SafeScan

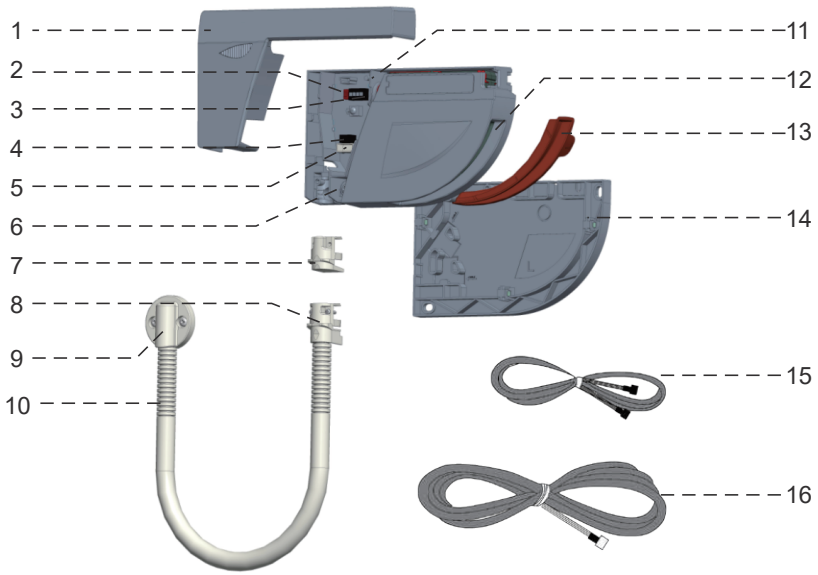
FOR AUTOMATIC SWING DOOR

1 TECHNICAL SPECIFICATIONS

Technology	LASER scanner, time-of-flight measurement
Detection mode	Presence
Max. detection range	4m (diagonal) (i.e. : at W = 1.5m -> max. H = 3.7m)
Opening angle	Door wing safety: 90° / Pinch zone safety: 16°
Angular resolution	Door wing safety: 1.6°/ Pinch zone safety: 0.8°
Typ. min. object size Door wing safety Pinch zone safety	10cm @ 4m (in proportion to object distance, DIP 2 = ON) 2cm @ 4m (in proportion to object distance, DIP 2 = ON)
Testbody	700mm × 300mm × 200mm
Emission characteristic IR LASER	Wavelength 905nm; max. output pulse power 25W; Class 1
Supply voltage	12 - 24V DC ± 15 %
Power consumption	≤ 2W
Response time	Door wing safety: max. 50ms / Pinch zone safety: max. 90ms
Output Max. switching voltage Max. switching current	2 electronic relays (galvanic isolation - polarity free) 42V AC/DC 100mA
LED-signals	1 bi-coloured LED: detection/output status
Dimensions	143mm(L)X86mm(H)X33mm(D)(with mounting bracke)
Material	PC+ABS
Tilt angles	+2°~+10°(without mounting bracket)
Protection degree	IP54
Temperature range	-30℃~+60℃(if powered)
Humidity	0~95%，non-condensing
Vibrations	< 2 G
Min. door wing speed	2°/sec

2 DESCRIPTION

1.cover
2.push button
3.DIP-switch
4.master-slave connector
5.main connector
6.angle adjustment screw
7.plug
8.clamp
9.cap and screws (flexible kit)
10.flexible tube
11.lock screw
12.laser window
13.laser window protection
14.mounting base
15.master-slave cable
16.power cable

