BIRCHER
Reglomat
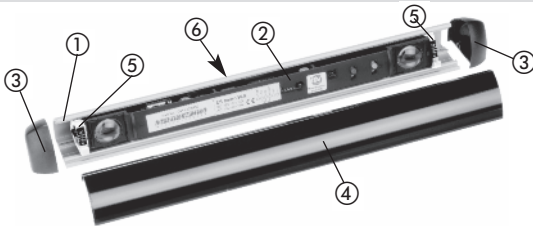
UniScan

Testable surface sensor for moving operation on automatic door systems
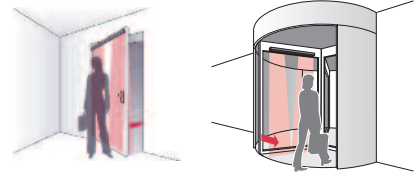
Translation of the original instructions

General

① Aluminium profile
② Sensor (US beam)
③ End cap 2x
④ Front cover
⑤ Bearing clamp 2x
⑥ Screw terminal
(not visible in figure)

1 Safety instructions

⚠ Observe the national and international regulations on door safety.
Never touch any electronic or optical components of the sensor.
Only trained, qualified personnel may mount and start up the sensor.
The unit may only be opened and repaired by your supplier.
The unit may only be operated from a safety extra-low voltage (SELV) system with safe electrical isolation.
If the front cover ④ breaks, there is a risk it may shatter.

Always consider the safety functions of your application as a whole, never just in relation to one individual section of the system.
The sensor may only be operated in the aluminium profile provided for this purpose.
Parts of the sensor may become hot during operation.
The installer is responsible for carrying out a risk assessment and installing the sensor and the door system correctly.

Check the function of your entire door system in relation to the applicable safety standards (e.g. EN 16005) and EU regulations.

2 Start-up

Recommended start-up sequence: I. Mounting the aluminium profile, II. Connect, III. Mounting sensor/cables, IV. Adjusting the angle, V. Initialisation

The start-up procedure below covers virtually all applications. However, you may have need of a particular setting not described here. In this case, please refer to your application documents and to the table found in chapter 3 of these instructions; alternatively, you can contact our product specialists.

2.1 Mounting the aluminium profile

I Mounting the profile

1. If the profile ① does not have any mounting holes, make some in the rear of the profile and mount it so that it is horizontal (use a spirit level). Important: The aluminium profile must lay **flat** against the mounting surface.

2. If the front cover ④ has been supplied by metre and needs to be cut to size, lay it on a **flat, clean surface** and cut it using a **fine tooth hacksaw, a metal cutter or a rotary tool** (with an appropriate attachment), without applying any pressure. To attach the cover following start-up: 1. remove protective foil 2. Insert the cover ④, 3. Click the cover into place..
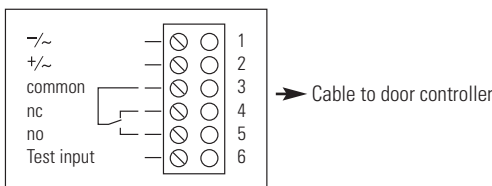
3. Affix the end caps after attaching the cover. Affix the end caps ③ with alignment pins on the profile side. Optional: Affix the end caps with screws for reinforced fixation. Therefore pierce through the drill-hole.
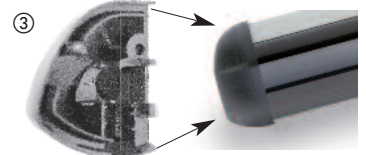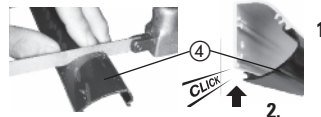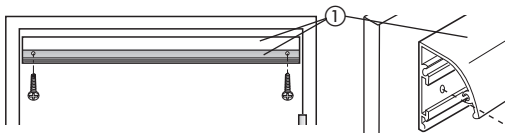
2.2 Electrical connection

II Connect

Connection diagram for individual sensors

−/∼	1
+/∼	2
common	3
nc	4
no	5
Test input	6

→ Cable to door controller

⚠ Attention! Connection scheme is illustrated powered off
In standard relay is powered (passive)
NC = Use connection 5 (NO)

Notes on wiring:

Wiring according to the requirement of the door system
1. Pull screw terminal ⑥ out of the sensor to be connected to the door controller (= master sensor).
2. Perform wiring in accordance with the door controller specifications.
3. Once the plug terminal has been wired, re-insert it into the sensor.

