

UP 258/21 presence detector

5WG1 258-2AB21



Product and Applications Description

The presence detector with a sensing range of 360° allows the automatic execution of control functions in the electrical system by detecting movements. For example, energy consumers can only be switched on if for example people are moving in the sensing range of the 360° presence detector. The energy costs for lighting, heating, ventilation, air conditioning etc. can thus be reduced. The principle of operation of the presence detector essentially corresponds to that of a motion detector.

If the optimum assembly location is chosen, the presence detector will also reliably detect people when they are sitting.

The front of the presence detector with its pyramid design consists of a large number of small individual lenses. Movements are forwarded to the electronics in the presence detector by means of these lenses, as through a magnifying glass, and evaluated. The presence detector also has a constant light control. When it is dark and when people are present, the artificial light is controlled at a constant brightness according to the amount of daylight available.

- *Passive infrared presence detector for EIB*
- *Square 360° sensing range, for ceiling mounting*
- *Control of one or two lighting groups*
- *Switching or constant light control*
- *Mixed light measurement*
- *Lighting control fully or semi-automatic as required*
- *Presence output with ON/OFF delay*
- *Monitoring output with cyclic message object*
- *Output for brightness (LUX)*
- *Integrated scene module with 2 scenes*

- *Can be parameterized remotely using ETS*
- *Parallel operation of several presence detectors (master-slave, master-master) without logic module*

Switching or controlling two lighting groups

The UP258/21 presence detector switches or controls one or two lighting groups. Switch actuators are controlled in switching mode (ON/OFF). An ON telegram is sent when it gets dark **and** people are present. An OFF telegram is sent when it is light again **or** no people are present. Switching/dimming actuators or dimming actuators are controlled in control mode (constant light control). When it is dark and when people are present, the artificial light is controlled at a constant brightness according to the amount of daylight available. The second lighting group is switched or controlled with an adjustable brightness difference.

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Positioning

The presence detector is designed for ceiling mounting.

Sensing range

The square sensing range guarantees failsafe and easy planning. It allows complete cover of the room with the parallel circuit. Please note that the ranges for detecting people sitting and walking are different sizes. The recommended assembly height is 2 m – 3 m. The sensitivity of the detector reduces as the assembly height increases. From assembly heights of 3 m, walking movements are required and the edge areas of the sensing ranges of several detectors should overlap.

View of sensing range
(Assembly height 3.0 m)

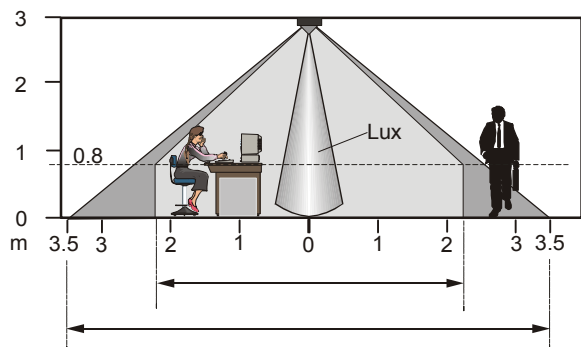


Figure 1: Side view of the sensing range.

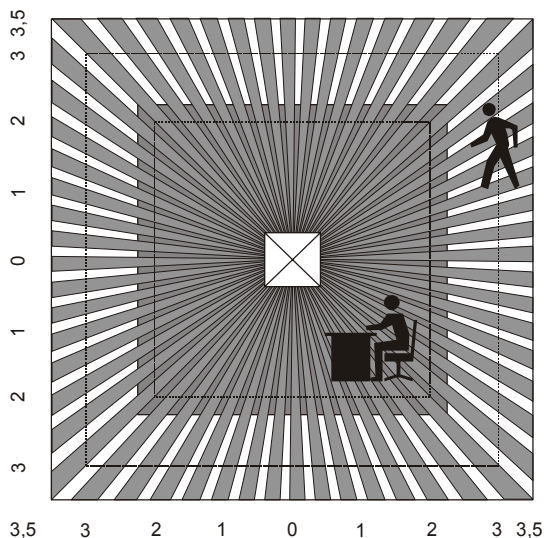


Figure 2: Top view of the sensing range.