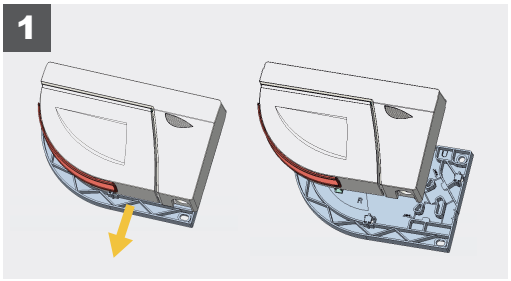


LED-SIGNALS

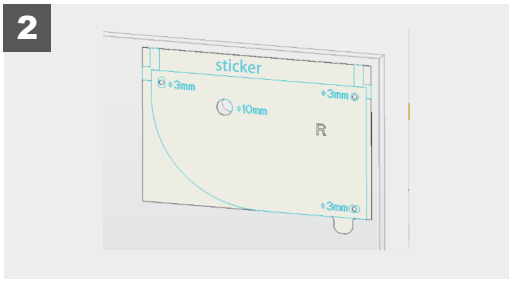
Relay 1	Relay 2	Calculation in progress Exit the zone and wait	LED flashes
LED flashes x times	LED flashes red-green	LED flashes slowly	LED flashes quickly	LED is off

3 MOUNTING

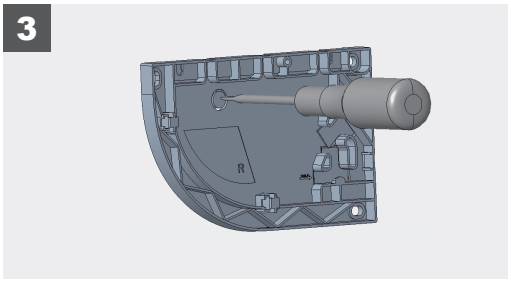
For optimum safety, install 1 module on each door wing side and interconnect them via the master-slave cable.Make sure the sensor does not interfere with door movement when installing the base. If the installation position is not accurate, the sensor may be crushed when opening the door.



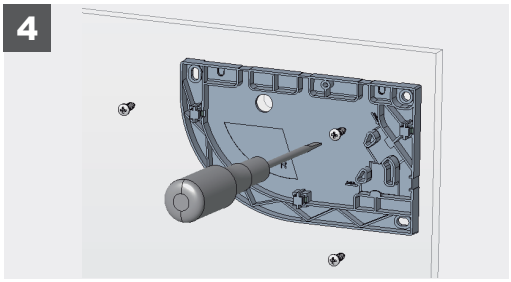
1.Slide the base off the sensor module.



2.Use the installation sticker to drill 3 φ3mm holes and 1 φ10mm on the door. After drilling, peel off the sticker.

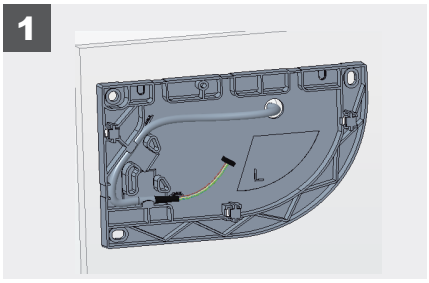


3.Pierce the easy-punch hole with a screwdriver.

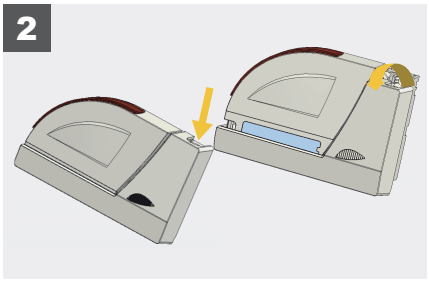


4.Fasten the 3 screws using a screwdriver.
The base needs to be fixed firmly.

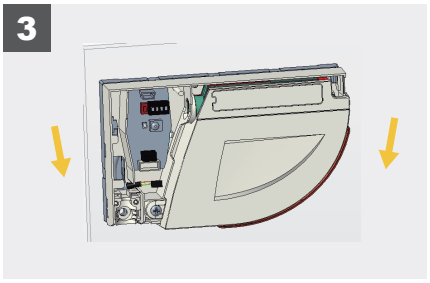
Slave Module



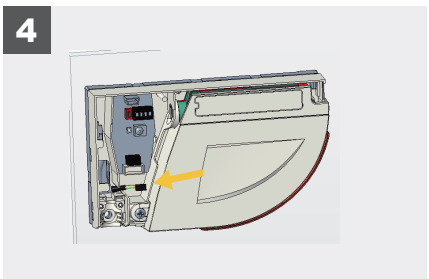
1.Take the master-slave cable and pass it through the hole. Position the cable in the notch of the base and make sure it is firmly fixed.



