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BIRCHER

UniScan

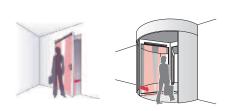
Testable surface sensor for moving operation on automatic door systems

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.

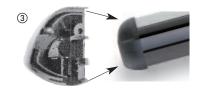
Mounting the aluminium profile

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 lav 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.

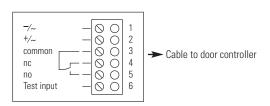


3. Affix the end caps after attaching the cover. Affix the end caps (3) with alignment pins on the profile side. Optional: Affix the end caps with screws for reinforced fixation. Therefore pierce through the drill-hole.



Electrical connection 2.2

Connection diagram for individual sensors



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Connect

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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



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).

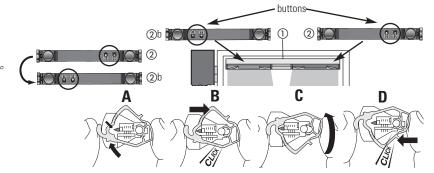
2.3 Mounting the optical unit

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

Mounting sensor/cables Sensor (2)b must be rotated by 180° and mounted.

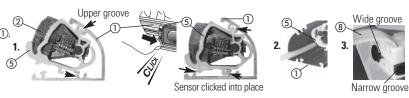
Rotate by 180

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



2. There is space for the cables between the mounting clip (5) and the profile (1).

3. Use the ribbon cable (3) to connect the individual sensors
(2) and (2)b (note the narrow and wide grooves, do not use force to insert the cable).



2.4 Setting the inclination angle

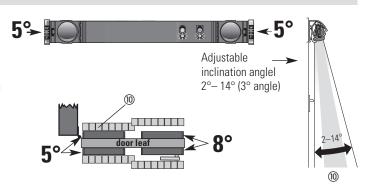
To ensure correct functioning, the same angle must be set on the left and right sides of a sensor.

The position of the detection field (1) 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.



2.5 Initialisation of a sensor

Adjusting the

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Initialisation

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).

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



 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.

Once both LEDs cease to flash, initialisation is complete.

Master-initialisation using the remote control (RegloBeam 2):

Initialisation:

1. Press key «G»

2. Press keys **F + 3 + 6** to trigger the initialisation procedure

3. lock the remote control: $\mathbf{F} + \mathbf{3} + \mathbf{8}$

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).

3 Setting options for parameters and values

Example of a sensitivity setting

Setting using the «red» and «green» keys:

 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:

- 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.

	A number is assigned to each value	After value 9 returns to	y value 1										
σ	flashes 9x		Press 1x 🔷 🗖									Areas IX	Areas IX
∞	flashes 8x	Proce 1x >	> 2000			3 000	SW-version	SW-version –	SW-version 10 s	SW-version 10 s	SW-version 10 s	SW-version 10 s	SW-version 10 s
7	## flashes 7x	Press 1x 🔷			ı			settings reboot reboot	reboot 70 cm 6 s	settings reboot 70 cm 7	settings reboot 70 cm 7 cm	settings reboot 70 cm 7 cm 7 LED-test	settings reboot 70 cm 7
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-	flashes 1x	π [High aktive pull up DIN 18650	High aktive pull up	High aktive pull up OIN 18650	High aktive pull up CDIN 18650 Relay active circuit 10 cm CDIN 18650	High aktive pull up CDIN 18650 Relay active circuit 10 cm 0 ms	High aktive pull up CDIN 18650 Relay active circuit 10 cm 0 ms	High aktive pull up CDIN 18650 OIN 18650 O ms the standard contribution of the cont	High aktive High aktive hight lup pull up recircuit p circuit p circuit lub ms lub attive lub atti	High aktive pull up CDIN 18650 Oms Oms Oms The man approx. Own approx. Own approx.
Remote	Control Specifical	keys											
2. Set	value		Sensor keys	₩ Flash 1x		press 1x O ## flashes 2x		press 1x O ### Hashes 2x ####################################					
	1. Select	parameter	Remotecant	∢			U	U D	O O	O B ++			
Setting mode using keys: Press the red and green keys for at least 1 s. Evit by proceing rod and green again for 1 s.	Setting mode using remote control:	به احدد معموا ا	Legellu ioi selison neys aliu t.c.Ds. ■ Red LED	← Topy Copy of Topy Copy Copy Copy Copy Copy Copy Copy C							P I		
Setting mode usi Press the red and	Setting mode usi	Press key G	© = Red LED	T Test input	_	2 Light beams			2 Light beams 3 Output 4 Sensitivity Flelay hold interval				