Table of sensing ranges

Room height [m]	Sensing range [m]	
	Sitting persons	Walking persons
2.0	approx. 3.0 x 3.0	approx. 4.5 x 4.5
2.5	approx. 4.0 x 4.0	approx. 6.0 x 6.0
3.0	approx. 4.5 x 4.5	approx. 7.0 x 7.0
3.5	- - -	approx. 8.0 x 8.0

UP 258/21 presence detector	Data
Sensing range horizontally	360°
vertically	120°

- The presence detector requires an unobstructed view of the persons to be detected.
- Persons moving behind walls, even those made of glass, will not be sensed/detected.
- The reception characteristics of the detector must be taken into account when selecting the assembly locations.
- The integrated brightness sensor measures the daylight component and can thus send commands to the KNX EIB system to switch artificial light on or off. The brightness thresholds can be parameterized using ETS.

Sitting persons:

The specifications relate to the reduced sensing range for movements at table height (approx. 0.80m). The sensing sensitivity is reduced from an assembly height of > 3 m; stronger movements are required for clear sensing.

Walking persons:

Use of whole sensing range with small tolerance in edge area (+/- 0.5m).

Measuring brightness

The UP 258/21 presence detector has a mixed light measurement which is affected by artificial light.

Switching: In the case of indirect lighting, the artificial light at the assembly location of the detector must not exceed 2000 Lux (brightness switching value >200 Lux). If the brightness switching value is set to "on", the brightness measurement is turned off (no effect on brightness required).

Constant light control: The detector must be positioned so that it only detects artificial light which it controls itself. Artificial light controlled by other detectors and work lighting switched manually affect the brightness measurement of the detector. The assembly location becomes the reference for the level of lighting in the room. Direct artificial light on the detector should be avoided.

UP 258/21 presence detector**5WG1 258-2AB21****Suitable lamps**

The UP 258/21 presence detector is designed for operating fluorescent lamps (FL/PL) and halogen/incandescent lamp light.

Accessories**Surface-mounting frame**

An appropriate frame is available for surface mounting. (5WG1 258-3EB21)

Service remote control QuickSet plus (optional)

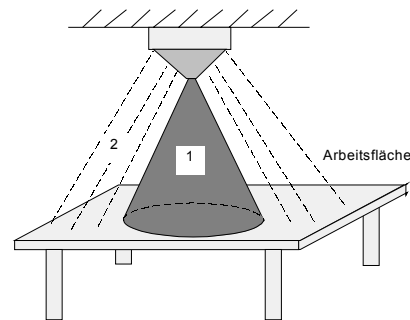
QuickSet plus allows efficient calculation of the desired brightness value taking into account factors such as furnishings, assembly location, light exposure, etc. This remote control can be purchased from HTS High Technology Systems AG through wholesale.

User remote control clic (optional)

An infrared remote control is available for the user. It allows individual switching and dimming of a maximum of two lighting groups. Two scenes can be displayed. Neighboring groups can be demarcated from each other. Telegrams for controlling further bus devices such as blind actuators can be sent where required. This remote control can be purchased from HTS High Technology Systems AG through wholesale.

Application program**0701 CO Light, HVAC, monitoring, brightness 802412**

- One or two light outputs as required
- Switching or constant light control
- Presence output for controlling HVAC
- Monitoring output with cyclic message object
- Brightness output with cyclic output of brightness value in Lux
- Parallel connection of master-slave, master-master for gap-free cover of large surfaces
- Separate disabling function for light and presence
- Scene control with two scenes per lighting group
- Service remote control QuickSet plus (optional, from HTS High Technology Systems AG)
- User remote control clic (optional, from HTS High Technology Systems AG)

Functional description of presence detector

- 1 Brightness measuring range
- 2 Reception range of presence detector

Figure 3: *Brightness sensor – reception characteristics***WARNING**

- The device must be installed and commissioned by an authorized electrician.
- The device must not be inserted into the same socket as 230 V devices and/or 230 V cables.
- The prevailing safety and accident regulations must be observed.

