Presence detector 1-channel, 41-700

Operation

Presence detector 360° 1-channel master, consists of an integral unit, featuring On/Off control of 1 channel, presence detector, light sensor and integrated IR receiver.

Pushbutton power switch and light fittings are connected directly to the detector which is fitted flush with the ceiling. The detector can be installed and operated using the factory settings.

However, for optimal light regulation, it is recommended that you adjust the detector settings to the conditions of the premises (light requirements). This is done via the integrated potentiometers or IR remote control type 41-926 (accessory).

Installation

Location:
The detector responds to movement and heat in relation to the surroundings. Avoid placing the detector close to heat sources such as cookers, electric radiators or ventilation systems, or moving objects such as hanging mobiles etc. This may cause unwanted activation. **Fig. 1.**

Range:
The recommended installation height for this detector is 2–3.4 m. 2.5 m is the optimal installation height. At this height the detector has a range of Ø 20 m on ground level and Ø 13.5 at 80 cm table height (without the lens cover). **Fig. 2.**

Extending the coverage area:
It is possible to increase the coverage area by using presence detector 41-702 (slave). It is possible to connect 10 slaves (41-702) to one 41-700 (master) which will control the load with its settings.

Master and slave presence detectors have the same range.

To achieve complete coverage by using several detectors, it is recommended that an overlap of approximately 30% is calculated. **Fig. 3.**

Installation:
The detector is designed for flush mounting in a PL/Euro socket. **Fig. 4.**

Connection:
The detector must only be connected to a power supply once all wire connections have been connected. After connection to the power supply, the detector will be ready to operate after approximately 40 seconds (warm-up time).

The red LED flashes during warm-up. The end of the warm-up time is indicated with two short flashes from the green LED. Wiring diagram. **Fig. 5.**

Glossary

App. = Application, the method by which the detector will function.

Active on = The detector only switches on the light if the push-button power switch is activated, depending on the lux setting. The light switches off automatically after a predetermined time after the last registered activity.

Auto on/off = The detector switches the light on automatically depending on the lux setting when activity is registered in the coverage area. The light switches off automatically after a predetermined time after the last registered activity.

Short press on = Press the pushbutton power switch < 1 second. This may switch on the light, depending on the setting.

Long press = Press the pushbutton power switch > 1 second and is light-independent.

ECO off = Short press < 1 second, switches off the light at the same time. The detector will be blocked for 10 seconds.

Settings

Factory settings: **Fig. 6.**
App.: Auto On/Off with the option for short press On and ECO Off.
Short press is light-dependent.
Lux: 200 lux
Time (Off-delay): 10 minutes
Sensitivity: High sensitivity

Settings:
Settings can be changed via potentiometers under the cladding or by using the IR remote control type 41-926 (accessory).

Selection of applications:
The detector can be set to function as: Active On/Auto Off or Auto On/Auto Off. This is done via DIP switch 1. **Fig. 6.**

It is also possible to select various functions using the connected operating button. This is done via the DIP switch 3. **Fig. 6.**

Setting of applications:
DIP switch 1:
On: Auto On/Off
Off: Active On/Auto Off

DIP switch 2:
Not used

DIP switch 3:
On: Only short press On. (ECO Off and long press deactivated)
Off: Option for short press On and ECO Off. For long press > 1 second the light will be switched on or off constantly for two hours + the set cut-off time, switched on or off.

DIP switch 4:
On: Short press is daylight**independent**
Off: Short press is daylight-dependent.
NB: Long push is always daylight-independent.

NB: If ECO Off is used, the detector will be blocked for 10 sec. to prevent momentary re-activation (switching the light on).

Setting sensitivity: **Fig. 6.**

Setting via potentiometers: **Fig. 7.**

Lux:
The potentiometers for setting the light level have 10 preset settings: 20/50/100/200/300/400/500/700/1000 lux and ∞ (daylight-independent).

Example:
The potentiometer is set at 300 lux and the setting can be increased to 400 lux. When the LUX potentiometer is carefully turned to a higher lux, the green LED flashes once. The detector acknowledges with six flashes from the red LED equivalent to 400 lux.

