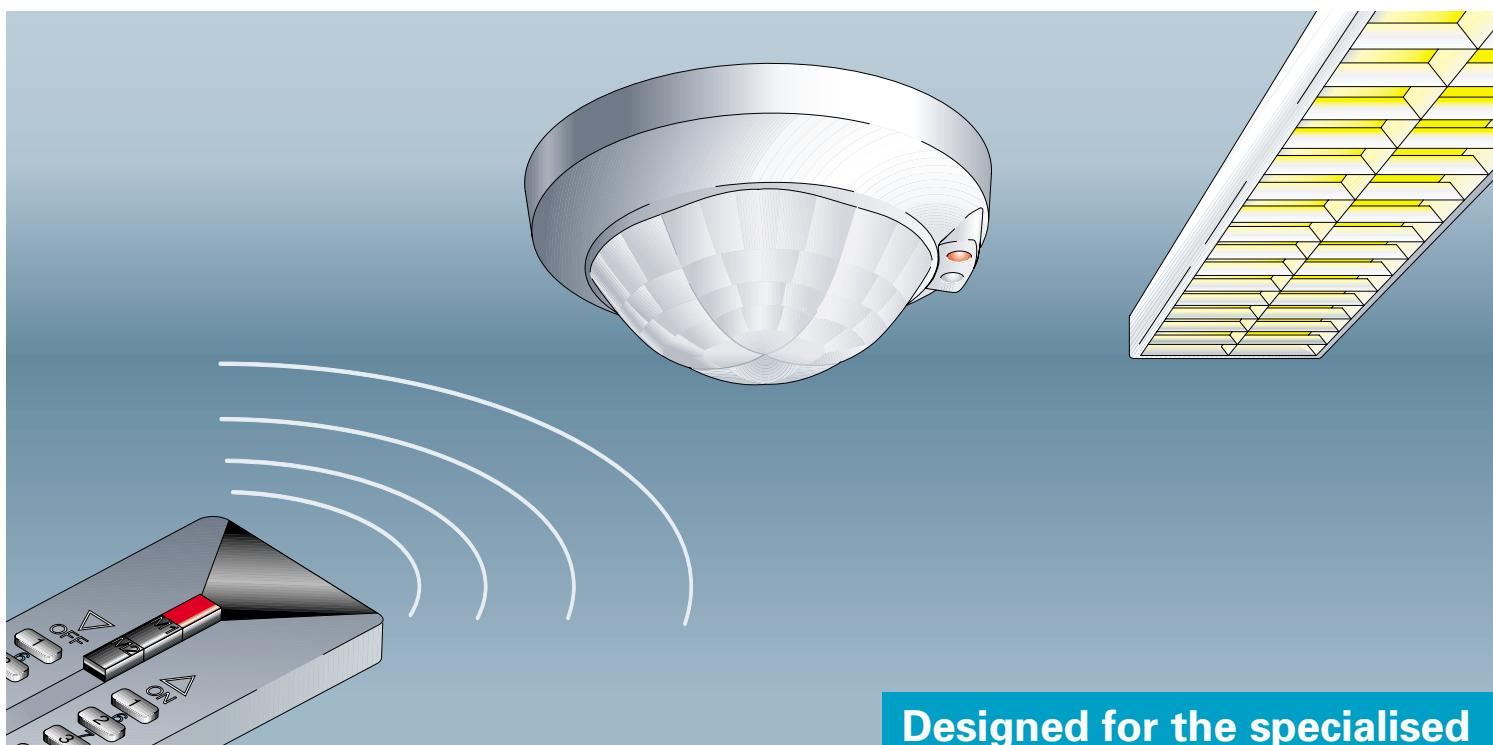


Busch-Watchdog® Presence Busch-Watchdog® Presence EIB



Save energy conveniently

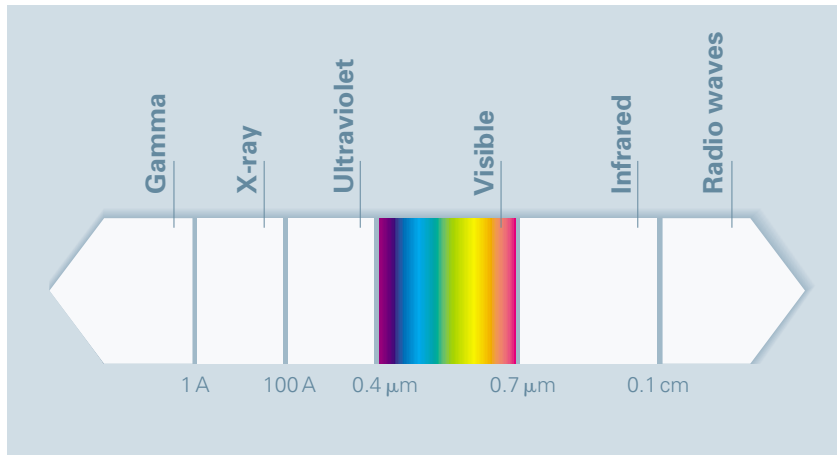
Designed for the specialised
electrical industry

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Basic principles

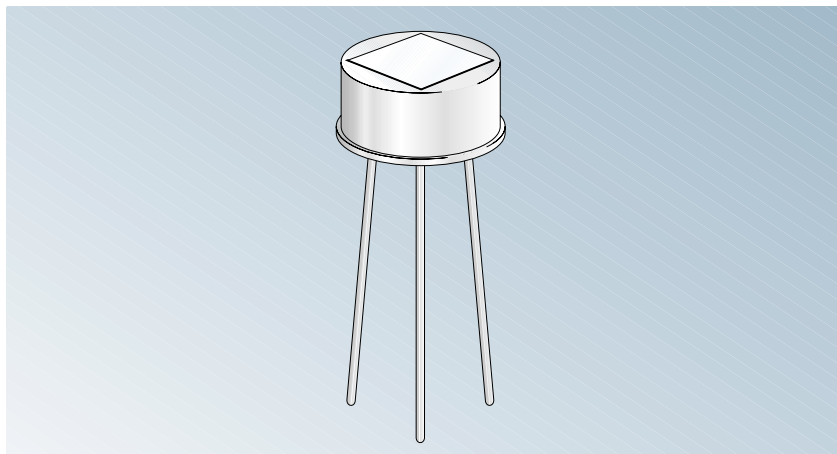
Infrared radiation, also known as thermal radiation, is associated with electromagnetic waves. Each object emits thermal radiation according to its specific temperature.