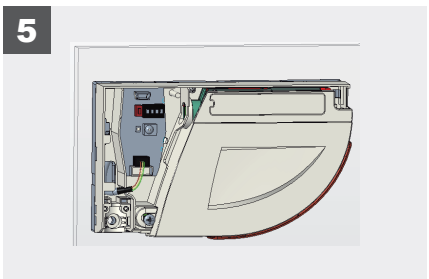
2.Remove the cover: put your finger in the hole and pull firmly towards you in one go.



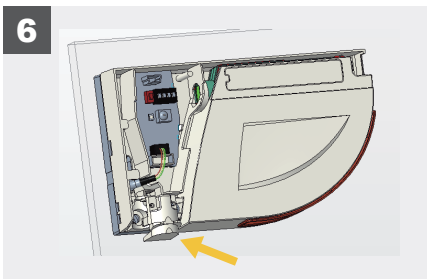
3.Pass the cable through the hole on the back of the sensor and fasten the sensor on the base by sliding it downwards.



4.Connect the black plug to the black connector.

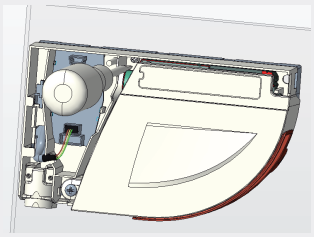


5.Make sure that all wires are safely tucked within the notch to avoid crushing them with the cover.



6.Close the sensor which will not be connected to the door controller using a plug.

7

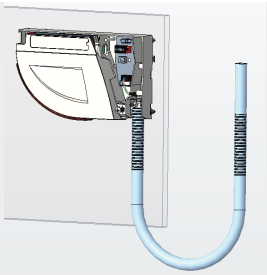


7.Fasten the lock screw firmly in order to avoid vibrations during the door movement.

4 WIRING

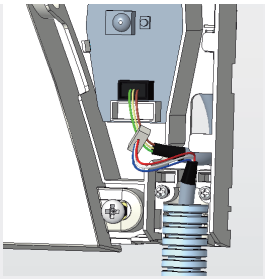
Master Module (connected to door control unit)

1



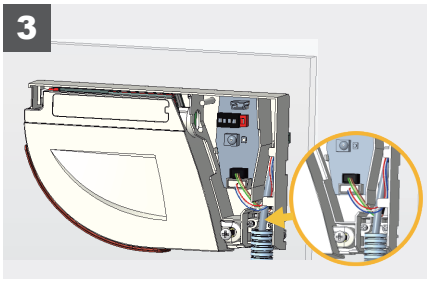
1.Take the flexible tube and determine how long it should be in order to reach the door controller. Cut the surplus to avoid undesired detections caused by the flexible tube.

2



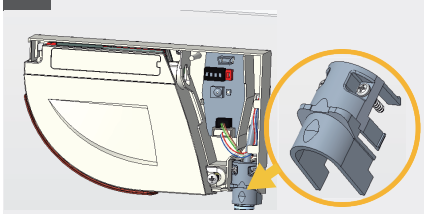
2.Pass the power cable through the flexible tube. Connect the white plug to the white connector.

3



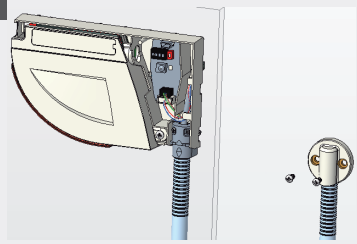
3.Make a loop with the wires of the power cable and pass them through the notch as indicated. Use the other part of the cable to block the wires.