Master/slave wiring
Master/slave wiring using enclosed ribbon cable. A maximum of 3 additional slave modules can be added in this way.

⚠ If AC voltage is supplied, only single sensor operation is possible and it is not allowed to cascade the sensors by ribbon cable. Always use ferrules when wiring (recommended core cross-section 0.25 mm2).

For a both-sided protection of the door, it is recommended to us the optional Y-Adapter (288879).

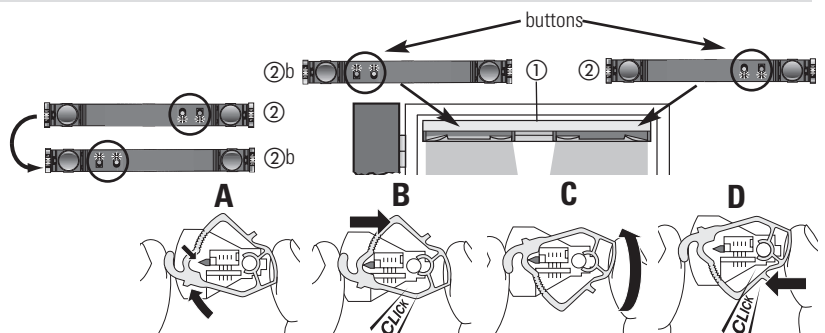#### 2.3 Mounting the optical unit

III Mounting sensor/cables

The buttons red and green on the optical unit must be mounted onto the corresponding door edge.

Sensor ②b must be rotated by 180° and mounted.

Rotate by 180°

To do this, rotate the mounting clips ⑤ on the sensor ② (in the sequence A, B, C, D).

buttons

A   B   C   D

1. Click sensors ② and ②b onto the aluminium profile ①. Insert the upper lug of the mounting clips ⑤ into the upper groove of the profile ①, then click into place.
2. There is space for the cables between the mounting clip ⑤ and the profile ①.
3. Use the ribbon cable ⑧ to connect the individual sensors ② and ②b (note the narrow and wide grooves, do not use force to insert the cable).

Upper groove
Sensor clicked into place
Wide groove
Narrow groove
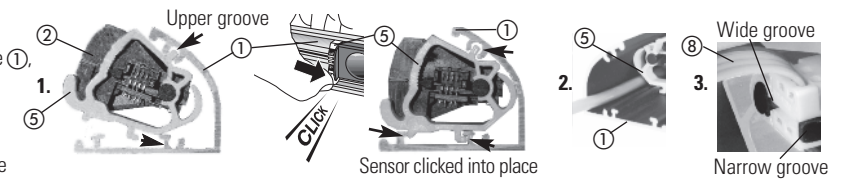
**2.4 Setting the inclination angle**

IV Adjusting the angle

To ensure correct functioning, **the same angle must be set on the left and right sides of a sensor.**

The position of the detection field ⑩ 10 is determined by the position of the US beam in the aluminium profile.

Push the sensor as far as possible to the left or right end of the profile in order to protect the closing edges.

The inclination angle of each sensor must be selected such that the door stops **BEFORE** it comes into contact with an obstacle.

The inclination angle values specified cover 90% of all applications. For special applications, refer to your application documents.

5° ← → 5°

Adjustable inclination anglel 2°– 14° (3° angle)

⑩

5° → door leaf ← 8°

2–14°

⑩
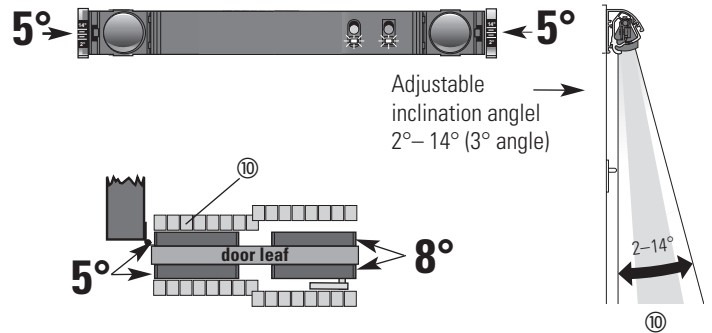
2.5 Initialisation of a sensor

A sensor must always be initialised on the master module on each start-up (first initialisation).

Notes on initialisation for special backgrounds:
In the case of special backgrounds (such as a metal grating), place a cardboard on the background in order to ensure faultless initialisation (see the table in chapter 5 relating to background composition parameters).

