

Installation and Operating Instruction for Occupancy detector Master-SM and Slave-SM

1. Product information

- Presence detectors with a potential free contact
- Version as Master
- Extension of the coverage area by slave devices are possible
- Manual switching via pushbutton possible
- Other functions can be adjustable by remote control for example Orientation light function

2. Mounting preparation

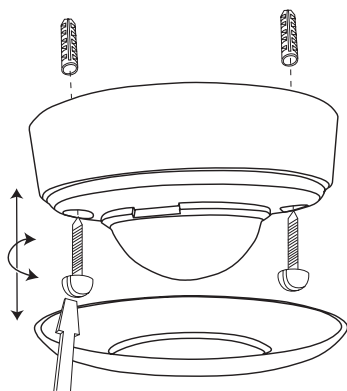
! Work on the 230V mains supply may only be carried out by qualified professionals or by instructed persons under the direction and supervision of qualified skilled electrical personnel in accordance with electrotechnical regulations.

! Disconnect supply before installing!

! The device is not suited for safe disconnection of the mains supply.

! When in Master/Slave mode of operation, the Master-appliance must always be installed at the location where there is least daylight.

3. Installation

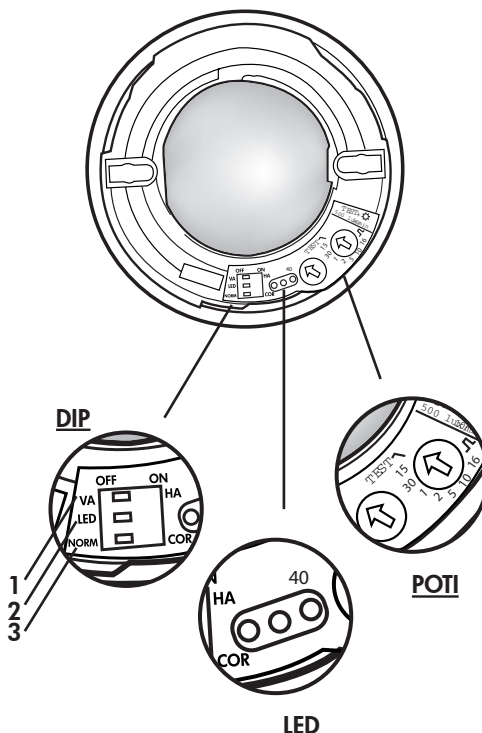


The detector must be installed on a solid and level surface. There is no need for frames.

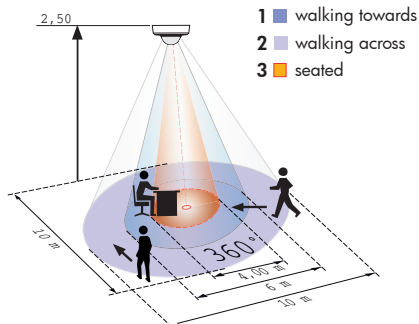
For mounting remove lens (turn anticlockwise). Fasten the mounting pod to the ceiling.

Having connected up the wires in accordance with regulations, secure the detector with 2 screws as per the illustration above. In order to assemble the detector outside, the PAPS base-plate, which is available as an accessory, must be mounted between the detector and the surface on which it is to be installed.

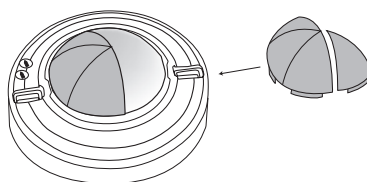
4. Position DIP-switches, LED's and potentiometer



6. Range of Coverage



7. Exclude sources of interferences



DIP-switch functions		
DIP1	Semi automatic mode	Fully automatic mode
DIP1	LED OFF	LED ON
DIP1	Corridor mode	Standard mode

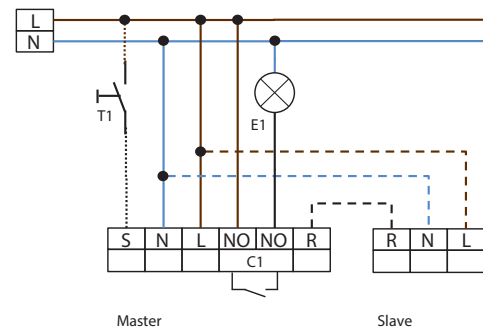
Corridor function: After deactivation by an external push button, the detector switches off and returns to automatic mode after 5 sec.

