



**CARLO GAVAZZI**



Quick start guide

# **LEYON-Safe-E**

## **Door safety sensor**

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# LEYON-Safe-E door safety sensor quick start

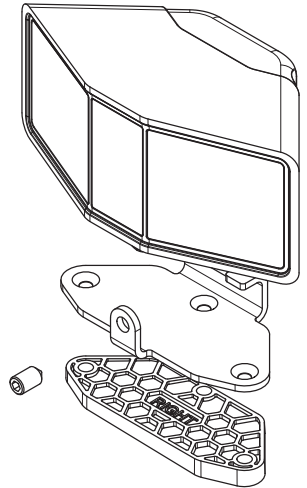
This manual is a reference guide for Carlo Gavazzi door safety sensor LEYON-Safe-E. It describes how to install, setup and use the product for its intended use. Translated versions of this quick start guide available via QR code, see last page.

## 1. Physical installation

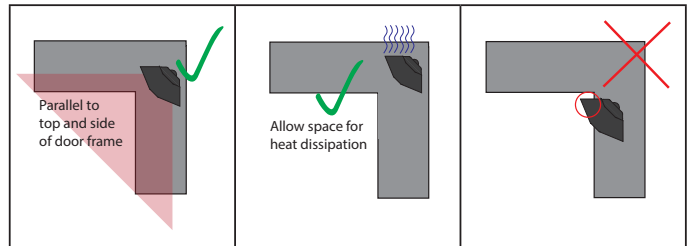
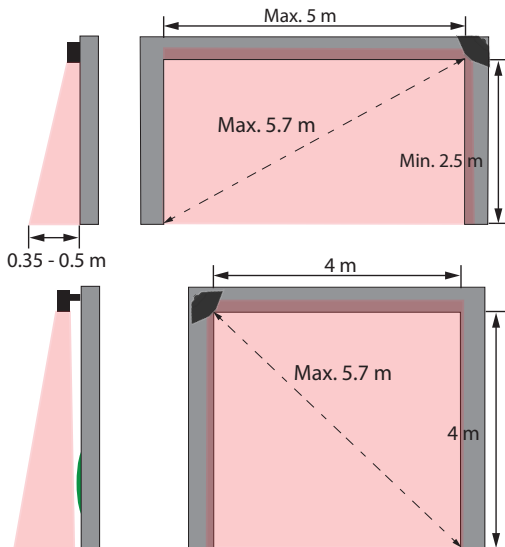
Box contents: LEYON-Safe-E sensor with 10 m cable, spacer, mounting bracket with front screw, stickers with QR code for Wi-Fi connection and web app, quick start guide that includes drill template

Other materials: Ladder or lift, level, measuring tape, drill and drill bit appropriate for the door frame, screwdriver and 3x DIN7991 M5 screws, Allen key to access DIP-switches

1. Choose the mounting position of the sensor on the top-left or top-right of the door, at a minimum height of 2.5 m to fulfill the requirements for the door norm
2. Set up a safe method of accessing the mounting location
3. Ensure the view from the intended placement is unobstructed
4. Use drill template to drill holes for the installation.
5. Install spacer and bracket, making sure that the spacer is in the left/right printed on it, showing the correct orientation for installation on the left/right of the door
6. If DIP-switches need adjusting, do this now. See section 4
7. Dock the sensor in the bracket and secure it with the front screw
8. Peel off protective plastic from front glass
9. Secure cable routing to door controller
10. Mount the QR code stickers on the sensor cable or near the door controller inside the control panel



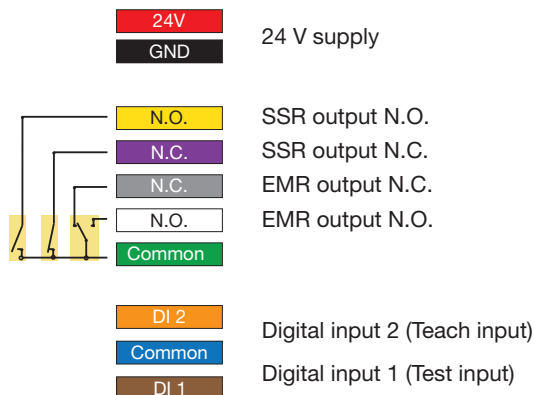
**Notice:** If the door could protrude from the plane of the door frame, the sensor must be mounted sufficiently far out from the door frame that the door does not enter the safety zone.