V Initialisation

Master-initialisation using the «green» key:
Press the **«green»** key for **5 seconds** to trigger the master-initialisation procedure. Trigger the master-initialisation only on the sensor which is connected with the door controller.

«green» key   «red» key
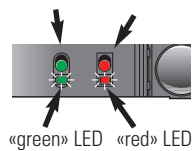
«green» LED   «red» LED

1. Both the red and green LEDs flash to show that the initialisation procedure has been triggered. You now have 6 seconds to leave the detection field.
2. The red LED flashes to show that initialisation is being performed. Do **not** enter the detection field.
3. If the LEDs continue to flash as before, please refer to chapter 4, Troubleshooting.
4. Once both LEDs cease to flash, initialisation is complete.

Master-initialisation using the remote control (Reglobeam):

Initialisation:
1. Press key **«G»**
2. Press keys **F + 3 + 6** to trigger the initialisation procedure
3. lock the remote control: **F + 3 + 8**

The remote control is available as an optional accessory.

▌ After initialisation, the sensor is ready for operation. Please check the sensor's detection responses. If they do not meet your
◆ requirements, you can use the sensor's keys or the remote control to set various detailed configurations and optimise your door system's functionality (see next chapter).

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3 Setting options for parameters and values

Example of a sensitivity setting

Setting using the «red» and «green» keys:
1. Press the «red» and «green» keys for 1 second, -> device located at parameter 1, «test input».
2. Press the «red» key 3 times -> device moves to parameter 4, «sensitivity» and indicates a value of 3 (20 cm) by flashing green 3 times
3. Press the «green» key twice -> device indicates a value of 5 (40 cm) by flashing green 5 times.
4. Optional: Exit setting mode by pressing the "red" and "green" keys for 1 second.

Setting using the remote control:
1. Press key «G» on the remote control («3» lights up for the device with address 3, for example).
2. Press key «D»; key «3» lights up, i.e. the previous value was 3 (20 cm).
3. Press key «5»; a value of 5 (40 cm) is set (key «5» lights up).
Note:
The parameterisation by remote control will be locked after 30 min without operation. Reactivation: briefly press the green key, switch the supply on/off or enter an actication code.

Notes on setting options:

Nature of the background:
• One of 3 setting options must be selected, depending on the composition of the ground being used. If the red LED blinks twice and there is no object in the sensorfield, a special background has to be set:
– Standard
– Very dark and/or reflecting ground
– Metal grating -> A base must be placed over the grating during initialisation (the sensitivity is then fixed at >= 50 cm). This setting will switch off the background test and –tracking function.

Synchronisation:
• Synchronisation is active in standard mode and ensures that the sensors will continue to work faultlessly even if fields overlap.
– Caution: If a US beam (green label) or a R3 (yellow label) is used together with an older release, synchronisation must be switched off and overlapping prevented manually (various levels, switch off beams).

Sensitivity:
• The sensitivity value must be selected on-site in accordance with requirements (e.g. EN 16005).
– The values specified are guide values and relate to the height of the object to be detected. This will vary depending on the composition of the background and must be checked on-site.

Initialisation:
• The mounting height of the sensors is memorised during initialisation.
– The corresponding specified height is saved in parameter 8 using values 1 – 4 (1 = 1.4 – 1.7 m approx., 2 = 1.7 – 2 m approx., 3 = 2.0 – 2.4 m approx., 4 = 2.4 – 3.0 m approx.).

Restoring the factory default setting:
• **Press both the "red" and "green" keys for 5 seconds until the red LED flashes rapidly, then release them.**

Enhanced levels
Standard mode sets all values to their factory default settings and switches all light beams on. Power saving mode sets all values to their factory default settings and switches light beams 2, 4 and 6 off.

Setting options using keys & remote control:

Note: If parameters are changed, an initialisation procedure must always be performed on the corresponding sensor module.

Setting mode using keys:
Press the red and green keys for at least 1 s.
Exit by pressing red and green again for 1 s.