IR sensor technology

Traces of infrared can be detected with infrared sensors and converted into electrical signals. As these

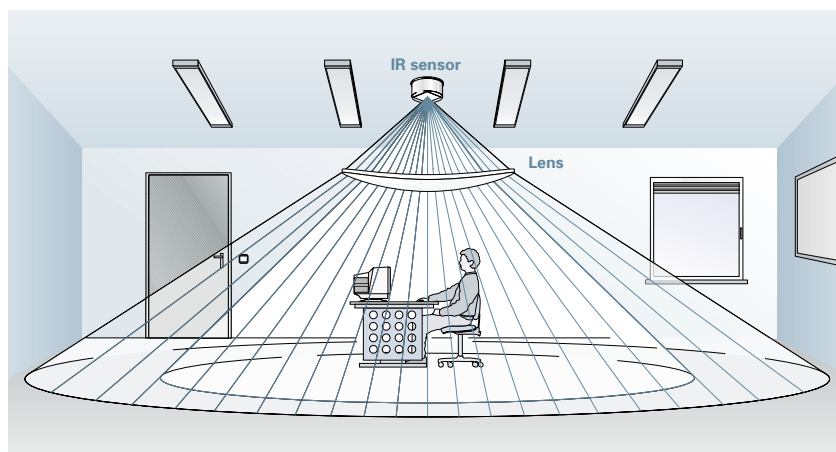
sensors only receive and do not emit any infrared radiation themselves, they are also called "passive" IR sensors.



Passive IR sensors

Passive IR sensors are designed so that they only react to changes in thermal radiation e.g. due to movement. If the thermal radiation is at a constant level, no signals are produced.

As a room heats up, its thermal radiation changes at a very slow rate in comparison. It is thereby guaranteed that any movement by people (thermal movement) can be detected.



Optical system

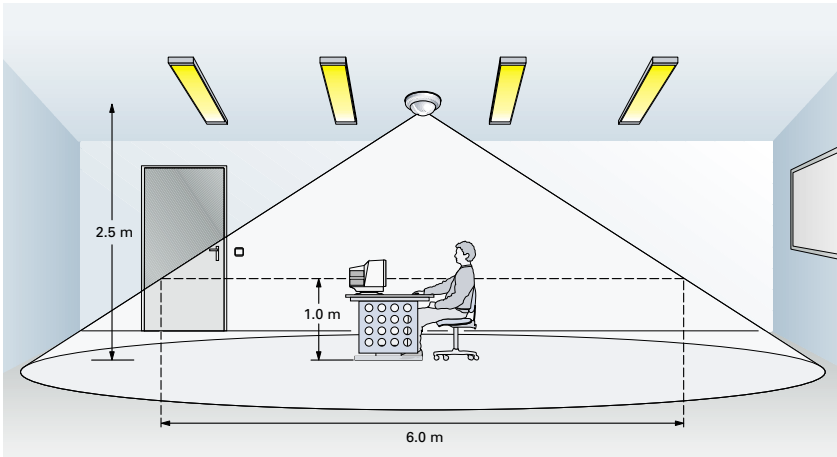
The monitored area is divided into numerous fields or segments with the aid of lenses, mirrors and sensors. If someone moves from one segment to another, this movement is detected. The higher the number of segments, the smaller the movement needs to be

for detection purposes. The Busch-Watchdog® Presence has 4 sensors, an optimised lens and an additional high-quality system of mirrors so that even the slightest movement from people who are seated can be reliably detected.

Prerequisites for detection of people

The movement of people, including the slightest movements made while sitting at a PC workstation, is dependent on the mounting height and the

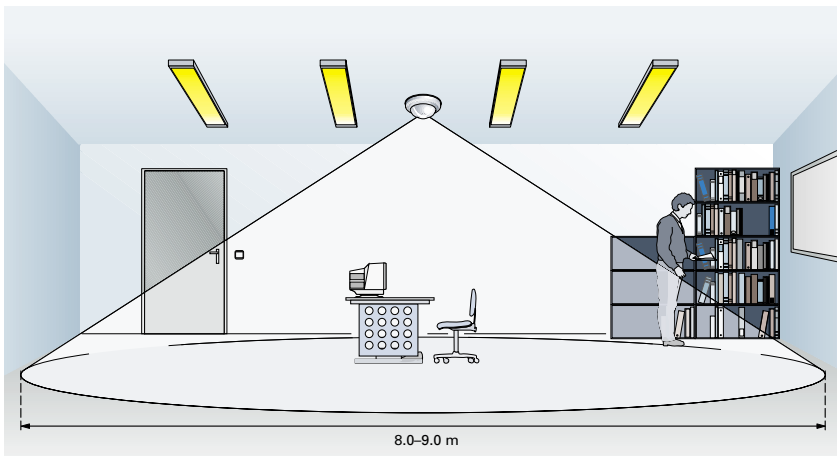
“clear view” of the Busch-Watchdog® Presence.



Interior detection area (with people sitting down)

People who are seated must be positioned completely within the detection area. The smaller the distance between the person and the Busch-Watchdog® Presence = 2.5 m). At a greater mounting height, the smaller the movement needs to be for detection

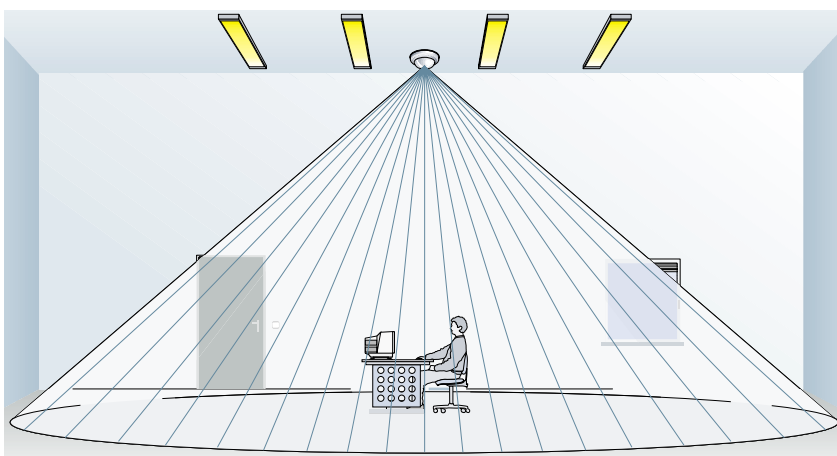
purposes. The reference level for the detection of seated activities is approx. 1 m. At this height, the detection area is 6 m in diameter (mounting height of the Busch-Watchdog® Presence = 2.5 m). At a greater mounting height, the detection area will be larger but the monitoring density will be reduced.