4



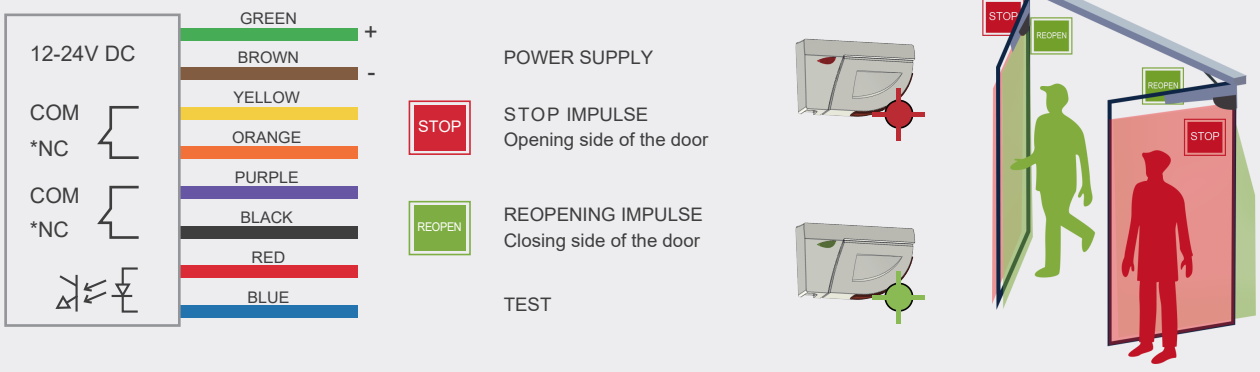
4.Take the clamp to fix the flexible tube to the sensor. Fasten the 2 screws firmly in order to avoid pulling out the cable.

5



5.Tighten the other side of the flexible tube using the cable cap and pass through the rest of the power cable towards the door controller.

6



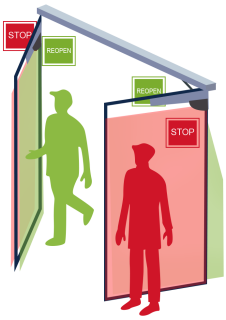
*Output status when sensor is operational.

5 DIP-SWITCH 1

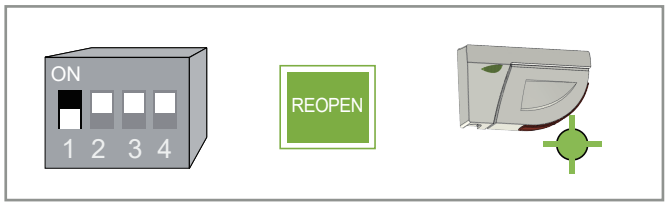
Make sure the setting of DIP 1 is correct on all modules according to the door side

ON

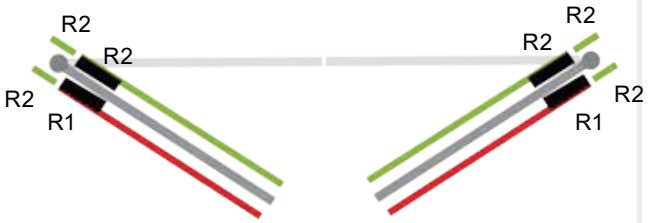
RELAY 1: STOP-impuls on the opening side of the door

