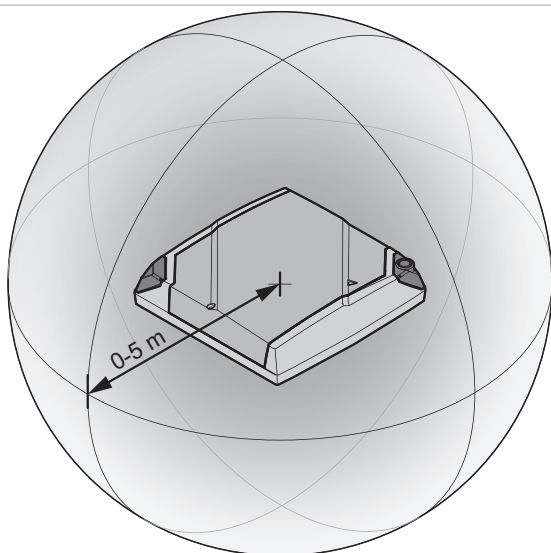
Power options

Universal mounting plate

- Battery (replaceable). Only use batteries approved by the manufacturer (see SmartLiberty website).
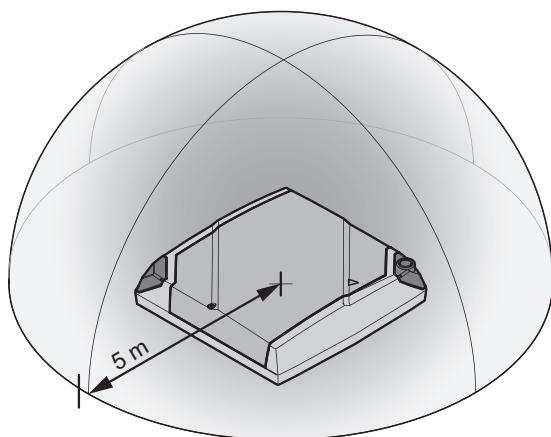- 24 VDC

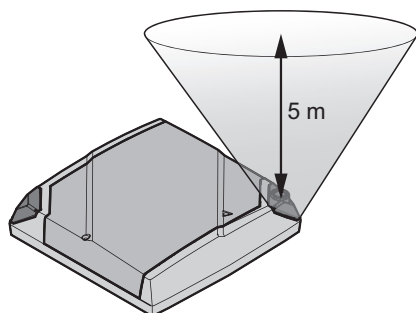With universal mounting plate and transformer

- 230 VAC

Radiation

A

B

C

Fig. 4   Localisation marker radiation

A   Low frequency
B   Infrared
C   Motion sensor

2. Wall and ceiling mounting

Localisation marker position

The choice of type of power supply and position of the device are defined by the installation plan depending on the construction and configuration of the building and the rooms to be equipped.

▶ Consult the installation plan.
▶ Consult the optional tag stuck to the back of the localisation marker which specifies the installation point.

The localisation marker can be installed:

- in a passageway, on the wall, e.g. near a door
- in a room, high on a wall or on the ceiling to verify the person's presence
- in an area, e.g. a cafeteria. Several localisation markers are placed on the ceiling to know who is in the cafeteria.
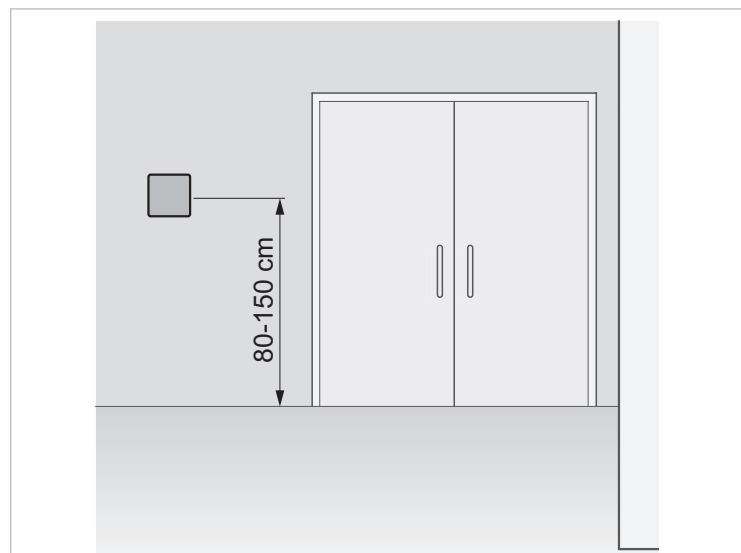- with a ground loop, to cover a greater area (e.g. a parking exit)

Height of installation

Fig. 5   Height of installation

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Types of installation

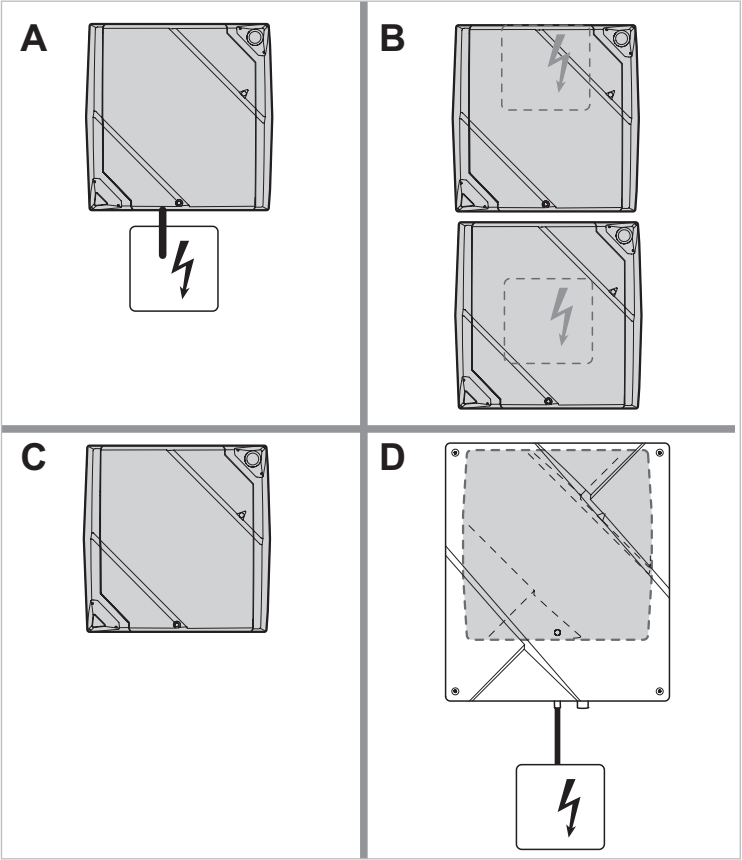|	
⚠️ CAUTION	Risk of localisation malfunction! ▶ It is imperative that the installation location of the localisation marker specified in the installation plan is adhered to in order to ensure the function of the system.