The DIP settings are enabled again by:

- Adjusting the DIP switches when closed
- Reset with test sun setting at the potentiometers
- Reset when open

8. Wiring diagram

Standard mode with master 1-channel occupancy detectors (N/O) with R and S terminal



T1 = NO button for semi-automatic mode Slave for enlargement of detection area

9. Article / Part.-Nr. / Accessoires

Typ	SM
PPMMAP (Master)	05104682
PPMSAP (Slave)	05104683

Accessory:

PAPS Base plate IP54
Remote control for PPMMAP

Part.-Nr.: 05104690
Part.-Nr.: 05104691

10. Technical data

Power supply:	110-240 V AC , 50 / 60 Hz
Power consumption:	< 1W
Ambient temperature:	-25°C – +50°C
Degree of protection/class:	IP20 / II
Settings:	Potentiometer, DIP-switch and by remote control
Light values:	20 - 1000 Lux (with remote control) 10 - 2000 Lux (with potentiometer) with Slave-devices
Extension of the detection area:	
Area of coverage:	circular 360°
Range of coverage Ø H 2,50m/ T = 18°C:	seated 4,00m / tangential 10m / frontal 6m
Recommended height for mounting:	2 - 3m
Light measurement:	mixed light, daylight
• Channel for light control	
Type of contact:	NOC/with pretravel tungsten
Contact load:	2300W cosφ=1 / 1150VA cosφ=0.5, µ-Contact
Time-settings:	5sec. - 16min./ test with potentiometer 5min. - 30min./ Test mit Fernbedienung
Dimension:	H x Ø [mm] 48x 98
Technical data PPMSAP	
Power supply:	230 V~ ±10%
Impulse output:	Optocoupler max. 2W
Impulse duration:	2 sec. or 9 sec.
Dimensions:	see above

11. Declaration of Conformity

This product respects the directives concerning


- electromagnetic compatibility (2004/108/EU)
- low voltage (2006/95/EU)
- restriction of the use of certain hazardous substances in electrical and electronic equipment (2011/65/EU)

12. LED function displays

LED function indicators after each mains recovery (60 sec. initialisation period)			
Operating state	LED function indicators		
Factory program active	White, red and green flash in quick succession for 10 sec., then initialisation indicators, see below		
Double-locked	white and green shines for 5 sec. all 20 sec., afterwards initialising notification		
	Indicator unprogrammed	Indicator programmed	Indicator also when forced shutdown is activated
Standard mode	Red flashes	Red flashes quickly	Every 5 sec., 4 x white, red and green in quick succession
12 h ON/OFF active	Red and green flash	Red and green flash quickly	Every 5 sec., 4 x white, red and green in quick succession
Corridor active	Red and white flash	Red and white flash quickly	Every 5 sec., 4 x white, red and green in quick succession
12 h ON/OFF & corridor active	Red, green and white flash	Red, green and white flash quickly	Every 5 sec., 4 x white, red and green in quick succession
CdS active	–	Red and white flash	Then <u>no</u> red LED for motion detection

LED function indicators during operation	
Process	LED function indicators
Motion detection	Red flashes on each detected movement
Semi-automatic mode active	White is ON
Impulse active	red and green flash one time all 4 sec.
Corridor active	White ON 1 sec. and OFF 4 sec.
Corridor and semi-automatic mode active	White ON 4 sec. and OFF 1 sec.
Too bright detected	Green flashes
Light measurement active	Green flashes once every 10 sec.
12 h ON/OFF function active	Red and green flash alternately
Duration ON active (by slave)	Red flashes quickly
IR command	White flashes once
IR command „Open“ and sabotage active	White and green flash once slowly

15. Settings by remote control when open

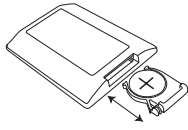
 Settings with remote control override the potentiometer and DIP settings.

The DIP settings are reactivated by

- Setting the potentiometers to "TEST" and "SUN", or
- Pressing the "Reset" button on the remote control in open state