Technical data**Power supply**
via the bus line**Display elements**

- Red LED indicates detection in test operation

Connections

- Bus terminal

Mechanical data

- Housing: ABS plastic
- Dimensions (L x W x D):
103 x 103 x 60 mm
- Weight: approx. 75g
- Fire load: approx. 2500kJ

Electrical safety

- Protection rating (acc. to EN 60529): IP 40
- Bus: safety extra-low voltage (SELV) 24 V DC
- Device complies with EN 50090-2-2

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Electromagnetic compatibility

Complies with EN 50081-1 and EN 50090-2-2

Environmental conditions

- Climatic conditions: EN 50090-2-2
- Ambient temperature: - 0 ... + 50 °C
- Storage temperature: - 25 ... + 70 °C
- Relative humidity (non-condensing): 5% to 93%

Approval mark

EIB / KNX;

CE marking

according to EMC Directive/Low Voltage Directive

Location and Function of the Display and Operating Elements

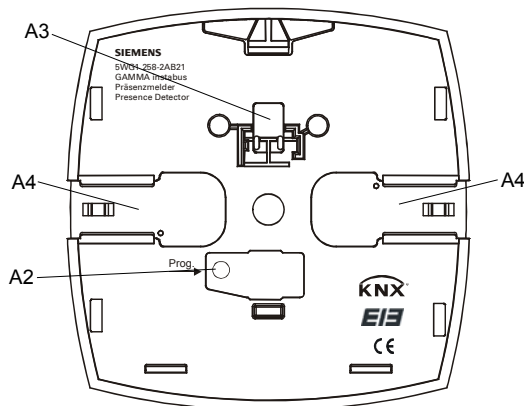
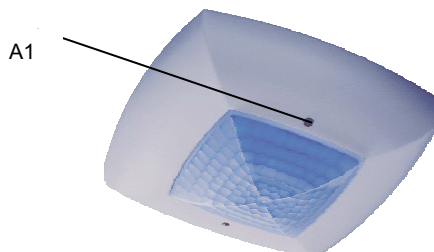


Figure 4: Position and function of control elements

- A1 Programming LED
- A2 Learning key for switching between normal mode and addressing mode for accepting the physical address
- A3 Bus terminal
- A4 Locking slide



LED red: for displaying normal mode (LED=off) or addressing mode (LED=on); it goes out automatic after the physical address has been accepted and then displays the test operation and any valid remote control commands which have been received.

Mounting type

Ceiling mounting

- See diagram and table for ceiling mounting (Figures 1-3)
- Range is dependent on assembly height
- High sensing sensitivity, gap-free cover throughout entire range
- Arm and hand movements sufficient to detect motion

Assembly of presence detector

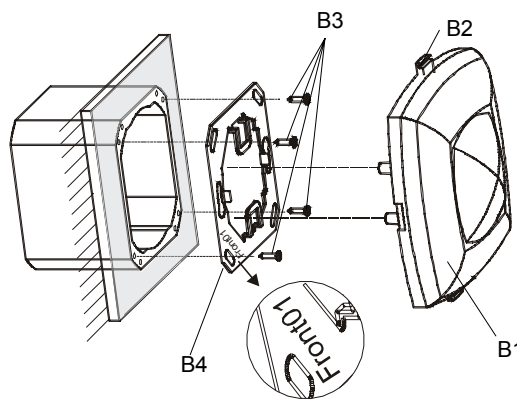


Figure 5: Assembly of presence detector

- B1. UP 258/21 presence detector
- B2. Locking slide
- B3. Fixing screws
- B4. Mounting plate

UP 258/21 presence detector**5WG1 258-2AB21****General description**

The presence detector is connected to the bus directly through the bus terminal. The bus coupling unit is integrated into the device.

- Screw mounting plate (B4) onto flush-mounting switch and socket box with screws (B3).
- Open the two locking slides (B2) and lock.
- Engage presence detector (B1) on mounting plate (B4);
- Unlock the two locking slides (B2) and snap firmly into the mounting plate (B4).