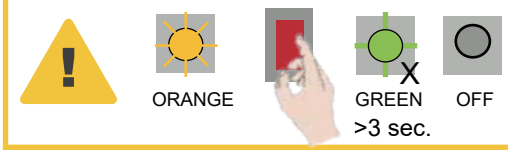


OFF



RELAY 2:REOPENING-impuls on the closing side of the door





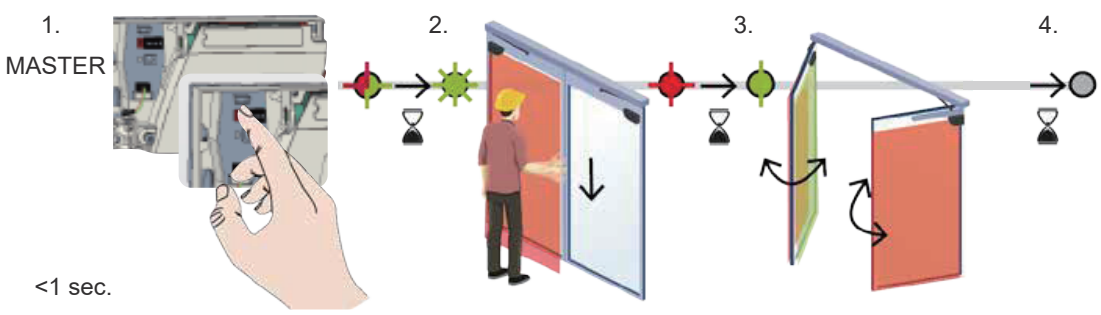
After changing a DIP-switch, the orange LED flashes. A long push on the push button confirms the settings.

6 TEACH-IN

Before launching a teach-in, make sure that.
-the door is closed (use the service mode if needed, see page 5)

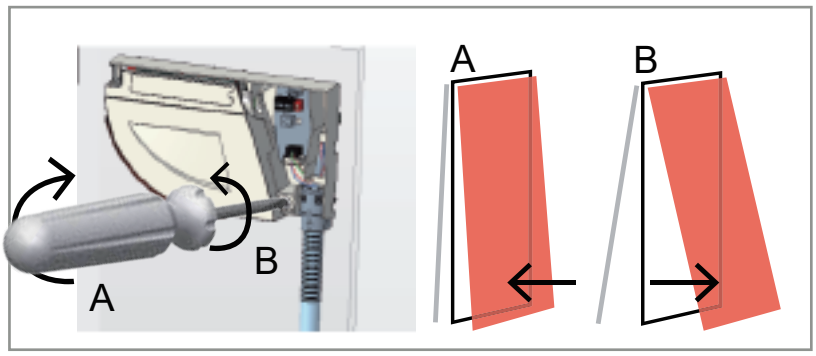
1.To proceed self-leaming, short press the button of the module, the LED start flashing red-green.
2.Wait until the LED fiashes green, make a downward movement on the closed edge of the door, to define the boundaries of the detection area. When calculating the width of the door fan, the LED will flash red.
3.When the LED flashes green again, be sure to stand outside the detection area. And trigger the door opening so that the sensor learns the environment.
4.Flashing green LED turns off, self-learning succeed.
* If yellow LED flashes continuously, means module failure.

NOTE:
1、The master & slave module can be used individually or used by master-slave connection.
(The master learning will be synchronized to the slave.)
2、The slave module can procced learning independently, but the learning won't affect the master module.
3、To make sure the door width parameters correct, proceed the master learning first then proceed the slave learning again.



7 TESTING AND ADJUSTING

Check the correct positioning of the safety fields by placing an object in the detection field.

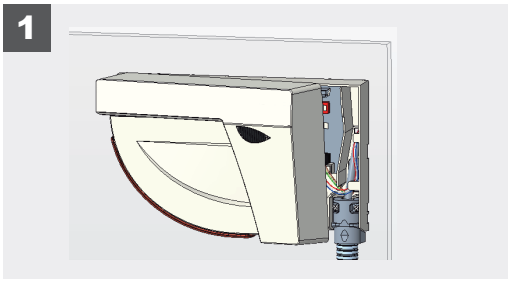


If necessary, adjust the tilt angle of the laser curtain by turning the tilt angle adjustment screw (from 2°to 10°).

After changing the angle, the sensor position or the environment, always launch a teach-in and test the correct positioning of the detection fields.