Fig. 6   Installing the device and routing the power supply cable

A   Wall mounting near an electric socket
B   Mounting on a recessed box
C   Free mounting (battery operated)
D   Installation with IP65 dust and waterproof kit (see separate user documentation)

Installation examples
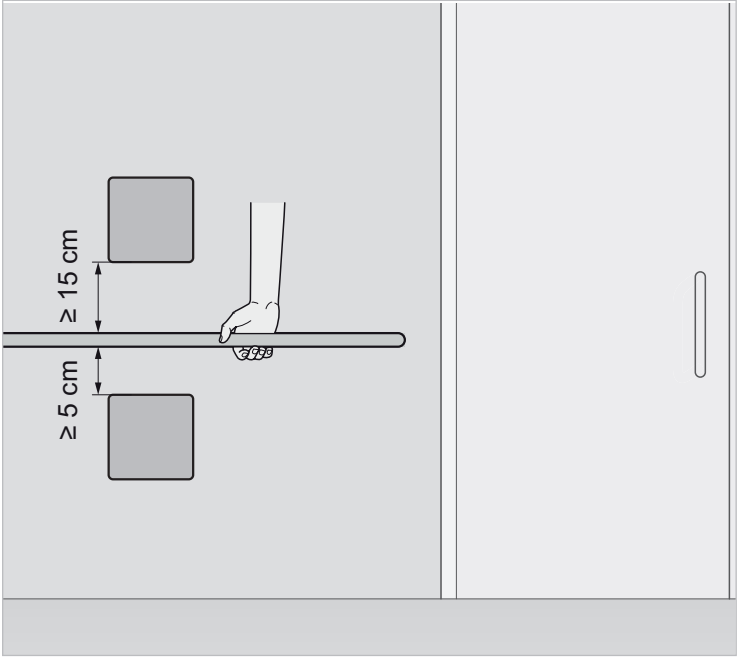
Installation near a handrail

Fig. 7   Installation near a handrail

i	▶ Ensure that a space of about 15 cm is left between the localisation marker and e.g. a handrail.

Installation in a room

The localisation marker is placed opposite the entrance door so that the motion sensor can detect the person entering and leaving the room.
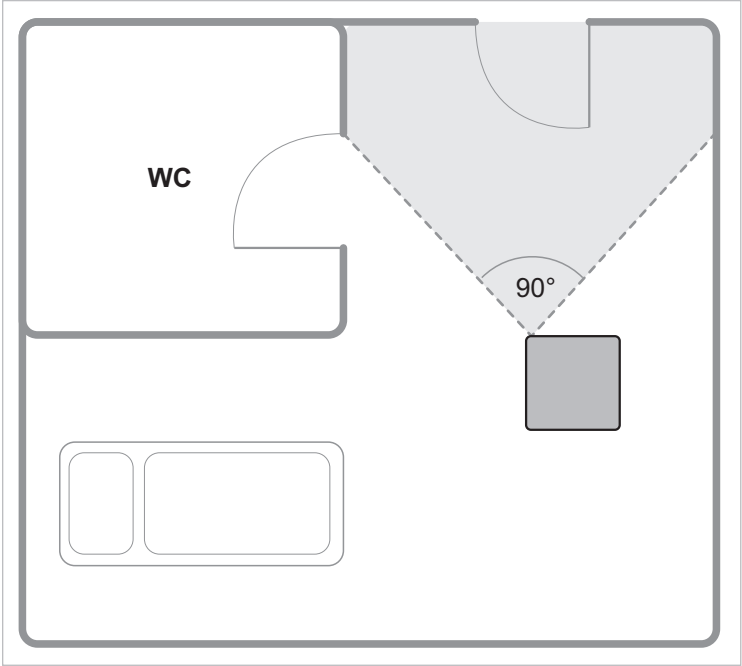

Fig. 8   Typical position of a marker in a room

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Installation in a corridor

Two localisation markers are placed on the ceiling so that the motion sensor can detect when the person enters and leaves an area.
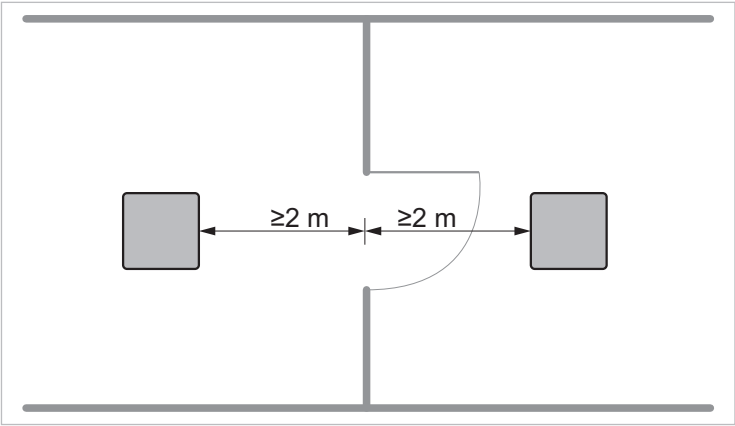

Fig. 9   Typical positions of a marker in a corridor

Orientation of the corners

It is possible to rotate the localisation marker's detection corners to adjust the motion sensor axis.

i	Configuration changes must be made by a SmartLiberty engineer.

Depending on the placement of the marker, a second motion sensor corner can be added.

⚠ CAUTION	Risk of damaging the device! ▶ Do not rotate the motion sensor corners by more than 90°.

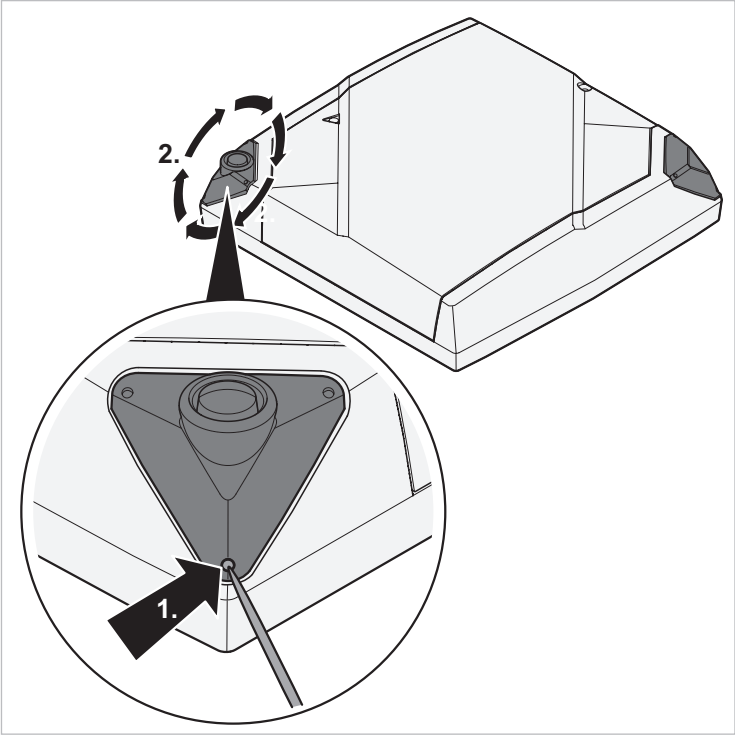▶ Press using a pointed object and rotate the corner.