Exterior detection area (with people walking)

When detecting people who are walking around, a larger detection area is

available. The reference level for the detection is the floor. The diameter of the detection area produced is 8 to 9 m.



Mounting heights

The detection properties change dependent on the mounting height. As the mounting height increases, the sensitivity and monitoring density are

reduced. Depending on the application, a greater resolution is not required and a higher mounting height is possible (e.g. in storerooms, corridors, hallways).

Mounting height	Seated people*	Walking people
2.0 m	4 m	8 m
2.5 m	6 m	10 m
3.0 m	8 m	12 m
3.5 m	10 m	14 m
4.0 m	12 m **	16 m
5.0 m	16 m **	20 m

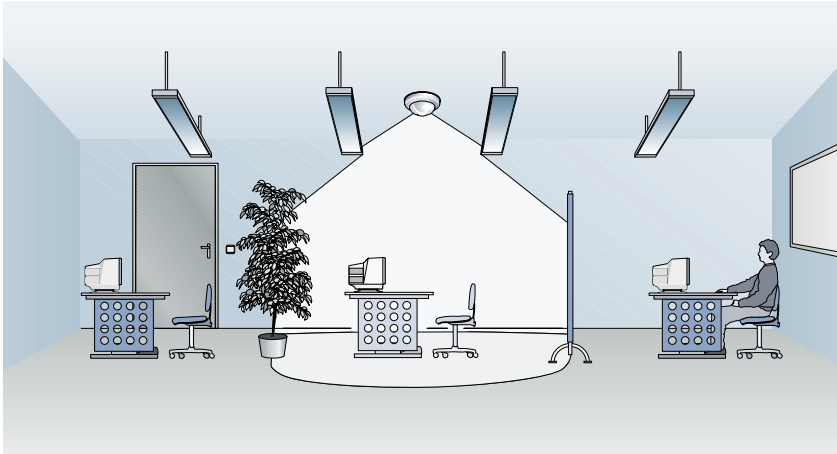
*Seated height: 1 m

**No longer suitable for pure 'deskwork' or OFF delay > 15 min

Interference sources

Switching operations are normally triggered by people moving around. External heat sources can also cause unwanted switching

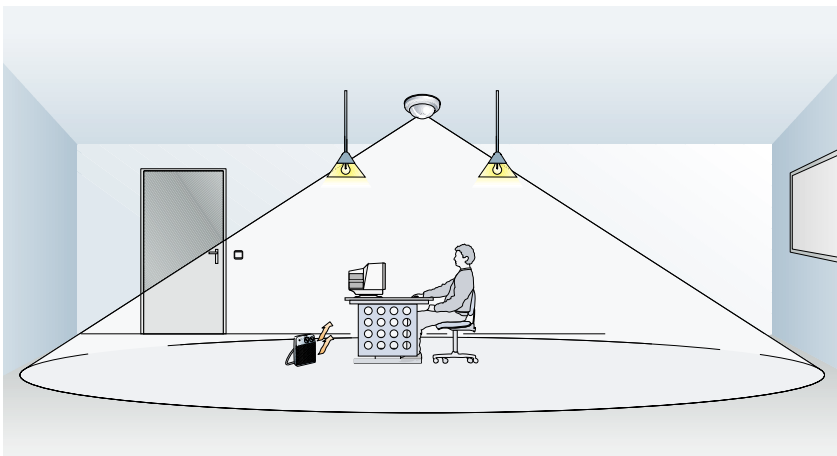
operations which should be taken into account at the planning stage.



Limited view of the Busch-Watchdog® Presence

The detection area of the Busch-Watchdog® Presence can be concealed by different objects e.g.

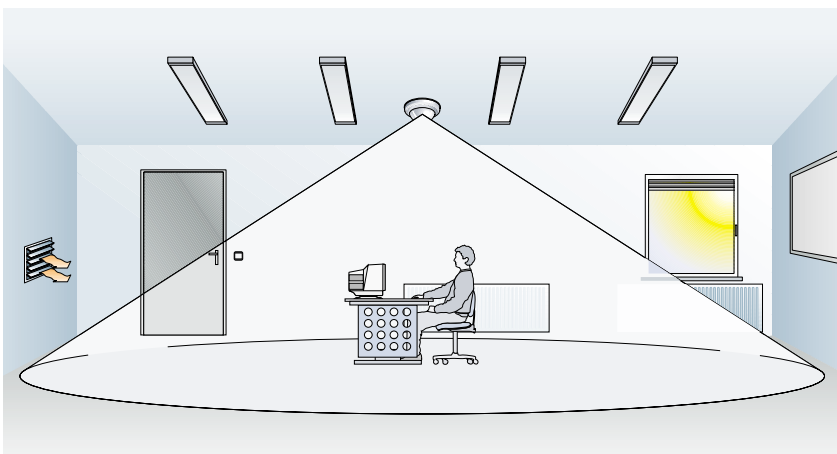
- strips of luminaires which have been inserted deeper than the Busch-Watchdog® Presence
- large plants
- partition walls
- panes of glass



External heat sources

Rapid temperature changes in the environment of the Busch-Watchdog® Presence can likewise trigger unwanted switching operations e.g.

- additional fans
- switching on/off of lamps which are in the direct vicinity (< 1.5 m) of the Busch-Watchdog® Presence, especially incandescent and halogen lamps
- moving machinery, flapping posters



Heat sources without a disruptive influence

If the temperature only changes slowly, it has no influence on the switching behaviour of the Busch-Watchdog® Presence e.g.