Note:Assembly location of presence detector

Normally, the switching performance is determined by the presence of persons in the sensing range of the detector. In exceptional cases, however, inadvertent switching can occur as a result of "external influences". Possible "sources of interference" should therefore be eliminated during configuration or before assembly.

Restricted view of detector:

- Suspended lights cause shadowing in the sensing range if mounted in the immediate vicinity of the presence detector.
- Barriers, shelves, large plants etc. can restrict the sensing range.

Simulated motion:

- Quick temperature changes in the area surrounding the detector resulting from radiators switching on or off, fans etc. simulate motion if the air streams are directed directly onto the lens or onto objects in the immediate sensing range of the detector.
- Illuminants turning on or off in the immediate sensing range (particularly incandescent and halogen lamps) simulate motion.
- Moving objects such as machines, robots, flapping posters, falling petals, warm paper from laser printers, animals etc.

Slow-heating objects which do not have a disruptive effect; they do not affect the switching performance of the detector:

- Radiators (lateral distance from cables and radiators > 0.5 m), floor heating
- EDP systems (computers, screens)
- Room ventilation systems, if warm supply air is not directed directly at detector
- Surfaces with sunlight
- Fish in a fish tank

Restricted sensitivity:

- The presence detector used has an IR sensor and reacts to temperature differences.
- The smaller the difference between the ambient temperature and the temperature of the moving object, the less sensitive the evaluation is. This means that it is then harder to detect moving objects and the sensing range is restricted.

Assembly location of presence detector with simultaneous change in brightness

The daylight measurement calculates an average brightness value in the room, which may differ from the brightness on the workspace. Assembly locations with extreme light conditions should therefore be avoided.

- If the detector is fixed near to lights with a high indirect light component, the strength of the artificial light at the assembly location of the detector must not exceed the desired nominal illuminance in the room. This can be compensated by increasing the distance between the light cone and detector. Direct artificial light on the detector should be avoided for constant light control.

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Commissioning

The UP 258/21 presence detector is commissioned using the ETS.

A service remote control QuickSet plus from HTS High Technology Systems AG can be used for faster setting of values. This device can be purchased through wholesale.

This makes it easier to adjust the brightness values.

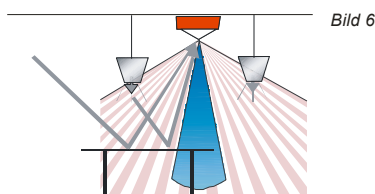


Bild 6

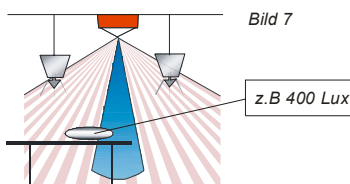


Bild 7

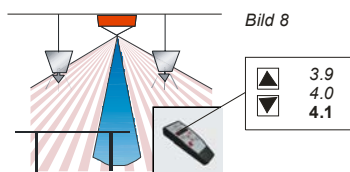


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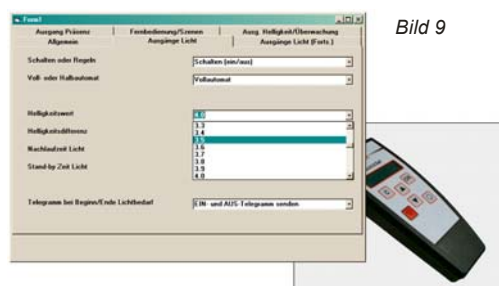


Bild 9

- Adjust the brightness by varying the artificial light and shutter/blind until it corresponds to the desired value on the workspace (Figure 7).
E.g.: 400 Lux are required on the workspace. Adjust the shutters/blinds so that the luxmeter on the work-

space indicates approx. 400 Lux.

In the case of dimmable lighting, the brightness should wherever possible consist half and half of artificial light and daylight.

E.g.: 400 Lux are required on the workspace.