Parameter 2, light points: Parameter 2 using the remote control	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.	able via the remote t beams are switc	control and sensor thed on or off, the	keys differ for para « height teach-in	meter 2. Individual » function must b	beams can be swit e executed. With	tched off and on us sensitivity levels (sing the remote con 3 and 7, the sensor	itrol, whilst light be only has access to	am patterns can b 7 light beams; bea	e set using the «red» ım 8 is deactivated.
	Remote control Value 1	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6		Value 8	Value 9	Factory default setting
2 Light beams	B + Nr: beam Displayed and selected as «on» or «off» using keys 1 and 2	B+1: beam 1 •***** Key, \(\) = on \(\) Key, \(\) = off \(\)	B + 2: beam 2 ••••••••• key 1 = on •• Key, 2 = off • X	B+3: beam 3 ***** key, 'i = on 'K Key, 'z = off X	B + 4: beam 4 *** © **** Key, ĭ = on ✓ Key, 2 = off X	B + 5: beam 5 **** 6 *** key,1(= on √ key,2(= off X	B + 6: beam6 B + *** Key, \(\) = on \(\) Key, \(\) = of \(\) Key, \(\) = of \(\) Key, \(\)	+7: beam 7 *****©* Key,1(= on v Key,2(= off X	B + 8: beam 8 ******* Key∑;= off ★ KeyZ;= off ★ Med@@@@@	+8: beam 8 +8: veam 8 B + 9: key∑ = orf X •••••••••••••••••••••••••••••••••••	0.es.e.vos Power saving mode

Z Light beams	Light beams Unit beam	B Displayed and selected as «on» or «off» using keys 1 and 2		*® ***** Key, 1 (= on √ Key, 2 (= off X	*** 0 **** Key, 1 = on \bullet Key, 2 = off \bullet Key, 2 = off \bullet	>×	*	keyj = 0 $keyj = 0$	Key, Z = off X	Key, $\mathbf{Z} = \mathbf{O}$ Key, $\mathbf{Z} = \mathbf{C}$	8	O*6*6*0*0 Power saving mode
Parameter 2 using	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:	
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2 Light beams	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	8 iiii flashes 2x	flashes1x flashes 2x	# flashes 2x	n flashes 3x	## flashes 4x	e flashes 3x aflashes 4x aflashes 5x aflashes 6x» aflashes 7x aflashes 9x aflashes 9x	## flashes 6x»	💨 flashes7x	# flashes 8x	🦛 flashes 9x	Factory default setting
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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 doo 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)
Wavelength	880 nm
Number of IR beams	8, can be switched separately, synchronized
Dimensions of an IR beam	30 mm x 60 mm at 2.2 m mounting height
Detection zone, dimensions	471 mm x 60 mm at 2.2 m mounting height
Response time	< 50 ms
Mounting height	1.7 – 3.0 m, depending on the background
Angle setting	2° – 14°, set in increments of 3°
Installation length in the profile	300 mm incl. mounting clips
Power supply	15 – 37 VDC/ 15 – 26 VAC, AC independently
Power consumption	Max. 3.3 W, 0.17 W per beam

Making current	< 500 mA
Test input	4 versions (high/low active, pull up/down
Output	Change-over relay, max. 40 VDC/40 VAC, 1 A
Hold intervals	0 – 10 s (adjustable)
Operating temperature	-20 °C bis 60 °C
Type of protection	IP54 suitable
Remote control range	5 m
Number of devices that can be interconnected	4 units, synchronized
Application	Stationary/moving presence detection
Functional safety level	SIL2

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

6.1 EC-Declaration of conformity

Manufacturer: Bircher Reglomat AG, Wiesengasse 20, CH-8222 Beringen Following directives have been observed: MD 2006/42/EG, RoHS 2011/65/EU, EMC 2014/30/EU

EC type-examination certificate: 44/205/12/413806-001
Notified inspection centre: TÜV NORD CERT, NB 0044
Product variant: Usbeam, UniScan

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





7 Contact

Bircher Reglomat AG Wiesengasse 20 CH-8222 Beringen www.bircher-reglomat.com