Fig. 10 Rotating the corners

Position of the mounting plate

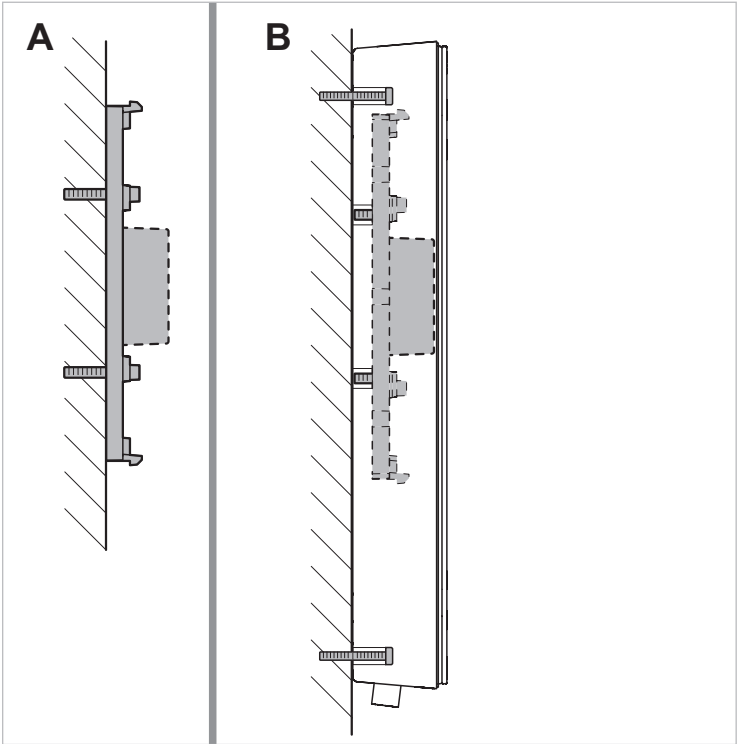The universal mounting plate is adapted to all types of installation:

Fig. 11 Types of installation

A   Mounting on the wall
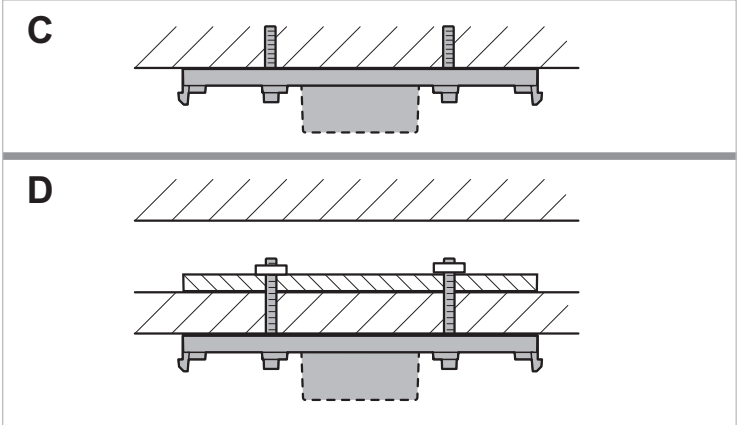B   Installing with IP65 dust and waterproof kit (see separate user documentation)

Fig. 12 Types of installation

C   Mounting on the ceiling
D   Mounting on drop ceiling with counterplate or 2 universal mounting plates, one on top of the other

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The universal mounting plate can be mounted on the wall or on different types of recessed boxes or plug sockets.

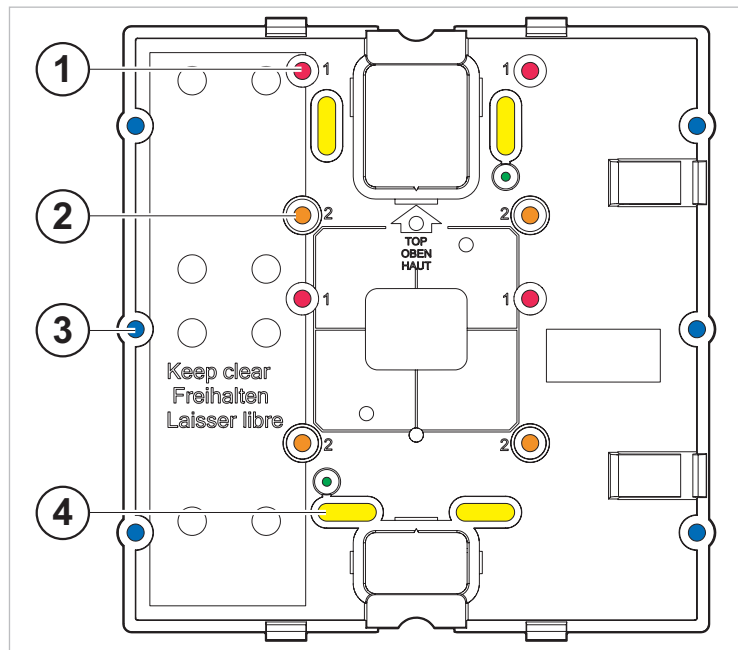*Fig. 13 Screw holes for the universal mounting plate*

1 Offset on recessed box CH
2 Centred on recessed box CH
3 On generic recessed box
4 Free

⚠ CAUTION	Risk of malfunction from interference! ▸ Do not install the localisation marker on metal (e.g. metal doors) or near electrical devices (e.g. lamps).

1. Mount the universal mounting plate at least 50 cm from any other electrical device or metal element.
2. Provide enough space around the universal mounting plate for installation of the housing.
   See Fig. 14 for dimensions.

Fig. 14 Free space around the mounting plate.

3. Place the plate in the direction of the cable feed axis. Align the universal mounting plate vertically using the two notch marks.
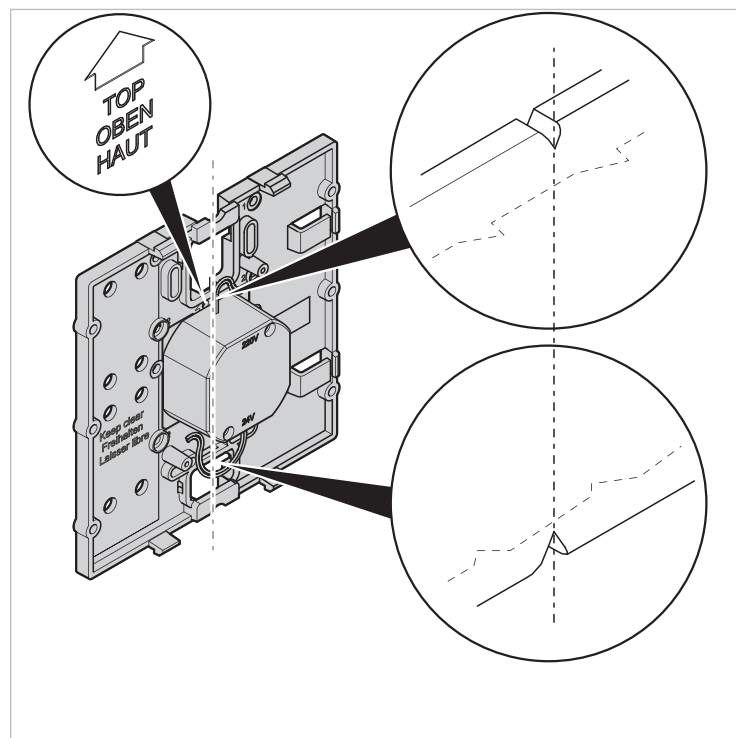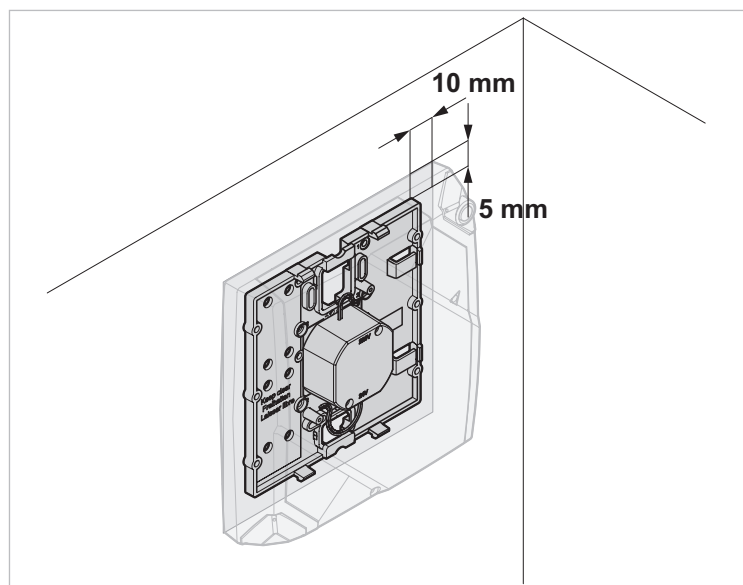