Setting mode using remote control:
Press key G

Legend for sensor keys and LEDs:
✹ = Red LED ✸ = Green LED
◯ = Red key ◇ = Green key

1. Select parameter / 2. Set value

	Select parameter (Remotecont)	Select parameter (Sensor keys)	Set value (Remote control)	Set value (Sensor keys)	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8	Value 9	Notes
					1	2	3	4	5	6	7	8	9	
1 Test input	A	Flash 1x	flashes 1x	Press 1x ◇	flashes 1x	flashes 2x	flashes 3x	flashes 4x	flashes 5x	flashes 6x	flashes 7x	flashes 8x	flashes 9x	A number is assigned to each value. After value 9, returns to value 1
2 Light beams		press 1x flashes 2x		Press 1x	High aktive pull up (DIN 18650)	High aktive pull down (DIN 18650)	Low aktive pull up (DIN 18650)	Low aktive pull down (DIN 18650)	off	–	–	–	–	
3 Output	C	press 1x flashes 3x			Relay active circuit	Relay passive circuit	— See tables below for all settings —				reboot	SW-version	–	
4 Sensitivity	D	press 1x flashes 4x		Press 1x ◇	10 cm (DIN 18650)	15 cm (DIN 18650)	20 cm (DIN 18650)	30 cm (DIN 18650)	40 cm (DIN 18650)	50 cm (DIN 18650)	70 cm	–	–	**When making settings for a metal grating, the sensitivity is fixed at >= 50 cm – attend to safety requirements**
5 Relay hold interval	E	press 1x flashes 5x		Press 1x ◇	0 ms	50 ms	200 ms	500 ms	1 s	3 s	6 s	10 s	–	Relay drop-out delay
6 Device address	F + 1	press 1x flashes 6x		Press 1x ◇	1	2	3	4	5	6	7	–	–	Device address after initi.: master=3 slave= 4 - 7
7 Nature of the background (ground)	F + 2	press 1x flashes 7x			standard	Floor: dark/reflecting	Floor: Metal grating (use a base when making settings)	–	–	–	–	–	–	
8 Initialisation	F + 3	press 1x flashes 8x		Press 1x ◇	Mount. height 1.4 – 1.7 m approx.	Mount. height 1.7 – 2 m approx.	Mount. height 2 – 2.4 m approx.	Mount. height 2.4 – 3.0 m approx.	Teach-in height or press the «red» key for 1 s	Master initialisation or press the «green» key for 5s	LED-test	Reglobeam off	–	Value 1 – 4 for display purposes only
9 Synchronisation mode	F + 4	press 1x flashes 9x			synch	No synch	standby & synch	–	–	–	–	–	–	Off if release 3 or US beam is combined with older devices
(■) Enhanced levels (via remote control only)	F + 8	–			Standard mode	Power saving mode	–	–	–	–	–	–	–	**Select enhanced level = parameters set to factory default settings**

○*off ○* settings ✓ = on ✗ = off

Parameter 2, light points:

The setting options available via the remote control and sensor keys differ for parameter 2. Individual beams can be switched off and on using the remote control, whilst light beam patterns can be set using the «red» and «green» keys. **If light beams are switched on or off, the «height teach-in» function must be executed.** With sensitivity levels 6 and 7, the sensor only has access to 7 light beams; beam 8 is deactivated.

Parameter 2 using the remote control

Remote control	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8	Value 9	Factory default setting
B + Nr.: beam. Displayed and selected as «on» or «off» using keys 1 and 2	B + 1: beam 1 key1 = on ✓ key2 = off ✗	B + 2: beam 2 key1 = on ✓ key2 = off ✗	B + 3: beam 3 key1 = on ✓ key2 = off ✗	B + 4: beam 4 key1 = on ✓ key2 = off ✗	B + 5: beam 5 key1 = on ✓ key2 = off ✗	B + 6: beam 6 key1 = on ✓ key2 = off ✗	B + 7: beam 7 key1 = on ✓ key2 = off ✗	B + 8: beam 8 key1 = on ✓ key2 = off ✗	B + 9: all beams on	Power saving mode

Parameter 2 using the «red» and «green» keys

Sensor keys	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7	Value 8	Value 9	
2 Light beams — After parameter 1, press 1x ◯ flashes 2x	flashes 1x	flashes 2x	flashes 3x	flashes 4x	flashes 5x	flashes 6x	flashes 7x	flashes 8x	flashes 9x Display of special pattern	Press 1x ◇