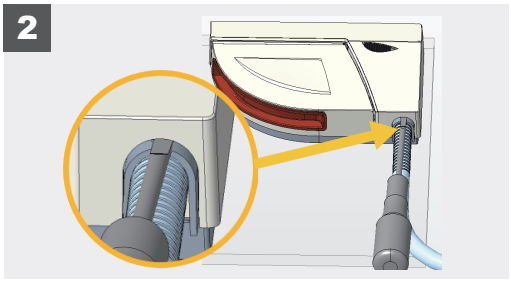
8 FINAL STEPS

1



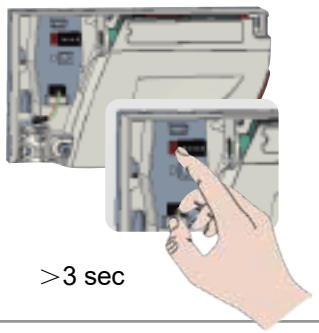
1.Closing the cover starting on narrower left side first, buckle the buckle, and then press the right side firmly to fasten the cover.

2



2.To open the sensor again, position a screwdriver in the notch and pull upwards until the cover comes loose.

SERVICE MODE

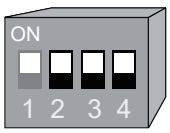


The service mode deactivates the safety detection during 15 minutes and can be useful during an installation, a mechanical teach-in of the door or maintenance work.

To enter the service mode, push on the button for at least 3 seconds.
When the sensor is in service mode, the LED is off.
To exit the service mode, push again for at least 3 seconds

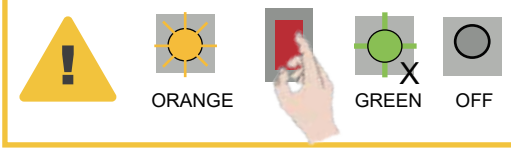
The service mode is deactivated automatically when launching a teach-in.

DIP-SWITCH SETTINGS (OPTIONAL)



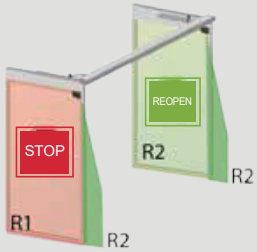
		ON	OFF	
DIP 2	ENVIRONMENT	standard	critical*	Switch to CRITICALwhen external disturbances are likely to cause unwanted detections (min.obi size.immunity and uncovered zone are increased).
DIP 3				
DIP 4	PINCH ZONE	on	off	Switch to OFF when the hinge area does not need to be secured and objects can cause unwanted detections.

* Make a risk analysis to check if the environment requires an additional mechanical protection in the hinge area.

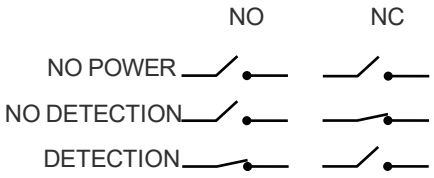


After changing a DIP-switch, the orange LED flashes. A LONG push on the push button confirms the settings.

OUTPUT CONFIGURATION



		1	2	3	4
STOP	R1	NO	NC	NC	NO
REOPEN	R2	NC	NO	NC	NO



NO = normally open
NC = normally closed

MMUNITY FILTER

1	2	3	4	5	6	7	8	9
low	>	>	>	>	>	>	>	high

Increase to filter out external disturbances.

DIP 2 = ON

The reaction time increases significantly between value 5 and 9.

UNCOVERED ZONE

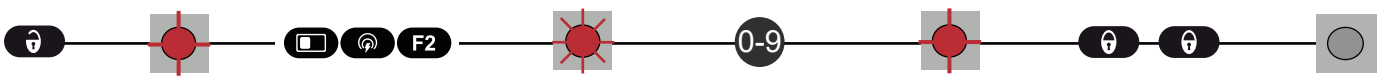
F2	1	2	3	4	5	6	7	8	9	
	2	4	6	8	10	12	14	16	18	cm*

Increase in case of snow, dead leaves, etc.
*measured in specific conditions and dependant on application and installation.