Fig. 15 Notch marks for vertical alignment

Mounting the universal mounting plate

1. If necessary, route the electric cable through the universal mounting plate from a plug socket.

i	Provide a length of cable of about 30 cm for the installation of the localisation marker.

2. Attach the universal mounting plate with at least 4 screws depending on the type of installation selected (Fig. 11 and Fig. 12).

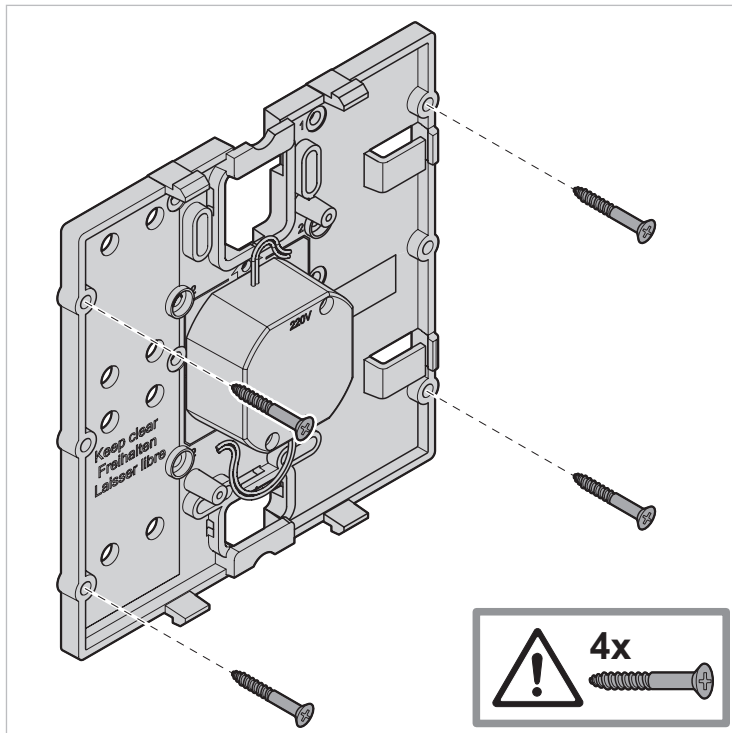| ⚠ CAUTION	Risk of tearing off! ▶ Mounting the mounting plate with 4 screws so as to ensure the security of the installation.

Fig. 16 Mounting the mounting plate

3. To screw the universal mounting plate on a drop ceiling (D, Fig. 12):
   – Use a mounting bracket.
   or
   – Mount two mounting plates one on top of the other with the drop ceiling sandwiched between them.

Installing the housing

1. If necessary, connect the electric cable to the 230 V cable from the mounting plate transformer (e.g. with a domino connector).
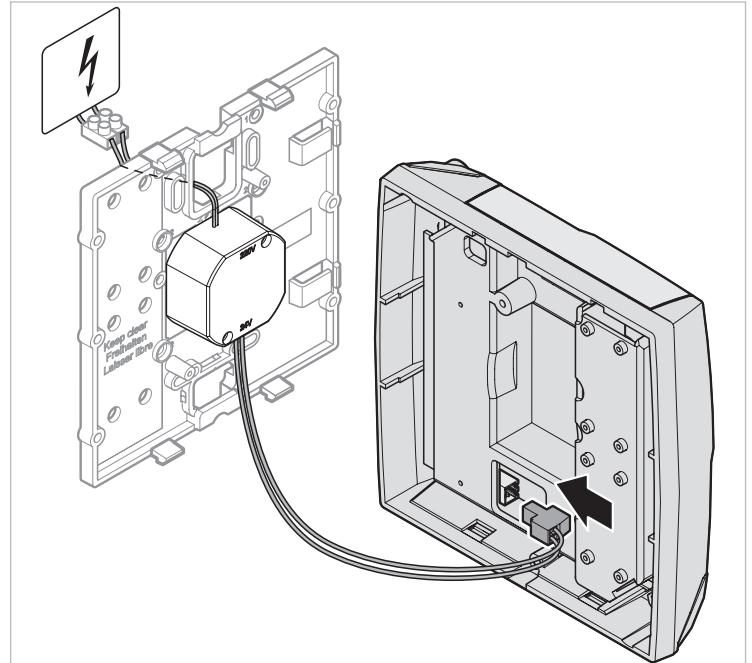2. If necessary, connect the 24 VDC cable on the localisation marker.

Fig. 17 Connecting the 230 VAC and 24 VDC cables

3. Collect any excess length of cable(s) in the shelf on the back of the localisation marker.

i	• The screw visible on the lid must be situated at the bottom once the housing is mounted on the wall. • The "top" markings on the base of the localisation marker and on the universal mounting plate must be facing each other.

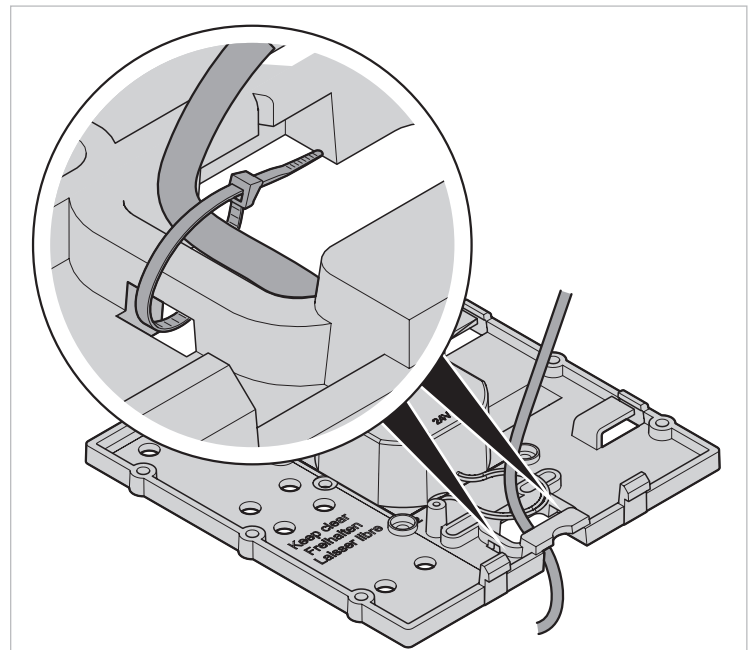4. Use the cable ties to attach the cable(s) to the universal mounting plate.