- radiators (distance > 0.5 m)
- surfaces warmed by the sun
- EDP systems (computers, printers, monitors)
- ventilation systems as the warm air is flowing directly into the detection area of the Busch-Watchdog® Presence

Setting options

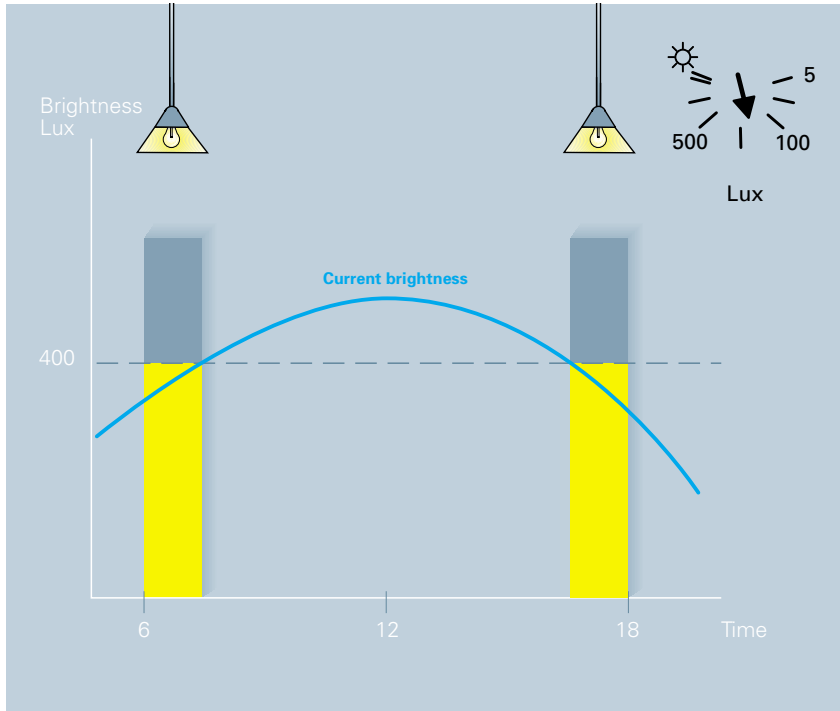
1. Measuring daylight

A main advantage of the Busch-Watchdog® Presence lies in the evaluation and disconnection of the lighting without

dependence on movement in order to achieve the greatest potential for saving energy. In contrast to conventional motion detectors which are only

activated below a dusk value, the Busch-Watchdog® Presence must constantly measure and assess the brightness and then switch the light on or off

accordingly.

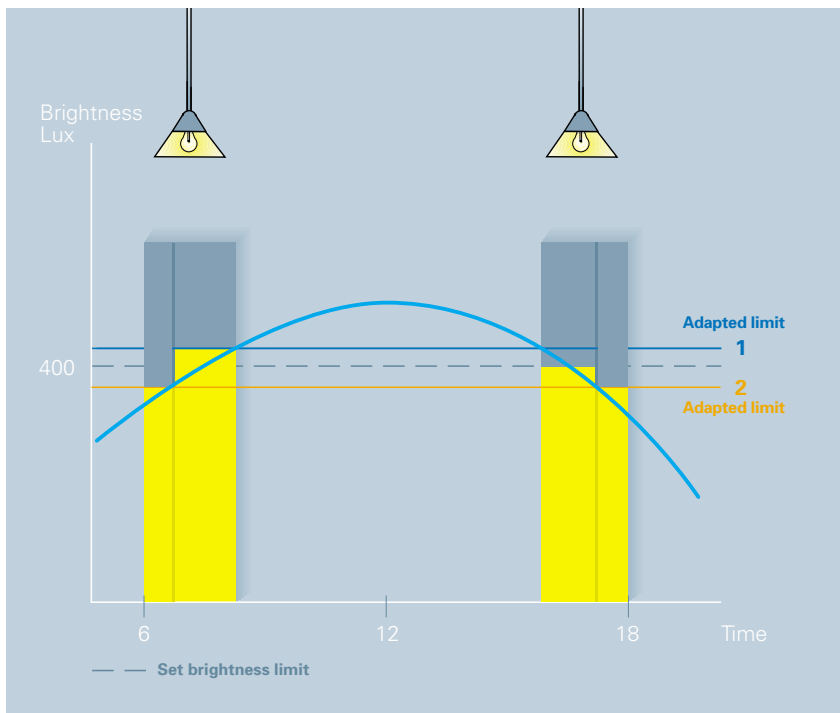


Selection of the brightness limit

The brightness limit can be selected with the help of the "Lux" setting. When this limit is exceeded, the lighting is switched off while the light is switched on again when the value drops below this limit. It should be noted that the Busch-Watchdog® Presence measures the brightness at the installation site (on the ceiling).

The ambient brightness is not only taken into account but also the reflected light of surfaces lying below it (e.g. desk). This brightness is dependent on the conditions (reflective properties) of the corresponding surface (see table). In case of doubt, a reference measurement is required at a workstation to define the actual conditions.

Setting on the "Lux" potentiometer	Brightness on the work surface	Comments
100	Approx. 500 lux	Poor reflection ("dark" surface)
100	Approx. 400 lux	Medium reflection
100	Approx. 250 lux	Good reflection ("light" surface)



Adaptation of the brightness limit via IR remote control*

The Busch-Watchdog® Presence enables a simple adaptation of the set brightness value using IR remote control without disrupting the operating sequence and installation work.

1 Brightness limit is set too low

This means that the lighting is switched off too early. The lighting is switched on via remote control and the brightness value is stored. The current brightness

value measured at the workstation is thus stored as the new higher brightness limit.

2 Brightness limit is set too high

This means that the lighting is still switched on although the daylight coming into the room would be sufficient.

The lighting is switched off via remote control and the brightness value is stored. A lower current brightness limit is therefore stored and the lighting is switched on earlier.