PPMMAPFB

1. Check Battery:

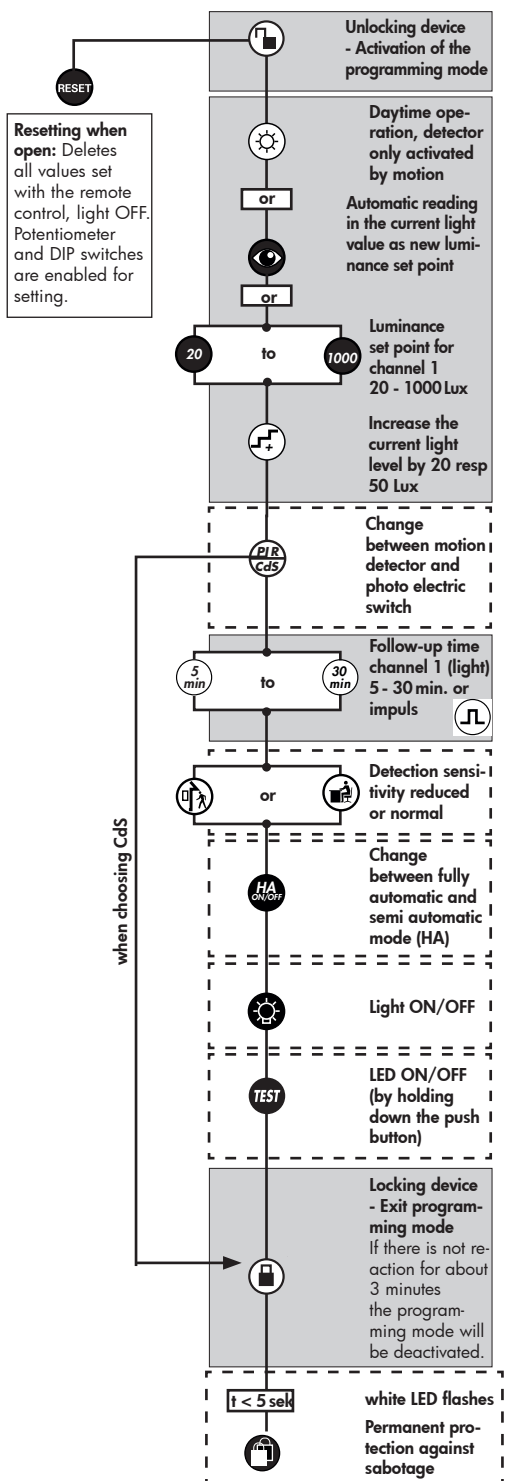


Open battery compartment by pressing the plastic springs together and removing the battery-holder.

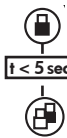


PPMMAPFB

9. Settings by remote control



10. Key functions in closed state



Permanent protection against sabotage

This function blocks the unit permanently. This operating mode can only be activated during the period of 5 seconds (white LED flash) after pressing the "lock" button. The procedure for leaving this mode is as follows:

1. Switch off the current
2. Apply current for 31 - 59 seconds
3. Switch of the current again
4. Apply current, wait for selftest cycle
5. Open detector



Light ON/OFF during the detection of motion plus follow-up time; Activation of the 12 h-ON/OFF-function by holding down the push button



Activation/Deactivation of the test function

After 3 minutes the test mode will be automatically closed.



Switches channel off and is immediately active again, exits all timers, interruption of light measurement



Confirmation immediately active again, exits all timers, interruption of light measurement



Changes to "open" state

11. Explanation of the remote control button functions

11a. In the initialisation period

12 h Light ON/OFF (party function)



Activated by "Light" - push button



Deactivated by "Reset" - push button (default)

Corridor function



Activated by "outside" - push button



Deactivate by "inside" - push button (default)



Forced shutdown

Activated by "sun" - push button



Deactivate by "moon" - push button (default)



11b. In opened state

This push button opens the detector and the following functions can then be programmed.

Attention: The detector is closed automatically:

- after every voltage recovery
- after 3 minutes

The state changes to "closed". In the first 5 seconds, the white LED flashes every 0.5 seconds. During this time, sabotage protection can be activated.



The device distinguishes between 2 procedures:

• Reading in with lighting switched on:

The switch-on value is determined automatically.

Determining the switch-on value:

1. Press the "eye" push button
2. Switch off the light (2 seconds later)
3. Read in the brightness
4. Switch-on value = Read brightness

• Reading in with lighting switched off:

When the push button is pressed, the current brightness is specified as the switch-on value. The switch-off value is determined automatically.



If the brightness has been modified, the switch-off threshold is recalculated.



Each time the push button is pressed, the device increases the current switch-on value in increments of 20 lux for a current switch-on value of < 100lux and in increments of 50lux for a current switch-on value of > 100lux.