Fig. 18 Attaching the cable(s) to the universal mounting plate

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5. When installing with visible cabling, break the cut-out on the top and/or the bottom of the housing using a pliers to pass the cable(s) through.
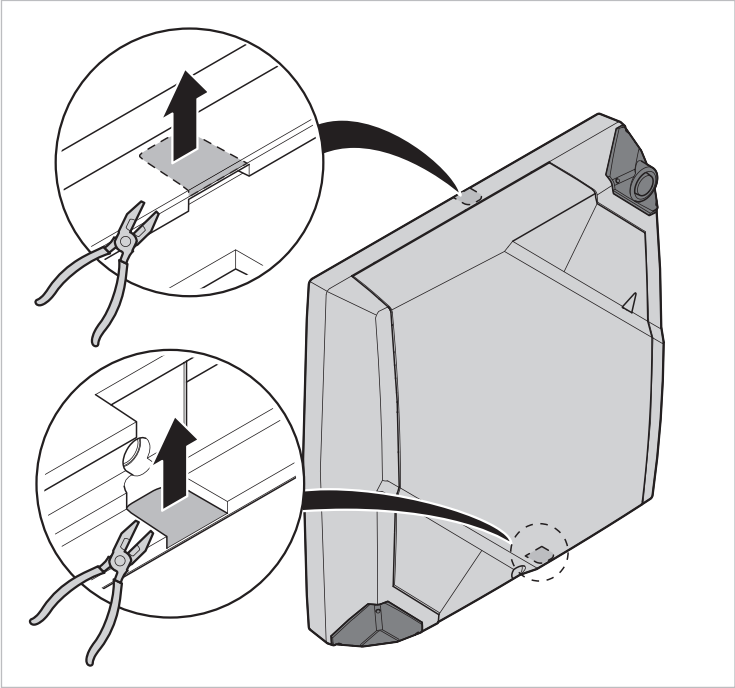

Fig. 19 Cable entry

6. Press the localisation marker onto the universal mounting plate.

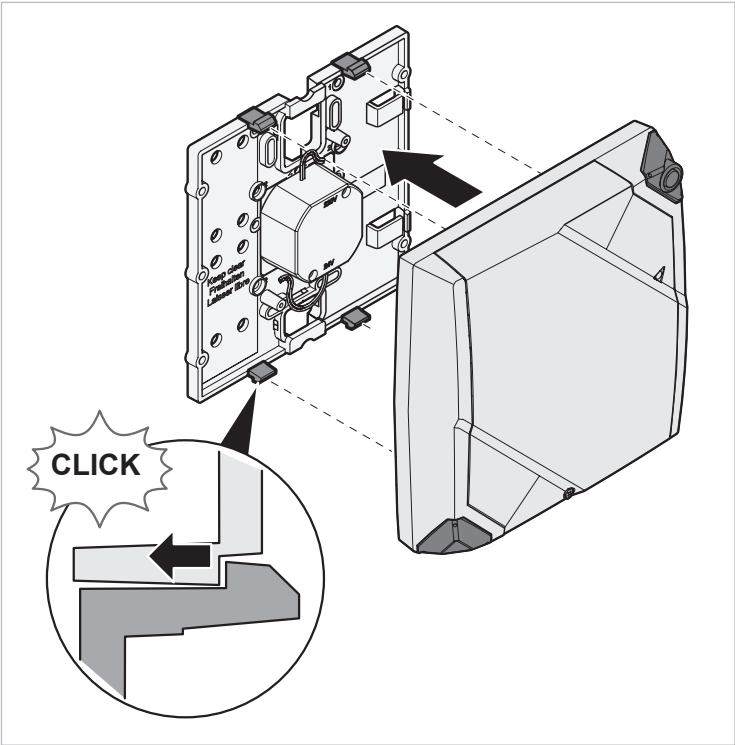| i	The 4 latching tabs of the mounting plate must all be present and in a good condition to ensure that the localisation marker has a proper hold!

CLICK

Fig. 20 Attaching the localisation marker onto the universal mounting plate

3. Installing a ground loop

Installing the localisation marker as a ground loop allows for the detection of passage across the zone delimitated by the loop.

⚠ CAUTION	Risk of malfunction! ▶ Carefully follow the installation plan for mounting with ground loop and instructions of the SmartLiberty technician.

⚠ CAUTION	Danger of incorrect locations and false alarms! ▶ Use only 230 VAC for the power supply.

i	• The electronics housing must be as close as possible to the loop with the cables as tight as possible. • The cable must not curve by more than 45°. • The depth in the ground must not exceed 20 cm.

i	▶ Do not install the loop beneath reinforced concrete or beneath underfloor heating. ▶ Do not use a metal tube to pass the PUR-PUR cable. ▶ Do not use two tubes to guide the PUR-PUR cable to the electronics housing. ▶ Do not pass power cables in the same tube as the PUR-PUR cable.

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1. Install the localisation marker at a height of no more than 30 cm.

2. Lay cable type PUR-PUR 3x1.5 mm^2 as ground loop.

The electronics housing must be as close as possible to the loop with the loop cables as tight as possible, as illustrated below:
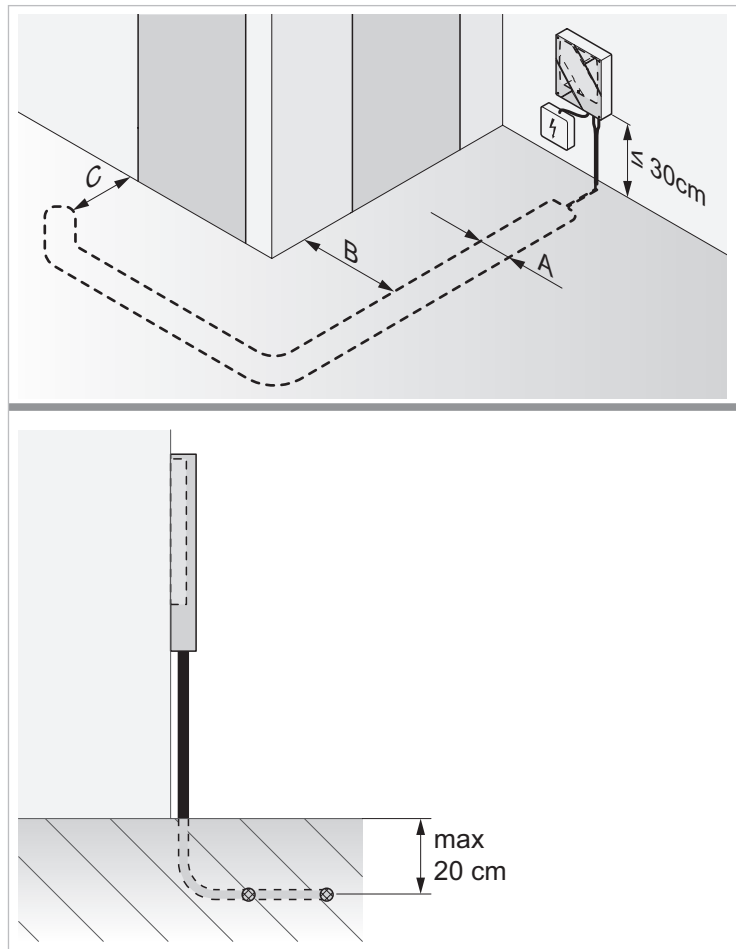