## 2. Connecting

1. Power off installation
2. Connect sensor supply wires (**RED** and **BLACK** wires) to door controller. Make sure the door controller can supply 24 V and 20 W
3. Connect detection N.C. output wires (**GREY** and **GREEN** relay output) to input of door controller depending on controller logic
4. Connect test input wires (**BROWN** and **BLUE**) to door controller
5. Ensure unused wires do not cause short circuits, for instance by wrapping them individually
6. Power on installation. 4 LEDs will blink **GREEN** for 5 seconds
7. Upon completing the start-up, 4 LEDs light up **BLUE** showing that the sensor is ready but no teach or set-up sequence has been performed yet
8. Remove all temporary and moving objects from area in front of door
9. Open the door if it is not already open
10. To start Auto-teach, connect 24 VAC/DC to **ORANGE** wire and ground to **BLUE** wire for >1 second, then disconnect
11. 4 LEDs blinking **BLUE** slowly (~1 Hz) indicate Auto-teach procedure in progress. The sensor scans the doorway and its immediate vicinity
12. When all 4 LEDs blink **BLUE** quickly (~4 Hz), close the door. Confirm the door is closed by connecting 24 VAC/DC to **ORANGE** and ground to **BLUE** wire for >1 second, then disconnect
13. All 4 LEDs change to **GREEN** for 5 seconds and then go dark to confirm that the safety zone has been set up correctly and the Auto-teach procedure has been completed successfully
14. The sensor automatically exits Auto-teach procedure and the 4 LEDs light up **GREEN**
15. The sensor is ready to operate in safety mode. 4 **GREEN** LEDs confirm the safety zone is free of objects
16. Verify that the sensor changes state when something enters the safety zone, shown by 4 **RED** LEDs
17. Verify correct sensor function. If all works as expected, the installation is ready for safety inspection. If the installation needs further adjustments, please use web app. Refer to section 3.
18. The Auto-teach procedure can also be performed using the web app instead of the wires.
19. Please refer to the instruction manual for cases not covered by the factory settings

### Wiring diagram



### 3. Advanced set up with web app



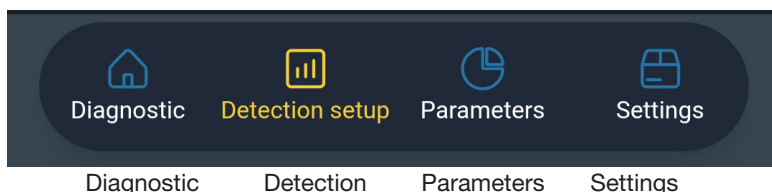
Each sensor has a unique QR code printed on cable flags and stickers. Use web app to set up exclusion zone and safety ceiling as well as fine tuning the safety zone or changing input and output functions. Use the 'Detection' tab to manually set the safety zone and exclusion zones.

The outputs are used for warnings and alarms via the 'Parameters' tab. This is also where OFF-delay or output inverter is located.

For in-depth information, please refer to the manual.



**CAUTION:** In 'Set-up mode', the sensor is not a safety device. Ensure the door is not used. Remember to toggle back to 'Safety mode' after changing settings.



## 4. Settings via DIP-switches and push button

To access the DIP-switches, unscrew the back part using an Allen key.