Time:
The potentiometers for setting time (Time) have eight preset settings: Test/Pulse/2 min/5 min/10 min/15 min/30 min and 60 min. Pulse is 5 seconds On and 55 seconds off.

Example:
The potentiometer is set at 10 minutes and the setting can be increased to 15 minutes. When the TIME potentiometer is carefully turned to a longer duration, the green LED flashes once. The detector acknowledges with five flashes from the red LED equivalent to 15 minutes.

In order to achieve a secure setting of the potentiometers, the LED will flash in acknowledgement of the correct setting with a red LED. Each time the Lux or Time potentiometers are set, the green LED flashes once.

Lux	20	50	100	200	300	400	500	700	1000	∞
Number of flashes	1	2	3	4	5	6	7	8	9	10

Time	Pulse	2 minutes	5 minutes	10 minutes	15 minutes	30 minutes	60 minutes
Number of flashes	1	2	3	4	5	6	7

Test:
A walk-test can be carried out to check that the detector is detecting correctly. Select the walk-test either via the Time potentiometer (minimum position) or via the "Test On/Off" button on the IR remote control 41-926 (accessory).

When the walk-test is activated, the blue LED switches on, and when the detector detects movement, the red LED and connected lighting will switch on for five seconds.

NB! The walk-test is daylight-**independent**.

Example 1:
E.g. classroom

DIP switch settings:

	1	2	3	4
On	x			x
Off			x	

Automatic on/off via detector, daylight-dependent. Light sensor has first priority.

The light switches on automatically when the detector registers activity within the coverage range and the light level is below the preset level.

The light switches off automatically after a predetermined period when registration of activity in the detector's coverage area has ceased, or the light level remains above the preset level for five minutes.

The light can **always** be switched on via the operating button. Short press.

Setting the light level and cut-off time is performed via the integrated potentiometers or via the IR remote control 41-926 (accessory).

Option for manual off (ECO off). Short press.

230 V operating button must be connected.

It is possible to perform a long press via the operating button. A long press is intended for situations in which the light needs to be switched on (e.g. examinations) or switched off (e.g. film screenings) for extended periods.

If the light is on, the light will switch off and the detector will be disabled as long as activity is detected and the cut-out time + 2 hours has not elapsed. Then the detector switches to automatic and the light will be switched on in accordance with the selected application.

For example: The time has been set to 15 minutes, so the detector will switch to automatic mode 2 hours and 15 minutes after it last detected activity.

If the light is off and a long press is activated, it will turn on (regardless of the light level), and the detector keeps it turned on as long as activity is detected and the cut-off time + 2 hours has not run out. The light then turns off, the detector switches to automatic mode, and the light switches on according to the selected application.

When a long press is activated, the detector indicates this by flashing the red LED (0.25 seconds On and 5 seconds Off).

If the "long press" function must be interrupted, this is done via a short press, after which the detector returns to automatic and the light switches on according to the selected application.

Example 2:
E.g. offices

DIP switch settings:

	1	2	3	4
On			x	x
Off	x			

The light **must** be switched on via the operating button and is daylight-independent. ECO Off and long press deactivated.

Automatic off via detector after end of cut-off time (Auto Off) or light level. Light sensor has first priority.

The light switches off automatically after a predetermined period when registration of activity in the detector's coverage area has ceased, or the light level remains above the preset level for five minutes.

230 V operating button must be connected.

Setting the light level and cut-off time is performed via the integrated potentiometers or via the IR remote control 41-926 (accessory).

Example 3:
E.g. staircases

DIP switch settings:

	1	2	3	4
On	x		x	x
Off				

Automatic on/off via daylight-dependent sensor. Light sensor has first priority.

The light switches on automatically when the detector detects activity within the coverage range and the light level is below the preset level.

The light switches off automatically after a predetermined period when registration of activity in the detector's coverage area has ceased, or the light level remains above the preset level for five minutes.

The light can **always** be switched on via the operating button, regardless of the daylight level.