Fig. 21 Ground loop

A Distance between the two cables: 50 cm +/-2 cm
B Distance to the wall or area to be covered. Specified by a detailed plan or suggestions by SmartLiberty.
C Same as B

3. Connect the ground loop cable to the ground loop connector (to be done by a technician).
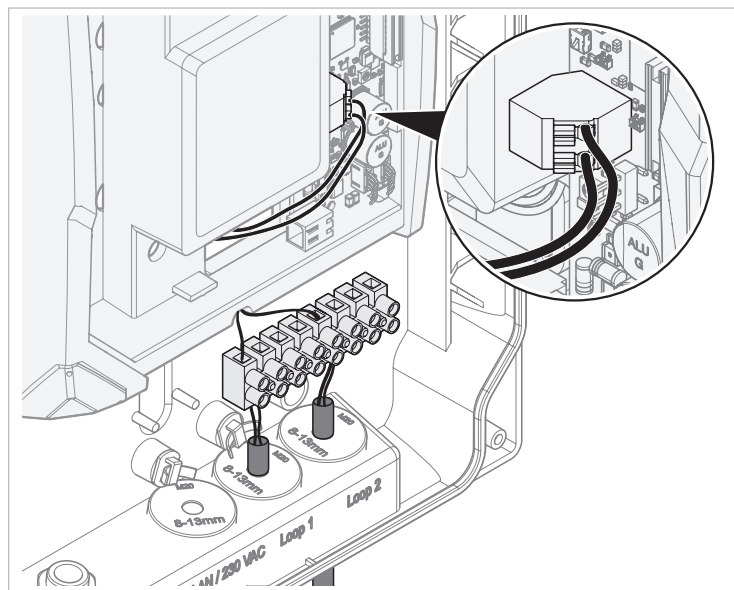

Fig. 22 Connecting the loop to the localisation marker
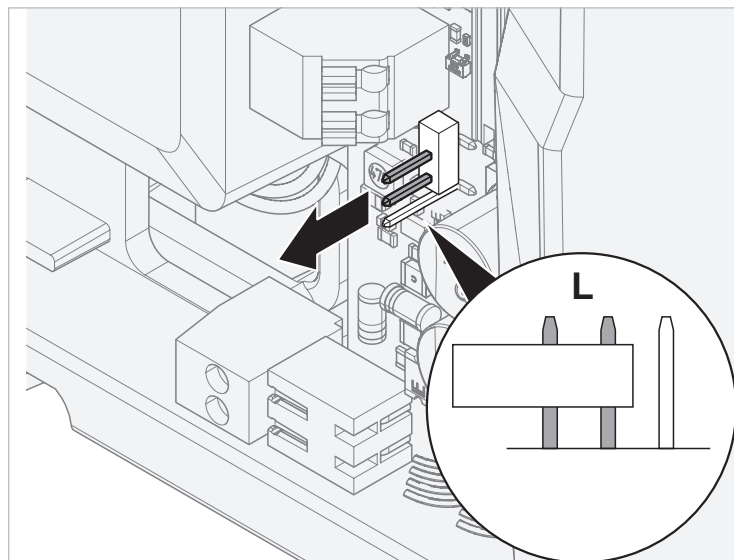
4. Shift the jumper into the L position.

Fig. 23 Shifting the jumper

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4. LF cut-off

The LF cut-off is a small circuit board that can be installed in the localisation marker to activate or deactivate the marker's LF field when a contact is made. It is usually used next to a door so that the alarm is only activated when the door is open. This helps to avoid false alarms when an unauthorised resident approaches the door but does not attempt to open it.

Installation

The LF cut-off is equipped with two contacts (1) on one side. On the other side is the connector (2) for connection to the localisation marker.
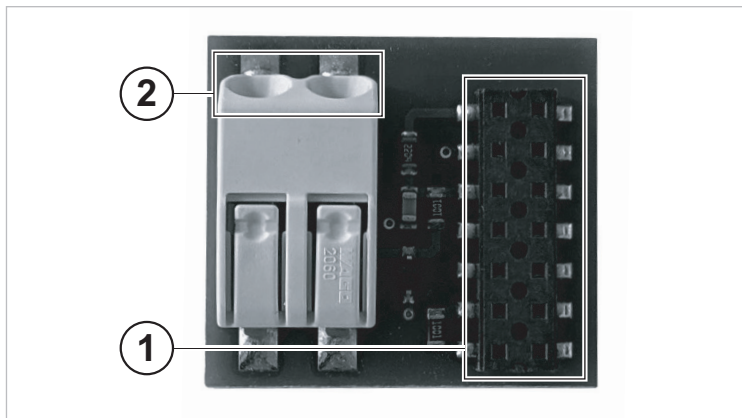
Fig. 24 LF cut-off

1 Contacts
2 Connector

Mounting in the localisation marker

▶ Place the board (1) in the localisation marker with the holes (2) on the pins (3).