See diagrams on page 10 for setting of the remote control

* The function is not available for the Busch-Watchdog® Presence EIB as modifications can be carried out in this case via the laptop

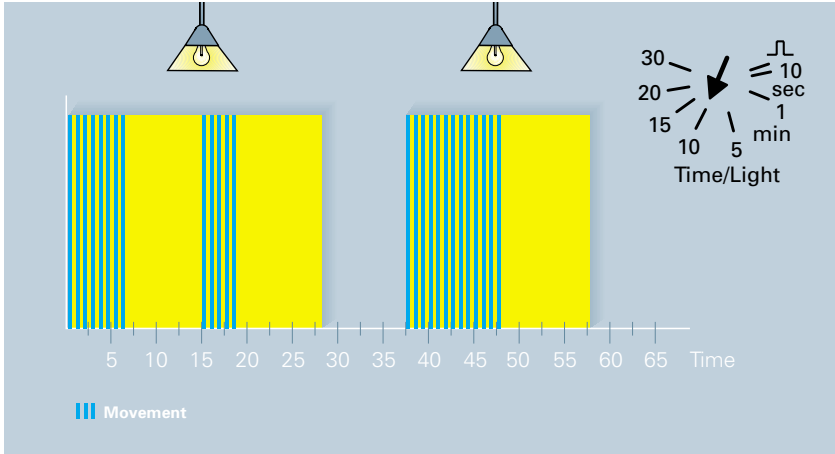
Setting options

2. OFF delay

The OFF delay is set when bridging idle times and irregularities in the sequences within the detection area (e.g. leaving

the room temporarily). The settings "Time/Light" and "Time/HVAC" are used for this. An intelligent ON delay for heating, ventilation and air

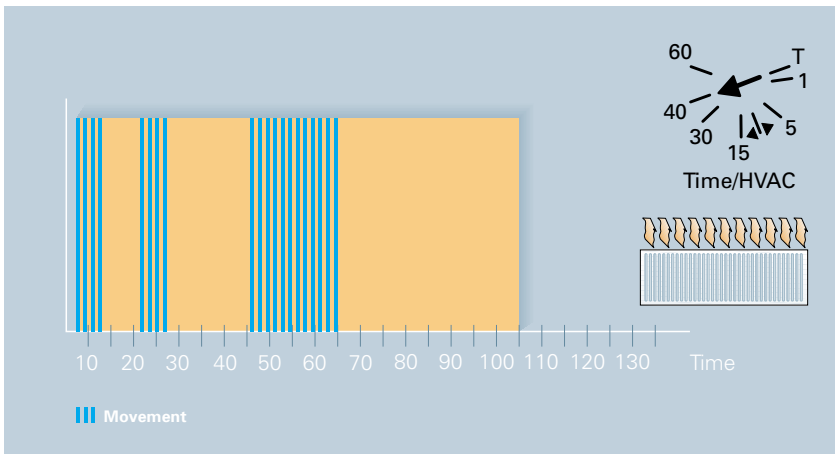
conditioning applications is also integrated in the setting "Time/HVAC".



Setting the OFF delay for the lighting

An OFF delay for the lighting can be selected via the potentiometer "Time/Light". The time should be selected dependent on the application. In applications

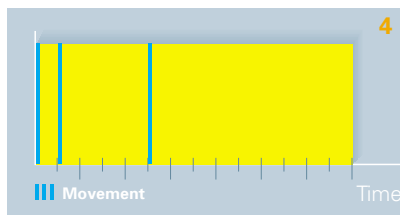
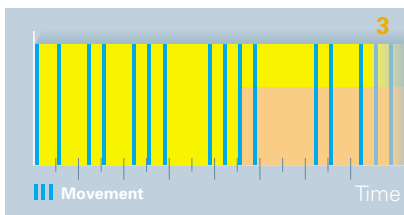
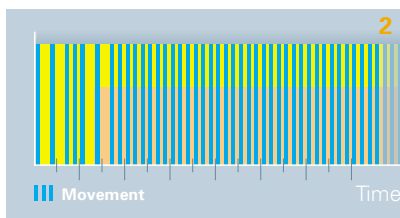
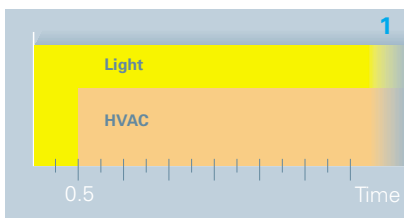
with low movement potential (e.g. at PC workstations etc.), an interval > 10 minutes is recommended. A shorter period can be set in rooms with more movement (storerooms, corridors etc.)



Setting the OFF delay for HVAC

The setting "Time/HVAC" is available for applications in heating, ventilation and air conditioning technology. The OFF delay should be selected dependent on the

inertia of the systems in use. In heating systems, a time range between 20 and 30 minutes is recommended. Shorter periods (approx. 5 minutes) should be considered in connection with fans..



Intelligent ON delay

Depending on its use in the heating/ventilation/air conditioning (HVAC) sector, the Busch-Watchdog® Presence takes into account specific requirements which

are defined in connection with the desired OFF delay. It is thus guaranteed that the HVAC output is only switched on if continuous movement has been detected.

Setting for OFF delay	ON delay	Application	HVAC output
< 10 min.	30 sec.	Ventilation/ WC	Always switches
> 10 min.	Motion-dependent up to 15 min.	Heating/ office	Only switches after continuous movement

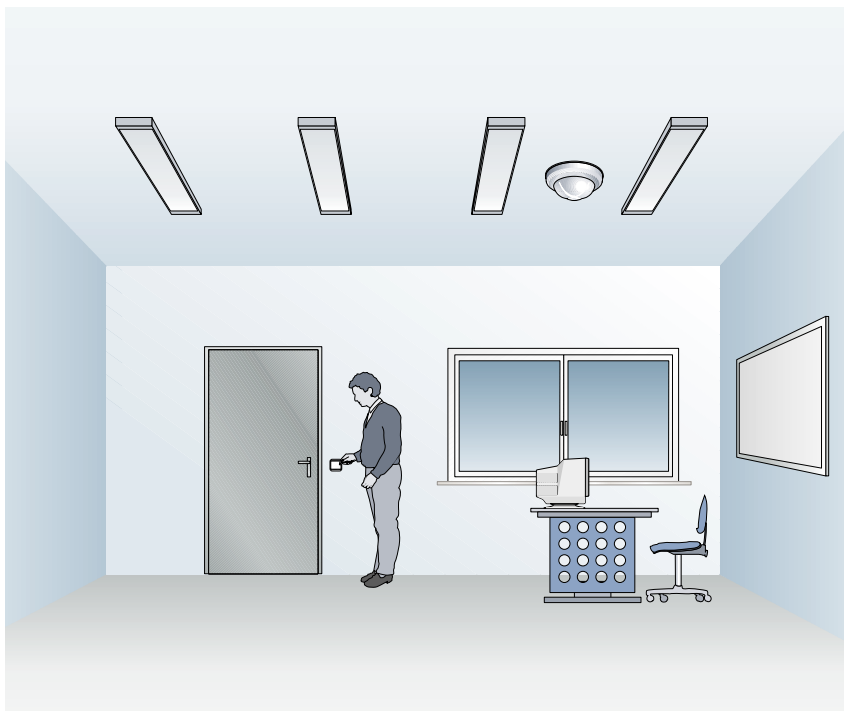
Extension input operation

If required, the Busch-Watchdog® Presence offers the possibility at any time for manual intervention into automatic

processes. The lighting can for example be switched off in this way for presentations. In exceptional cases, it is possible to

switch on the lighting directly at any time regardless of the selected setting. The return to the automatic mode is carried out

“automatically” according to fixed rules.