230 V operating button must be connected.

Setting the light level and cut-off time is performed via the integrated potentiometers or via the IR remote control 41-926 (accessory).

Operation & maintenance

Dirt affects the operation of the detector and the detector's lens must therefore be kept clean. Use a damp cloth for cleaning. Use water mixed with ordinary detergent. Avoid putting pressure on the lens. If the lens or other parts of the detector are defective, it/ they must be replaced.

Technical data

Input:
Power supply... 230 V AC 50 Hz ±10%
Power consumption .... 0.2 W

Output:
Relay... NO, 230 V, µ 10 A
Load:
  Incandescent lamps............................. 2,300 W
  Fluorescent tubes, uncompensated .... 1,200 VA
  Halogen incandescent lamps .... 2,300 W
Max. compensation capacity .... 140 µF
Max. starting peak.................................... 165 A/20 m sec.

Performance:
Lux range (preset settings)....................... 20–1,000 lux
Time range (preset settings)..................... Pulse, 2–60 min.
Range .... Ø20 m, 360°
Installation height .... 2–3.4 m
Sensitivity .... 4 settings

Enclosure class .... IP 54
Cable dimension (Ø14 mm max.)............. 3 pcs. 5 x 2.5 mm^2
Ambient temperature................................. -5°C to +50°C

Certification:
CE in accordance with .... EN 60669-2-1

Accessories

IR Remote.. 41-926
Presence detector, slave 41-702

Remote control

Settings using IR remote control: **Fig. 8.**

Lock/unlock:
Press three times to "unlock the sensor" – edit mode.

The detector acknowledges with two flashes from the green LED. Press Lock/Unlock 3 times within 5 seconds.

Press once to "lock the sensor" – operating mode. The detector acknowledges with two flashes from the green LED.

For all settings (except Light On/Off, Short push, Long push, Status Ch 1, Status Ch 2 and LED On/Off) the detector must be unlocked, the setting selected and then the detector must be locked again for the setting to become active.

If the detector is not locked, it will lock automatically after two minutes and any modified settings will be saved.

Light On/Off 1
This function turns the light on/off constantly, independently of registered activity and light level. The function can be switched off as described below or via short push.

  1. press: Switch the light on or off. If this function has been activated the red LED will flash On 1 second and Off 10 seconds.
  2. press: Switches from On to Off or Off to On
  3. press: The detector will return to automatic and the light can be switched on according to the selected application. The detector acknowledges with one flash from the red LED.

The buttons on the IR remote control must be pressed within 5 seconds.

LED On/Off:
When the functions "Long push" and "Light On/Off" are activated, this is indicated via LED. To turn this indicator off, use "LED On/Off".

Ch 1 and Ch 2 buttons:
To set the Lux and Time settings for channel 1, CH 1 must first be pressed.

Status Ch 1 and Status Ch 2:
If one of these buttons is activated, the detector will indicate which settings it is operating from via LED indication.

Channel 1 = Red LED
Channel 2 = Blue LED, is not active.
Green LED indicates closed status.

Example: Channel 1 is set to 300 Lux and 10 minutes.
If you press the Status Ch 1 button, the LED will flash red five times, green once and then red four times and green once again.

The first five red flashes indicate the fifth lux setting = 300 lux.

The following four red flashes indicate the fourth Time setting = 10 minutes.

Lux buttons:
Setting light level.
Press Ch 1 for setting channel 1 which is indicated by the red LED.

There are 10 preset settings: 20/50/100/200/300/400/500/700/1000 and ∞ (light independent) as well as a user-defined light value (Learn actual lux).

The user-defined Lux value functions in the 20–1000 Lux range.

When "Learn actual lux" is activated, the red LED will flash once to indicate that the current light level is loading. If the light level is outside of the range 20 - 1000 Lux, the minimum (20 Lux) or maximum (1000 Lux) will be loaded.

This setting should be used when the desired minimum lighting in the room has been reached (the time when the light will be switched on due to insufficient daylight in the room).

Time buttons:
Setting the cut-out time.