(DIN 18650) = Fulfils DIN 18650 installed moving

◇ Factory default setting   *As-delivered condition

3

4 Troubleshooting

Symptom	Possible cause	Remedy
The red LED flashes 8 times after initialisation	- The detection field was not empty during initialisation - The bearing clamps are not mounted correctly in the profile - The bearing clamps are set to different angles on the same sensor - Reflecting background or metal grating	- Carry out the initialisation again - Click the bearing clamps into the profile correctly - Set the bearing clamps to the same angle - Select a different background
The red LED flashes continuously	- Faulty ribbon cable	- Replace the ribbon cable
The red LED flashes twice	- Dark or reflecting ground - Object in the detection field (no fault)	- Set parameter 7 to «dark / reflecting»
The door does not open or close although nothing has been detected	- The test input has not been activated or an incorrect version has been activated	- Make sure that the test input has been activated - Set the correct relay output in accordance with the door controller (see page 3, test input))
Master initialisation does not work, the red LED flashes 4 times	- Use of AC voltage	- Convert the sensors to a DC supply
Not all sensors react when carrying out the master initialisation	- Use of AC voltage - Connection interrupted along the ribbon cable	- Convert the sensors to a DC supply - Insert the ribbon cable correctly or replace it
No reaction from the doors, although detection is taking place	- Initialisation has been carried out on a sensor that is not directly connected to the door controller or to the Y adapter	- Carry out initialisation on the sensor that is directly connected to the door controller
The sensor functions without the cover but not with it	- The angle of the bearing clamps has changed - The cover is of poor quality (has coarse grooves) - Sensitivity too low	- Check the angle of the bearing clamps - Replace the cover - Increase the sensitivity
The red LED flashes 4, 5, 6 or 7 times	- Use of AC voltage - Configuration error (sensors have been swapped following master initialisation) - Sensors have been incorrectly initialised or not initialised at all - Self-test failed, triggered unexpectedly	- Convert the sensors to a DC supply - Carry out the initialisation again - Carry out initialisation on the master (sensor on the door controller) - Carry out the initialisation again
Both LEDS (red and green) are lit permanently	- Supply voltage is not stable enough - Supply voltage is too low - Voltage break	- Isolate the sensor from the supply - Check the power supply - Switch the supply on again
Detection sometimes takes place whilst the door panels are moving	- If the floor is very uneven and the door moves, this may lead to detection - Incorrect background parameters have been selected	- Reduce the sensitivity - Select the correct background parameters - Set a different angle (ensure safety requirements are met)
Incomprehensible response to a cascade of several devices, red LED flashes once	- Various sensor releases have been used (release 2, release 3 and US beam sensors)	- Only use US beam and/or release 3 sensors - For US beam or release 3 sensors, switch synchronisation off and manually prevent any overlap
The red LED flashes 10 times	- Loss of power during parameterisation (memory error)	- Carry out initialisation on the master (sensor on the door controller)
The green LED on the slave module lights up permanently	- The master is in standby mode and the slave is not. Only the slave was reactivated.	- Reactivate master using door activation - Carry out initialisation on master (sensor on door controller) - Check test input (parameter 1) - Activate synchr. on all sensors (parameter 9) - Replace ribbon cable if necessary

Note: Carrying out master initialisation or switching the operating voltage off/on will reset an error.

5 Technical data

Technology	Active infrared (triangulation)	Making current	< 500 mA
Wavelength	880 nm	Test input	4 versions (high/low active, pull up/down
Number of IR beams	8, can be switched separately, synchronized	Output	Change-over relay, max. 40 VDC/40 VAC, 1 A
Dimensions of an IR beam	30 mm x 60 mm at 2.2 m mounting height	Hold intervals	0 – 10 s (adjustable)
Detection zone, dimensions	471 mm x 60 mm at 2.2 m mounting height	Operating temperature	-20 °C bis 60 °C
Response time	< 50 ms	Type of protection	IP 54 suitable
Mounting height	1.7 – 3.0 m, depending on the background	Remote control range	5 m
Angle setting	2° – 14°, set in increments of 3°	Number of devices that can be interconnected	4 units, synchronized
Installation length in the profile	300 mm incl. mounting clips	Application	Stationary/moving presence detection
Power supply	15 – 37 VDC/ 15 – 26 VAC, AC independently	Functional safety level	SIL2
Power consumption	Max. 3.3 W, 0.17 W per beam		

6 Declaration of conformity, identification of the year of manufacture by means of the serial number

6.1 EC-Declaration of conformity

6.2 Identification of the year of manufacture by means of the serial number

Green label:


```
255373    Production: 2009
0 9 2 7 1 0 1 3 R 4
```
Year of manufacture   Week

Position of the green label on the US beam sensor:

7 Contact