Push button operation*

In this case, conventional plateswitches are connected to the extension inputs of the respective flush-mounted inserts.

1. Lighting is switched on

The lighting can be switched on (if already off) by pressing the rocker on a connected plateswitch. The automatic mode is reactivated:

- if no movement has been detected for 30 minutes and the brightness value has fallen below the limit

- after continuous movement and underflow of the brightness limit over 4 hours.

2. Lighting is switched off

The lighting can be switched off (if already on) by pressing the rocker on a connected plateswitch. When the lighting is switched on again for a minimum of 2 hours, the Busch-Presence reverts to automatic operation, where the light setting is dependent on movement and brightness.



Active extension unit*

In large rooms in which one Busch-Watchdog® Presence is not sufficient, the detection area can be extended using additional, economical extension units. The switching function is carried out by the master unit. It is advisable to install this master in the darkest place in the room and to define the brightness values measured as

references values for disconnection. The extension units are only used for detection of movement.

Active extension units with push button operation

Additional plateswitches can also be installed when active extension units are used. Their function is described above.

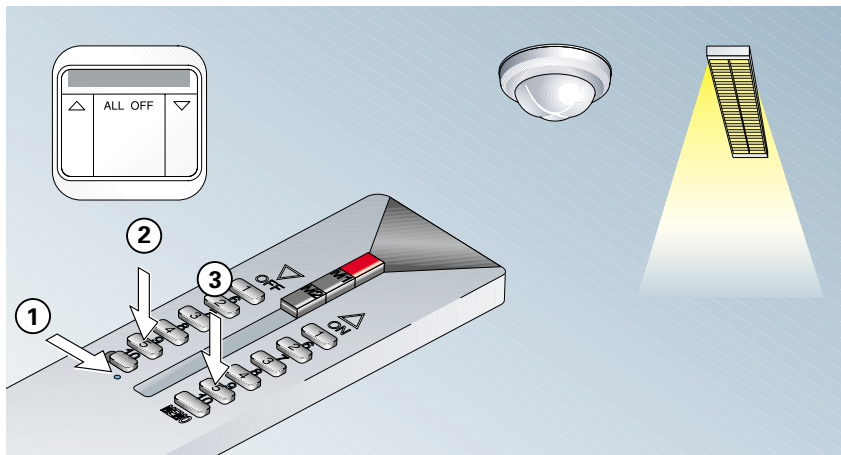
*Does not apply to the Busch-Watchdog® Presence EIB

Control with Busch-Ferncontrol® IR*

Apart from enabling the flexible adaptation of the brightness value, the remote control function can also be used to implement switching func-

tions e.g. in places where it is not possible to connect push button extension units during a retrofit.

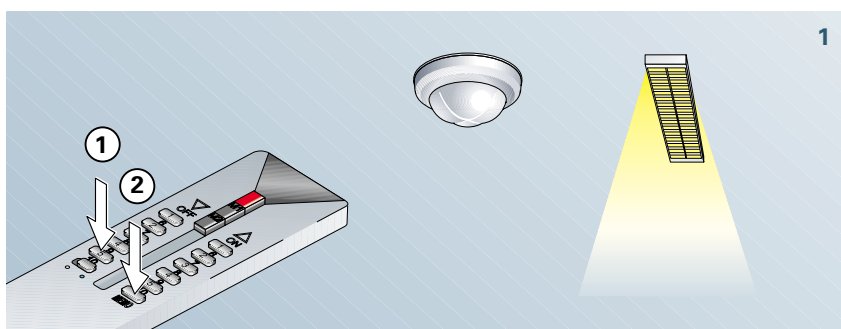
*Does not apply to the Busch-Watchdog® Presence EIB



Switching on/off with IR remote control

Channel 10 (blue) ① is located on the Busch-Ferncontrol® IR hand-held transmitter. The pair of push buttons 5 ② + ③ are reserved for the Busch-Watchdog® Presence. The lighting can be switched on

and off with the "ON/OFF" buttons. This function is identical to switching on/off using a conventional plateswitch. Wall-mounted transmitters are also available as an alternative to the hand-held transmitter for integration into the flush-mounted installation environment.



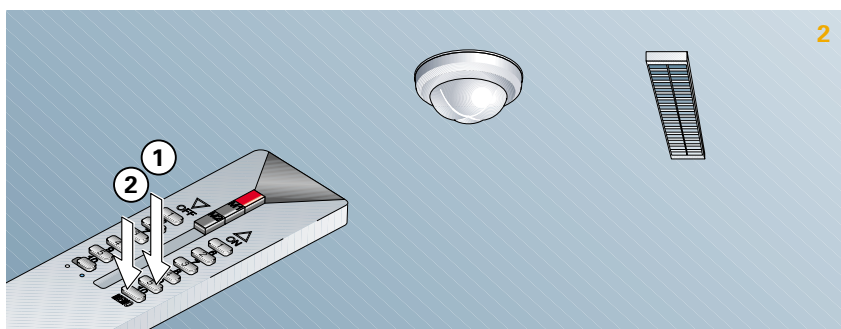
Storing the brightness limit via remote control

The brightness limit can be set via the "Lux" potentiometer. It is however more convenient to adapt the limit value via remote control without any additional assembly required.

adopts the current brightness value as the new brightness limit.