> **i**   Inserting the board in the intended place requires a careful approach.
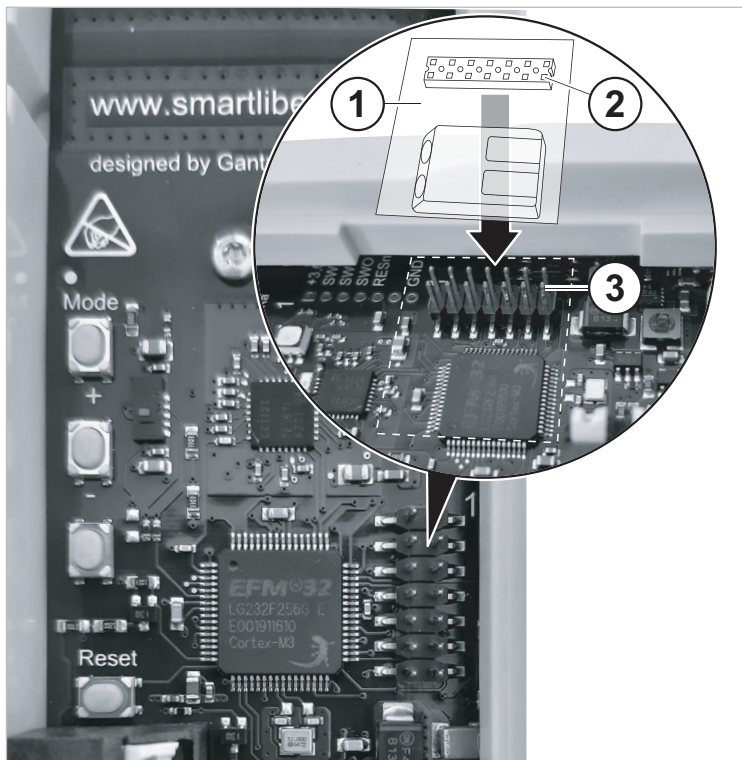
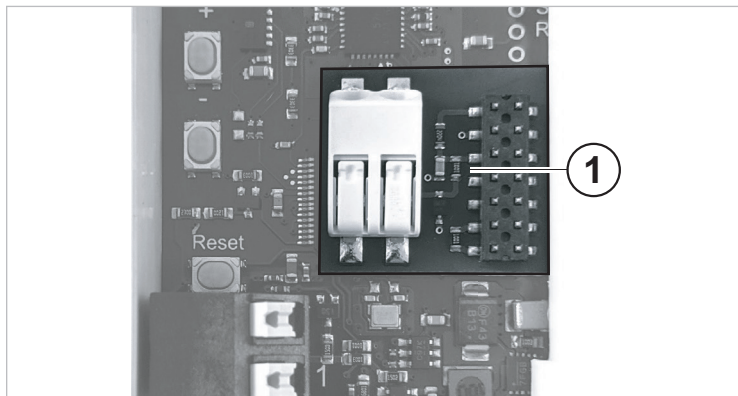*Fig. 25 Inserting the LF cut-off into the localisation marker*

Fig. 26 LF cut-off inserted in the localisation marker

Cabling

The board supports only one contact, so polarity does not need to be considered when connecting the cables.

Configuration

After mounting, the LF cut-off must be configured.

1. Check box to enable use and configuration in the software.
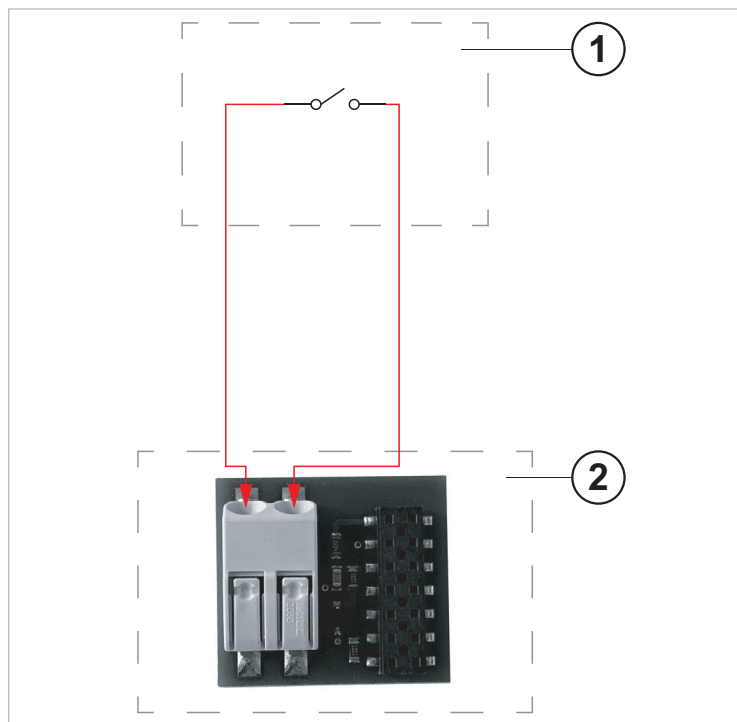
Fig. 27 Configuring LF cut-off

1 Door contact
2 Localisation marker

5. Putting into service

The localisation marker will start as soon as it is powered (230 VAC, 24 VDC or battery).

6. Uninstalling

- The localisation marker must be opened in order to:
  - change the battery
  - put it into test mode
  - manually adjust the range (also possible by radio)
  - insert the anti-vandalism screws.
- ▶ See the software manual.
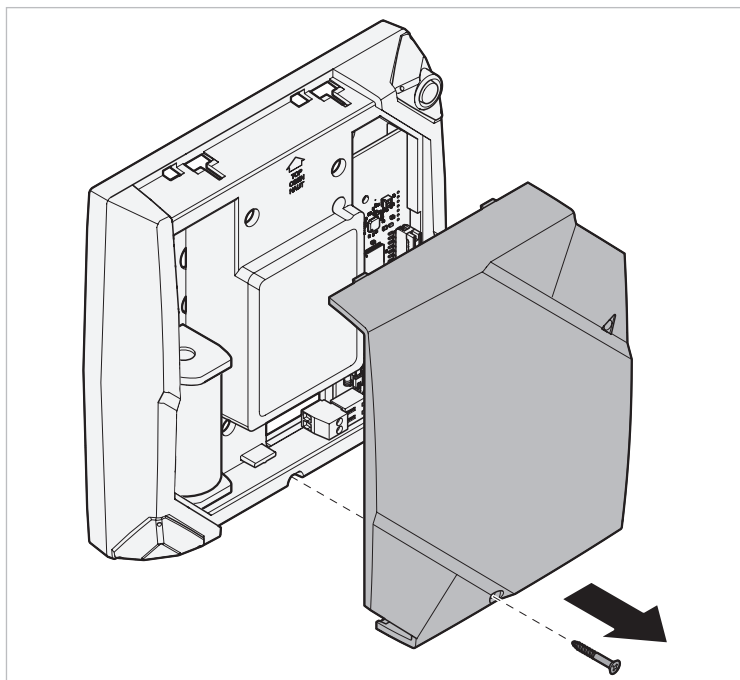- ▶ Use a Torx T 10 screwdriver to unscrew the cover.

Fig. 28 Opening the localisation marker

Anti-vandalism attachment

1. 2 M3x20 mm screws can be installed to reinforce the attachment of the localisation marker to the universal mounting plate.
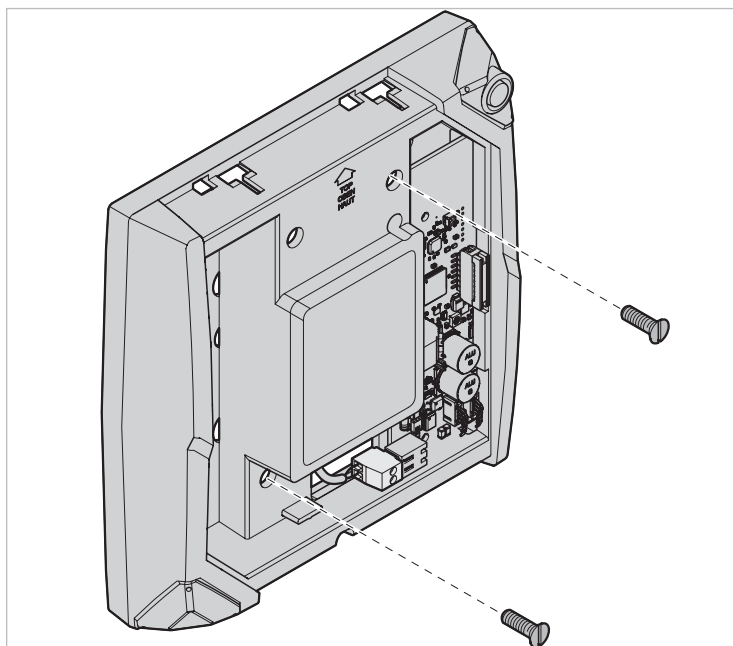
Fig. 29 Anti-vandalism attachment