There are seven preset settings: Pulse/2 min./5 min./10 min./15 min./30 min. and 60 min.

There is also an eight-hour constant on for operating a HVAC system. Blue LED flashes (0.25 seconds On and 2 seconds Off), when this function is active. To cancel the function, activate the button again and the blue LED stops flashing.

Instead of selecting a normal delay, it is possible to choose the "Pulse function", where the output pulses, i.e. flashes with a fixed rhythm.

Pulse is 5 seconds On and for 55 seconds Off.

The pulse function can be used e.g. to control ventilation systems. The pulse function stops after the selected cut-off time, after activity detection in the sensor's coverage area has ceased.

If this function is desired, first press "Pulse", then press one of the "Time" buttons (not "8 Hours").

Example: The "Pulse" and "5 min" buttons are activated via remote control. This means that after the final activity registration, the sensor will pulse for five minutes. **Fig. 9.**

Test On/Off:
Activating walk-test.

When the test has been activated, the blue LED comes on. When the detector detects activity in the coverage area, the red LED and associated lighting will switch on for 5 seconds.

NB! The walk-test is daylight-independent.

Short push:
Has the same function (and limitations) as a short push given by the operating button.

Long push:
Has the same function (and limitations) as a long push given by the operating button.

Fact. setting:
Pressing this button immediately restores all settings to factory settings.