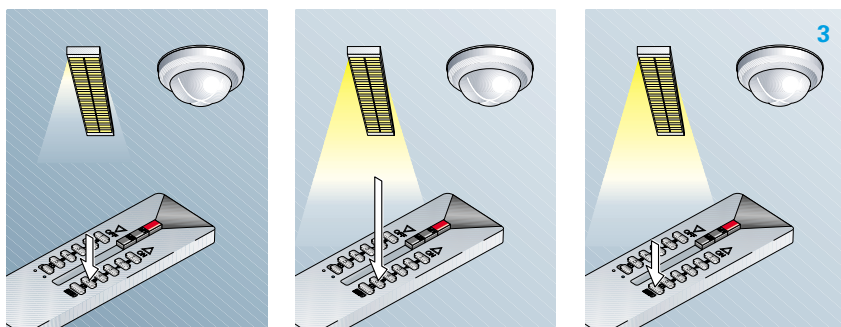
3 Adapting the brightness limit for constant lighting control

In connection with a flush-mounted dimmer insert, the lighting can be switched on or off or dimmed with remote control. The lighting is switched on and off after a short push button action but the brightness limit is not changed. The lighting can be dimmed with a long push button action. If the set brightness is to be stored as the limit value, the "Memo" button must be pressed twice. If the brightness is changed by a dimming process during normal operation (without pressing the "Memo" button twice), the automatic function is interrupted for 2 hours. The Busch-Watchdog® Presence then reverts to the original stored value.



1 Brightness limit is too low

The lighting is switched off too early. The lighting is switched on ① with remote control (push button 10, "ON" button) and the "Memo" button ② is then pressed twice. The Busch-Watchdog® Presence adopts the current brightness value as the new brightness limit.



2 Brightness limit is too high

The lighting is switched off too late. The lighting is switched off ① with remote control (push button 10, "OFF" button). The "Memo" button ② is then likewise pressed twice. The Busch-Watchdog® Presence

Areas of application

The Busch-Watchdog® Presence can be combined with various flush-mounted inserts depending on the application.

Area of application	Flush-mounted insert, order no.	HVAC	Active extension unit	Passive extension unit	Comment
Office	6402 U* 6401 U-102 6812 U-101	•		• •	Constant lighting control is recommended for more convenience
Large office	6402 U* 6401 U-102	•	• •	• •	
Meeting room	6402 U* 6401 U-102	•	•	•	
Conference room	6402 U* 6401 U-102 6590 U-103* 6550 U-101*	•	• • • •	• • • •	Constant lighting control ensures more convenience
Recreation room	6402 U* 6401 U-102	•			
Production area	6401 U-102 6812 U-101		•	•	
Laboratory	6401 U-102 6590 U-103* 6550 U-101*		• • •	• • •	Constant lighting control ensures more convenience
Classroom	6402 U* 6401 U-102	•	• •	• •	
Corridor	6401 U-102 6812 U-101		•	•	
Staircase	6401 U-102		•	•	
Entrance hall	6401 U-102 6812 U-101		•	•	
WC	6402 U* 6401 U-102 6812 U-101	•	• •	• •	Additional fan control
Cloakroom	6401 U-102 6812 U-101		•	•	
Storeroom	6401 U-102		•	•	

The following table contains suggestions for equipment related to applications. Further combinations are possible.

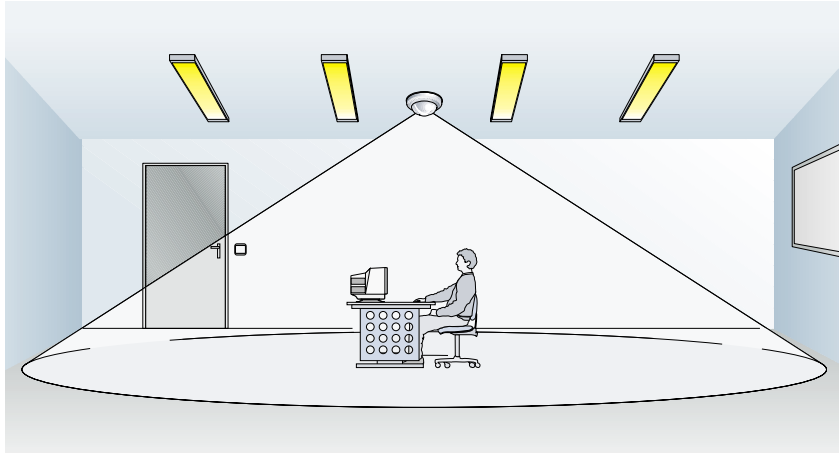
* in preparation

Application example: Single office

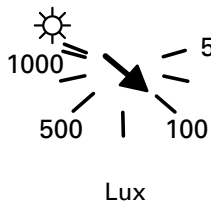
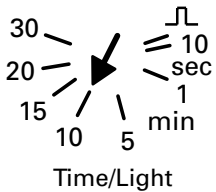
Task

The lighting in an office should be controlled efficiently via a Busch-Watchdog® Presence. It should also be possible to

switch the lighting on and off manually with a push button. The heating should then be integrated as the next phase.



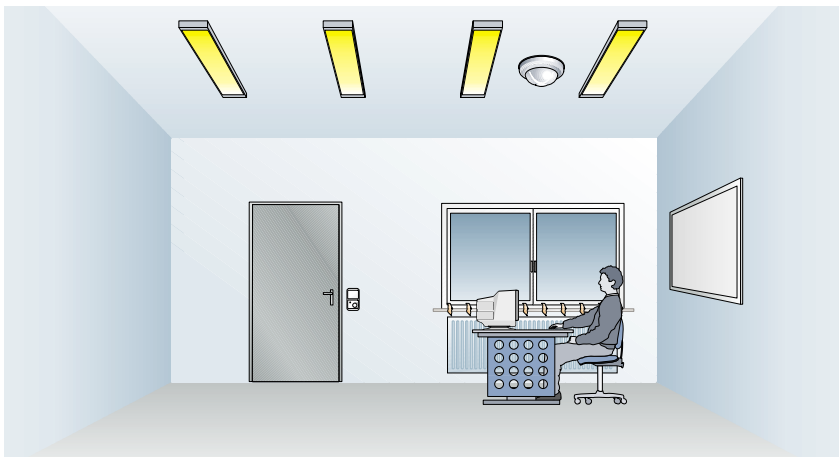
Example



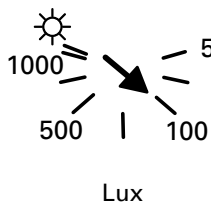
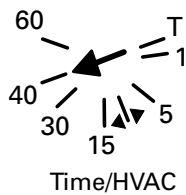
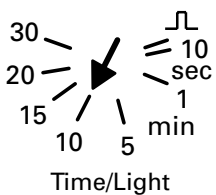
Installation and settings

The installation site of the Busch-Watchdog® Presence should be selected above the workstation to provide the best level of detection. The installation can be flush-mounted or surface-mounted if an adapter is used. The brightness setting is carried out via the "Lux" potentiometer. A setting between 50 and 100 lux measured at the ceiling

can correspond to a brightness level of 300-400 lux at the workstation, depending on the reflective properties of the room. The OFF delay is defined in these applications at approx. 10 minutes. An adapter is provided for the simple mounting/dismantling of the sensor during the adjustment and installation stage.