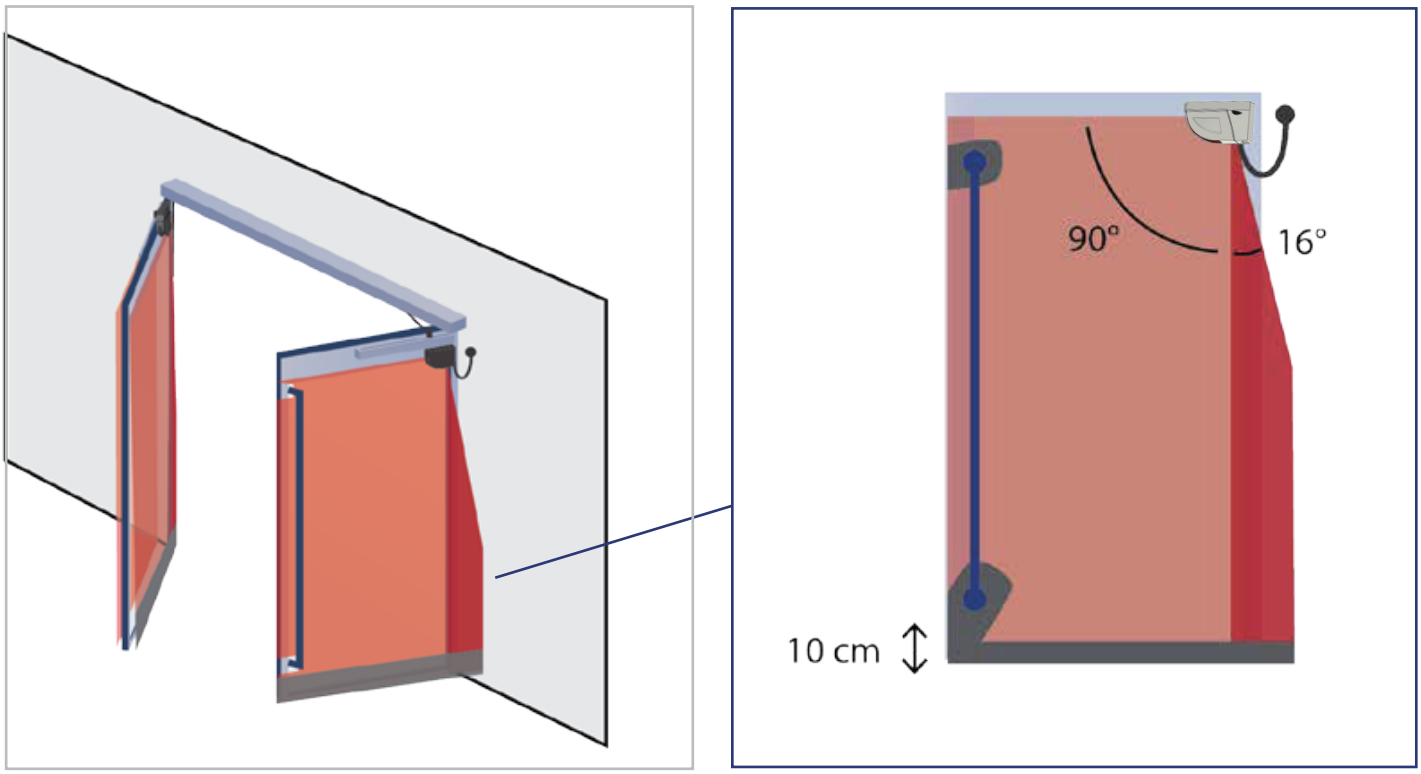
DIP 2 = ON

HOW TO USE THE REMOTE CONTROL

ADJUSTING ONE OR MORE PARAMETERS



DETECTION FIELDS



DOOR WING SAFETY
Typ. object size: 10 cm at 4 m

PINCH ZONE SAFETY
Typ. object size: 2 cm at 4 m

UNCOVERED ZONE
Adjustable by remote control
factory value: 10 cm