2. To detach the base of the localisation marker from the universal mounting plate: Unscrew the two anti-vandalism screws and use a screwdriver to lever the latching tabs.
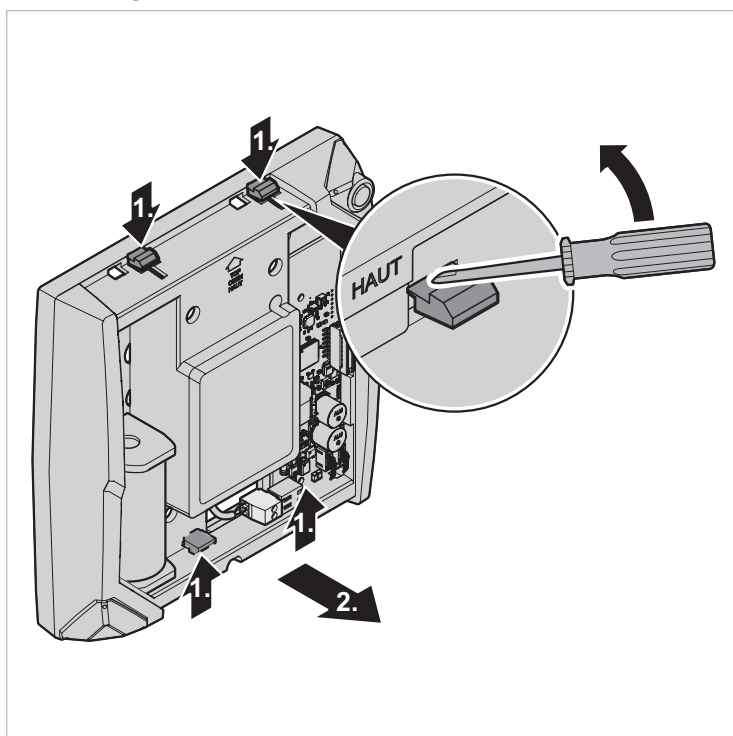
Fig. 30 Detaching the localisation marker from the universal mounting plate

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7. Maintenance

Alarms

The indicator light (LED) is OFF by default.

Problem *Display*	Possible cause ▶ Resolution of problem
No communication *LED lights up red*	Communication with the RF reader or with the server is impossible. ▶ Call the support service.
No power *LED lights up blue*	The 230 V or 24 V power supply is interrupted. The localisation marker will go into battery mode. ▶ Call the support service.
Battery low *LED lights up blue*	The battery is low. ▶ Change the battery.
Antenna error *LED lights up blue*	The ground loop is interrupted. ▶ Call the support service.
Vandalism *LED lights up blue*	The cover/device has been opened/pulled off. ▶ Close the cover.

Cleaning

▶ Use a conventional cleaning product without acetone.

Replacing the battery

⚠️ CAUTION	Risk of malfunction! ▶ Only use certified battery types.

- The localisation marker works with a special 3.6 V lithium battery.
- When the localisation marker is connected to the mains, the battery remains in the device as a back-up power supply.

1. Open the localisation marker.
   See Fig. 28.
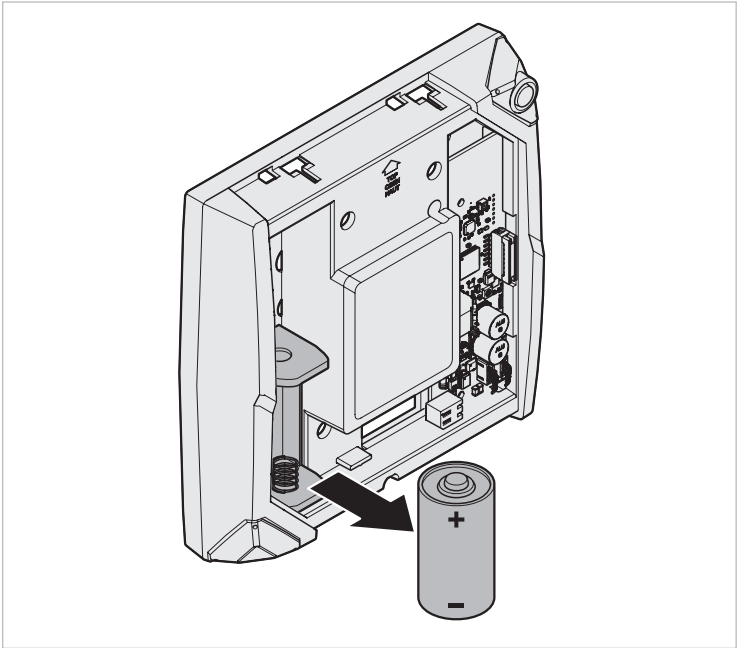
2. Remove the used battery.

Fig. 31 Removing the battery
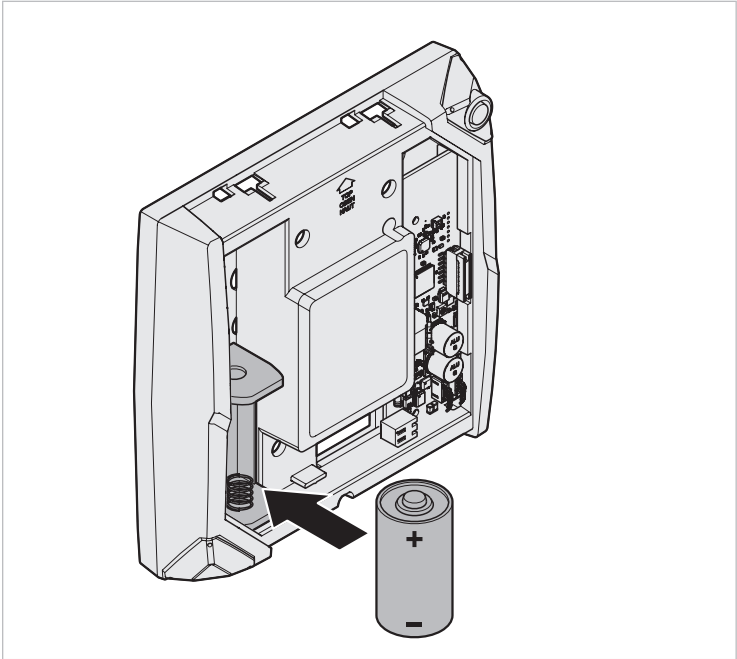
3. Place a new battery in the battery compartment.

Fig. 32 Inserting the battery

4. Close localisation marker.

8. Disposal

 Directive DEEE 2012/19/CE on electrical and electronic equipment waste

- ▶ Dispose of the package and the end-of-life product in an appropriate recycling facility.
- ▶ Do not discard the product with household waste.
- ▶ Do not burn the product.
- ▶ Remove the battery.
- ▶ Recycle the battery in compliance with legal requirements and do not discard with household waste.

CE