SERVODAN

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Fig. 1

Fig. 2

Ø3
Ø5
Ø12
Ø20

2,5 m
7 m²
19 m²
110 m²
300 m²

0,8 m
Ø2
7 m²
Ø3,4
9 m²
Ø8
50 m²
Ø13,5
140 m²

27
46,4
Ø100

Fig. 3

30%

Fig. 4

Gasket for IP54

Fig. 5

41-700 Presence detector 360° 1ch

| ⌐₁ | ⌐₁ | L₁ | L₁ | L₁ | L₁ | | L₂' | L₂ | N | N |

L₁
L₂
N

41-700 Presence detector 360° 1ch

| ⌐₁ | ⌐₁ | L₁ | L₁ | L₁ | L₁ | | L₂' | L₂ | N | N |

41-702 Presence detector 360° Slave

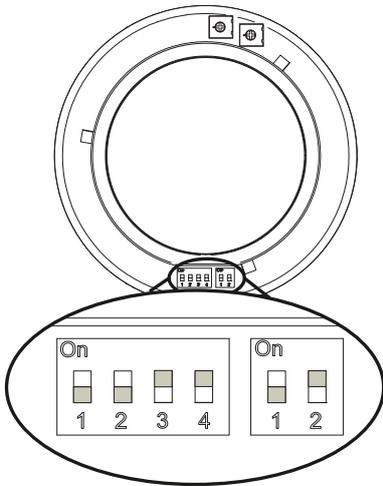| T₁/S | T₁/S | L₁ | L₁ | N | N |

L₁
L₂
N

Fig. 6

On
| 1 | 2 | 3 | 4 |

On
| 1 | 2 |
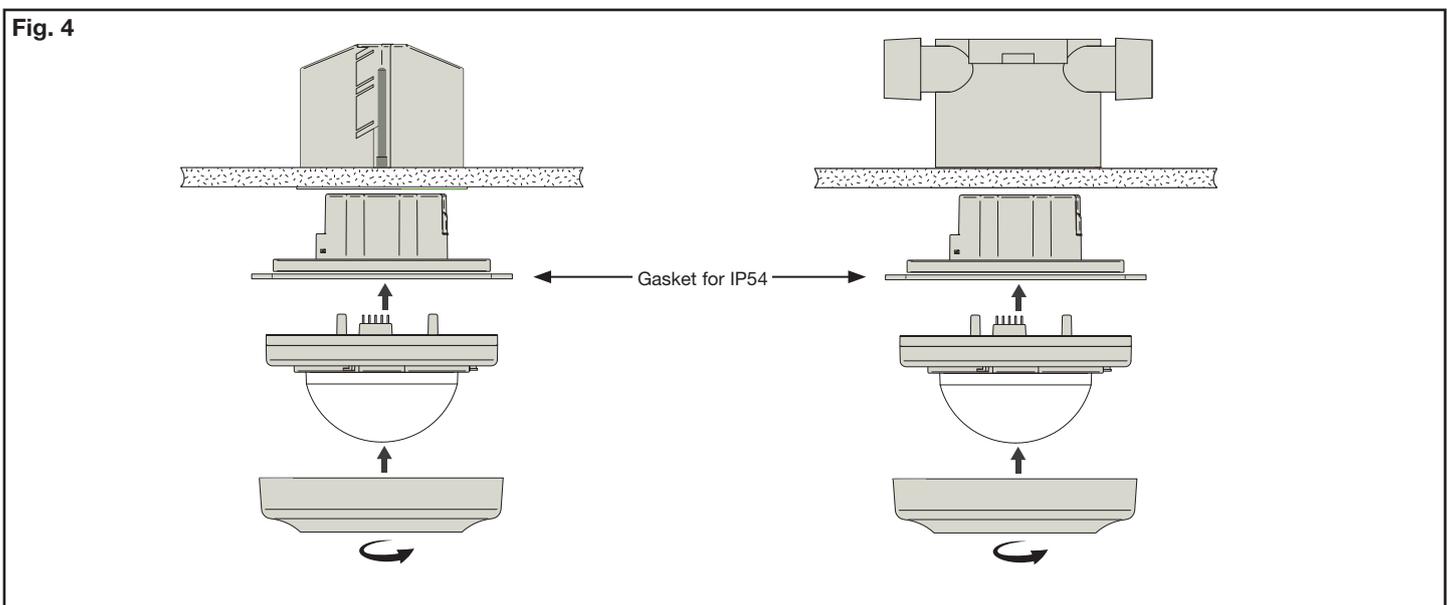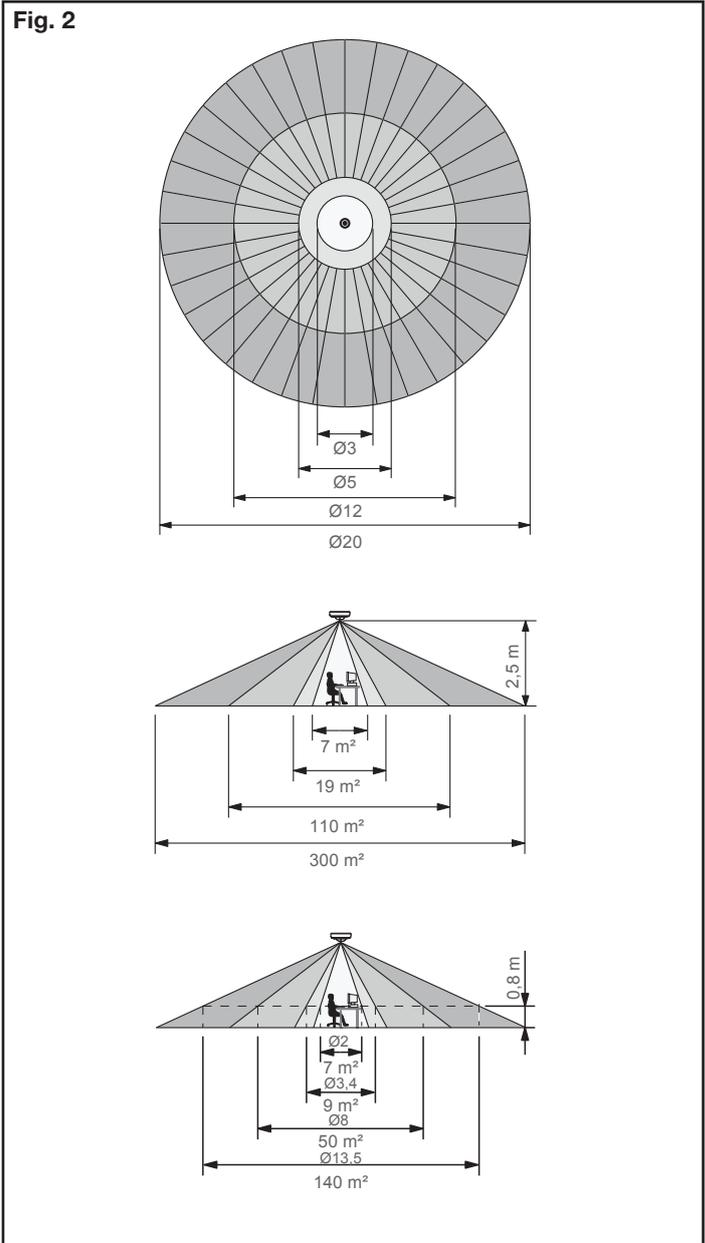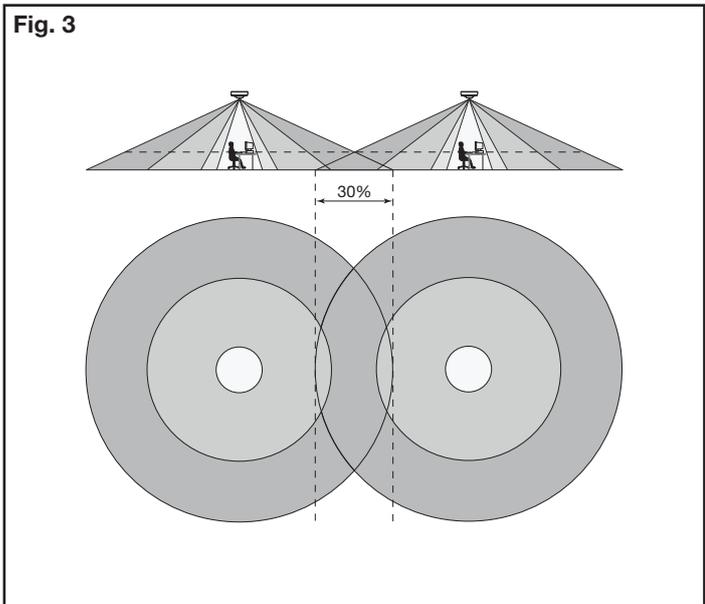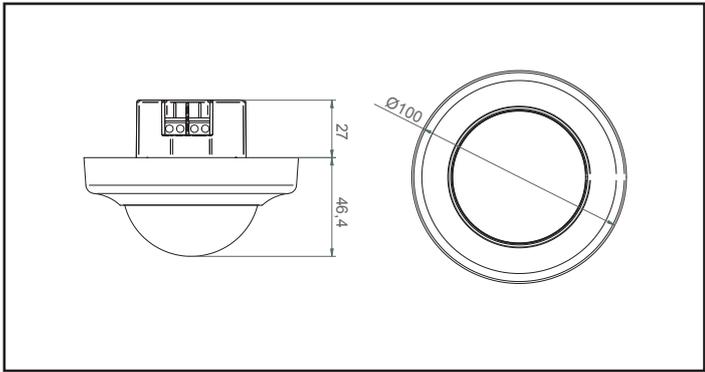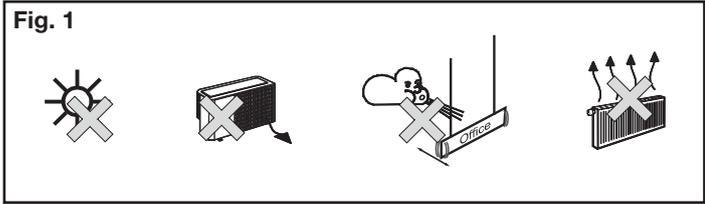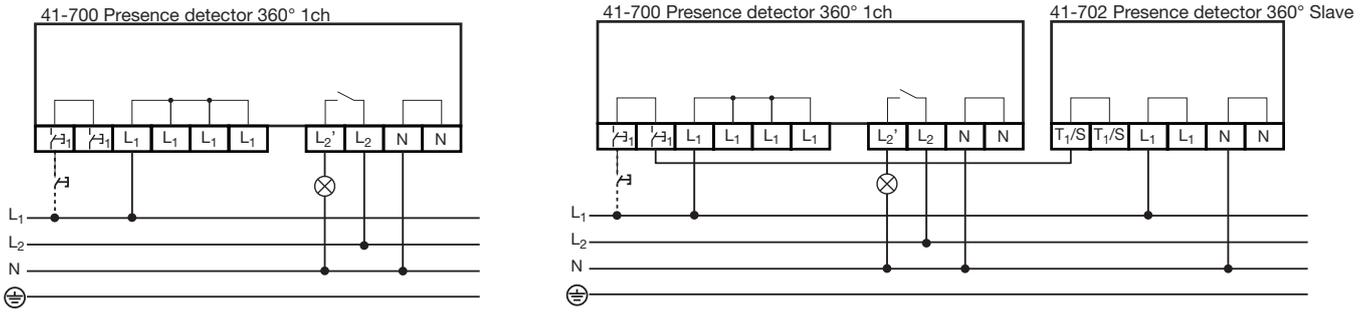
DIP switch:
Application
Factory setting:
1 = On
2 = On
3 = Off
4 = Off