If sensors are installed in close proximity to each other, for instance one inside and one outside on a door frame, they must be set to different channels to avoid cross talk. The LEYON-Safe-E sensor has 8 channels to chose from, defined by the settings of the first 3 dip switches. The blue background in the figure below indicates factory settings.

### Reset to factory settings

A push button is located just above the DIP-switches, press and hold for 10 seconds to reset sensor to factory settings



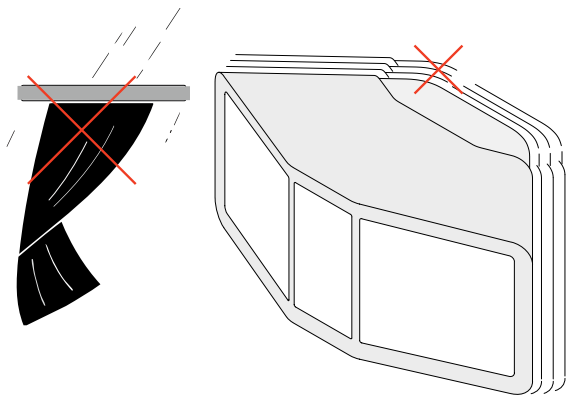
**CAUTION:** The DIP-switches are small and delicate. Use a rounded tip and gentle movements to avoid damage to the sensor.

| IR light modulation frequency |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                   |                                                                                     |                                                                                     |
|-------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Channel                       | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                  | 6                                                                                 | 7                                                                                   | 8                                                                                   |
| DIP 1                         |  |  |  |  |   |  |  |  |
| DIP 2                         |  |  |  |  |   |  |  |  |
| DIP 3                         |  |  |  |  |   |  |  |  |
| Output inverter               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                   |                                                                                     |                                                                                     |
| Output                        | Not inverted                                                                      |                                                                                   |                                                                                   |                                                                                   | Inverted                                                                           |                                                                                   |                                                                                     |                                                                                     |
| DIP 4                         |  |                                                                                   |                                                                                   |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |
| Wi-Fi                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                   |                                                                                     |                                                                                     |
| Wi-Fi                         | Enabled                                                                           |                                                                                   |                                                                                   |                                                                                   | Disabled                                                                           |                                                                                   |                                                                                     |                                                                                     |
| DIP 5                         |  |                                                                                   |                                                                                   |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |
| Not used                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                   |                                                                                     |                                                                                     |
| DIP 6                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                   |                                                                                     |                                                                                     |

## 5. Other written materials

|                                                             |  |                                                             |  |                                                             |  |                                                             |  |
|-------------------------------------------------------------|--|-------------------------------------------------------------|--|-------------------------------------------------------------|--|-------------------------------------------------------------|--|
| Manual                                                      |  | Quick start guide French                                    |  | Quick start guide German                                    |  | Quick start guide Chinese                                   |  |
| <a href="http://cga.pub/?97cf65">http://cga.pub/?97cf65</a> |  | <a href="http://cga.pub/?bf2f87">http://cga.pub/?bf2f87</a> |  | <a href="http://cga.pub/?cd9bf3">http://cga.pub/?cd9bf3</a> |  | <a href="http://cga.pub/?9fd1e1">http://cga.pub/?9fd1e1</a> |  |
| Datasheet                                                   |  | Quick start guide Italian                                   |  | Quick start guide Spanish                                   |  | Quick start guide Danish                                    |  |
| <a href="http://cga.pub/?7edfea">http://cga.pub/?7edfea</a> |  | <a href="http://cga.pub/?ea6e75">http://cga.pub/?ea6e75</a> |  | <a href="http://cga.pub/?41e23c">http://cga.pub/?41e23c</a> |  | <a href="http://cga.pub/?864316">http://cga.pub/?864316</a> |  |

## 6. Laser safety and maintenance



Avoid moving objects in the safety zone

Avoid strong vibrations

Prevent direct impacts

No harsh chemical cleaners

No pressure washing

Do not cover front glass