Standard sensitivity for most applications



Reduced sensitivity for outdoor applications



When the pulse function is active, a pulse of 1sec. is generated every 9sec. If the pulse function is activated via remote control, the pause between 2 pulses can be modified. After activating the function via the "Pulse" push button, select the desired time within 5sec.:

$\left(\frac{5}{\text{min}}\right) = 9 \text{ sec.}$, $\left(\frac{10}{\text{min}}\right) = 10 \text{ sec.}$, $\left(\frac{15}{\text{min}}\right) = 15 \text{ sec.}$, $\left(\frac{30}{\text{min}}\right) = 30 \text{ sec.}$



The "Test" push button can be used to set the LED ON/OFF function. To do this, hold down the push button for 3sec.

Please note that in the open state and in test mode, the LED indicators are always ON.



Twilight switch function (CdS)

If the CdS function is active, the detector acts as a simple twilight switch. Only the brightness can be set in this mode. Movements are no longer indicated by the red LED.

Push button acknowledgement :

Each push of a button is indicated by lamp acknowledgement and by the white LED.

"Light ON" status: OFF/ON (approx. 0.5sec. each)

"Light OFF" status: ON/OFF (approx. 0.5sec. each)

12. Switch-off threshold brightness

1. If the switch-on threshold has been modified by the potentiometer or remote control, the switch-off threshold stored in the EEPROM is deleted and is then recalculated on the next activation.

Determining the switch-off value

1. Switch on for 5 min. with dark and motion
2. Light OFF for 2 sec.
3. Internal calculation of the switch-off value

2. If the eye push button is pressed, the switch-off threshold is recalculated. See also Remote control-> Eye section

3. Switch-off delay

If the determined switch-off threshold is exceeded during operation, the detector only switches off after a delay of approx. 15 minutes. This compensates for any brief fluctuations in the brightness.

13a. Behaviour of external push button/IR "Light"

The "Corridor" and "Light ON/OFF" functions are mutually exclusive. If both are activated, the detector performs the corridor function.

The behaviour when the push button is pressed is defined as follows:

Corridor function activated

Light ON:

Push button pressed briefly: Light OFF -> Active after 5 sec.
Push button held down: Light OFF -> Active after 5 sec.

Light OFF:

Push button pressed briefly: Light ON as long as motion + Lag time
Push button held down: Light ON as long as motion + Lag time

13b. Behaviour of external push button/IR "Light"

12 h Light ON/OFF activated

Light ON :

Push button pressed briefly: Light OFF -> Active after 5 sec.
Push button held down: 12h OFF

Light OFF :

Push button pressed briefly: Light ON as long as motion + Lag time
Push button held down: 12h ON

12 h Light ON/OFF deactivated

Light ON :

Push button pressed briefly: Light OFF as long as motion + Lag time
Push button held down: Light OFF as long as motion + Lag time

Light OFF :

Push button pressed briefly: Light ON as long as motion + Lag time
Push button held down: Light ON as long as motion + Lag time

13c. Behaviour of external push button/IR

„Forced shutdown“

Forced shutdown active

Light OFF:

Light OFF: Push button pressed briefly: Light ON for approx. 30 min., then forced shutdown if the set brightness is still exceeded.

14. Other functions

Activation of light for 12 h via mains interruption

- 1. Interrupt current
- 2. Apply current for 2 to 5 sec.
- 3. Interrupt current again
- 4. Apply current
- 5. Detector is now ON for 12h

Exiting sabotage

- 1. Interrupt current
- 2. Apply current for 30 to 60sec.
- 3. Interrupt current again
- 4. Apply current
- 5. Detector is in simple closed state

230 V AC permanently at the slave input

If 230 V AC is applied at the slave input for longer than 10sec., the light is switched on permanently. When the 230 V is removed, the light is switched off and automatic mode is activated.

230 V AC for 1 - 3 sec. at push button connection S

If 230 V AC is applied for 1 - 3 sec. at push button connection S, this is interpreted as a slave signal at slave connection R. This ensures that the detector is compatible with previous versions.

15. Fully automatic and semi automatic mode

(see functions PPMMAPI)

Fully automatic operation

- In this operating mode, the lighting switches automatically on and off for increased comfort, depending on presence and brightness.
- Channel 1 switches on in the event of motion if “dark” is detected.

Semi automatic operation

- In this operating condition, in order to gain increased savings, the lighting is energized only after being manually switched on.
- Switch-off takes place automatically or manually.
- The semi automatic mode basically behaves like the fully automatic one. However, the difference is that switching-on must always be carried out manually!

As many (closer-contact) buttons as desired can be wired in parallel on the “S” button input (ON/OFF).

Triggering in semi automatic mode: If the detector switches off in semi automatic mode (lag timer elapsed), the detector is switched on again within 10sec. by motion (despite semi automatic mode).