DIP switch:
Sensitivity
On = 1 / Off = 0

DIP 1 2
0 0: Min
0 1: Low
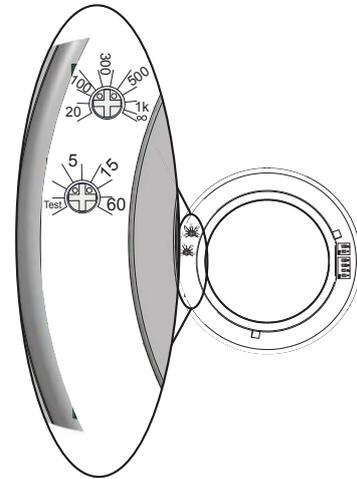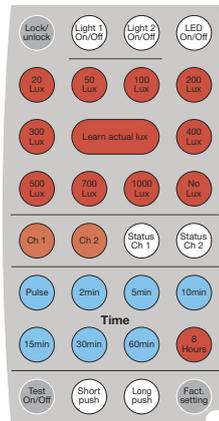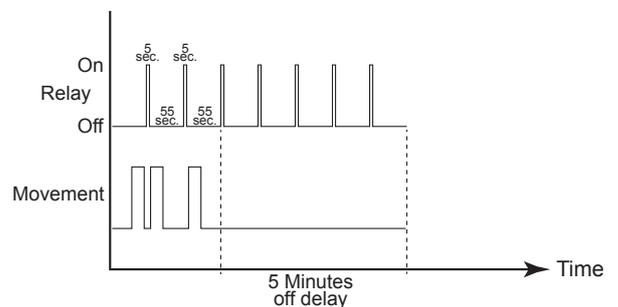1 0: High (Factory setting)
1 1: Max

Fig. 7

Fig. 8

Fig. 9

On
Relay
Off

Movement

5 sec. 5 sec.

55 sec. 55 sec.

5 Minutes
off delay

Time

Advarsel: Indbygning og montering af elektriske apparater må kun foretages af aut. elinstallatør. Ved fejl eller driftforstyrelser kontakt den aut. elinstallatør. **! Ret til ændringer forbeholdes !**

Warning: Installation and assembly of electrical equipment must be carried out by qualified electricians. Contact a qualified electrician in the event of fault or breakdown. **! Reserving the right to make changes !**

Achtung: Einbau und Montage elektrischer Geräte dürfen nur durch Elektrofachkräfte erfolgen. Wenden Sie sich bei Störungen bzw. Ausfall an einen Elektrofachkraft. **! Änderungen vorbehalten !**

Avertissement: L'installation et le montage d'appareils électriques doivent exclusivement être exécutés par un électricien agréé. En cas de défaut ou de perturbation du fonctionnement, contacter un installateur électricien agréé. **! Sous réserve de modifications !**