Adjust the shutters/blinds with the lighting switched off so that the luxmeter on the workspace indicates approx. 200 Lux. Then dim the lighting slowly until the luxmeter indicates approx. 400 Lux.

- With QuickSet plus, send the values to the detector in ascending or descending order in the "Brightness" menu (Figure 8).
- If the value sent is too small the LED flashes briefly (error flashing), and if the value is too large the LED flickers for one second.
- The value at which the detector no longer shows error flashing, but simply flickers (e.g. 4.1) must be queued in the parameter window of the ETS as the brightness value (Figure 9).
This value is now the new setpoint value for the detector.
- The established setpoint value takes into account the reflection factor and in turn factors such as furnishings, assembly location, light exposure etc.

Test mode

The purpose of the test operation is to check the presence sensing and the logic operations (parallel connection of master-slave, master-master).

Caution: Constant light control is switched off in test operation, i.e. after power-up the lighting always dims to 100%. The device always reacts as a fully automatic device.

- Set detector to "Test Operation" with service remote control QuickSet plus or using ETS (set all detectors to "Test Operation" in the case of parallel circuit)
- The LED indicates just the motion signal without any switch-off delay time.
- Lighting is switched on if motion is detected.
- Once people are no longer present the lighting turns off after 10 sec.
- At the end of the tests, reset the detectors to "normal operation" using QuickSet plus or using ETS. A test operation set with the ETS cannot be exited with QuickSet plus. A test operation set with QuickSet plus ends automatically after 10 min.

Dismantling

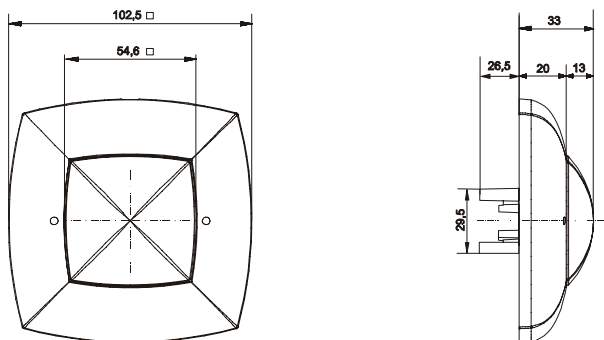
- Open the two locking slides (B2) and lock.
- Remove presence detector (B1) from mounting plate (B4).
- Unplug bus terminal from device.

UP 258/21 presence detector

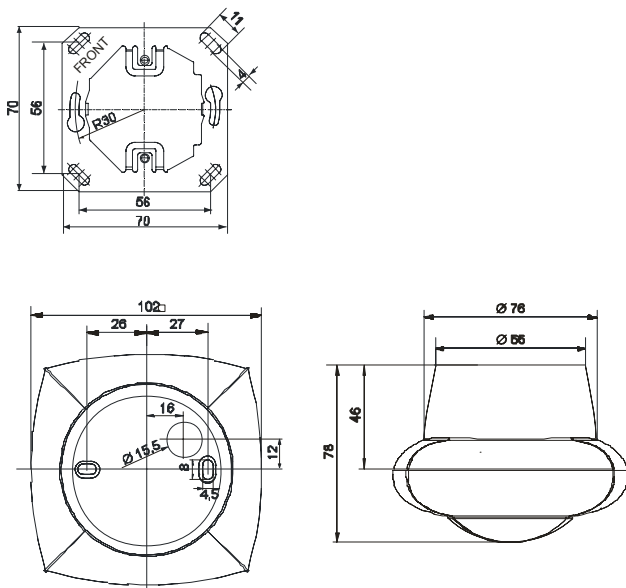
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Dimensional picture of UP 258/21 presence detector

Dimensions in mm



With surface-mounting housing



General Notes

- Any faulty devices should be returned to the local Siemens office.
- If you have further questions concerning the product please contact our technical support:

☎ +49 (0) 180 50 50-222

☎ +49 (0) 180 50 50-223

☐ www.siemens.com/automation/support-request

GAMMA *instabus*

Technical Product Information

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Space for notes