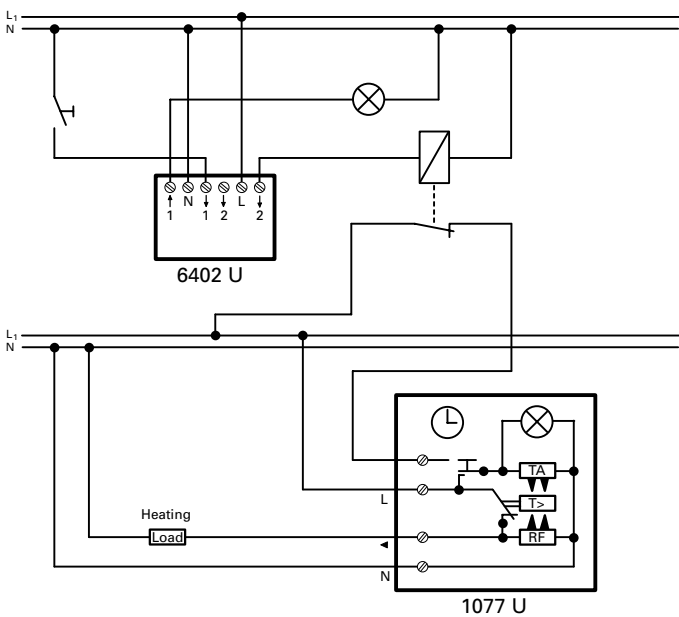
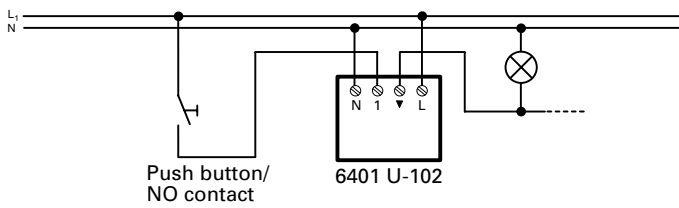
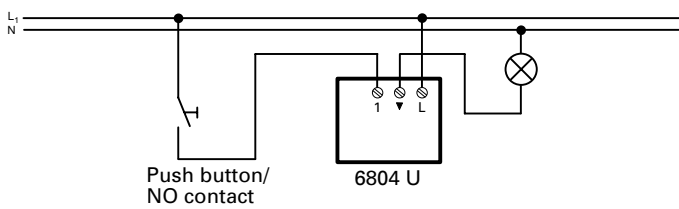
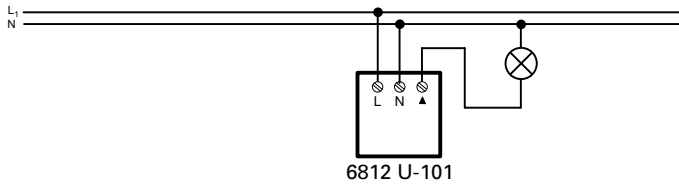
Example



Additional integration of heating control

The greatest energy-saving potential lies in heating control. It is a good idea to reduce the temperature in the room via night reduction if no movement is detected. It is however generally not advisable to disconnect the heating completely. Each degree of temperature reduction leads to a saving in heating energy of approx. 6%. In the case of room temperature controllers with night reduction, the temperature is lowered by approx. 5°C. Depending on the thermostat used, the 230 V input for the night

reduction must be interrupted on detection of movement so that the thermostat regulates the temperature to the normal level. This circuit can be converted with the help of an external, NC relay contact. A motion-dependent ON delay is also linked to the OFF delay. If the OFF delay is set at > 10 minutes, the HVAC output is only activated if continuous movement is detected. It is not advisable for example to switch the heating on (or increase to comfort temperature) if someone briefly enters the room.



Automatic lighting control

Alternative 1

Application without extension unit:

Universal standard insert 6812 U-101

Load types:

max. 700 W/VA

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885

(if required)

Alternative 2

Application with extension unit:

Mos-Fet insert 6804 U

Load types:

min. 40 W, max. 420 W

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885

(if required)

Alternative 3

Application with extension unit:

Busch universal relay insert 6401 U-102

Load types:

max. 2300 W/VA

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885

(if required)

Automatic lighting and heating control

Application with extension unit and HVAC:

Busch universal series insert 6402 U*

Load types:

max. 2300 W/VA

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885

(if required)

Room temperature controller insert

1077 U

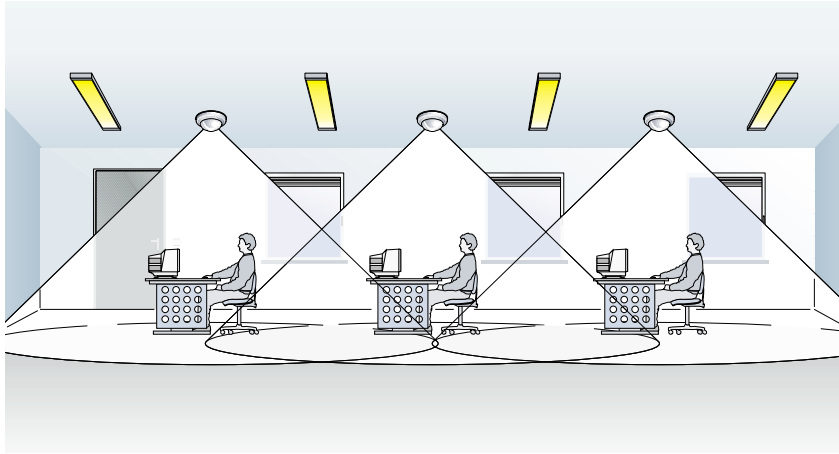
* in preparation

Application example: Large office (master/slave)

Task
The lighting in a large office should be controlled by the Busch-Watchdog® Presence. 3 detectors must be installed in parallel

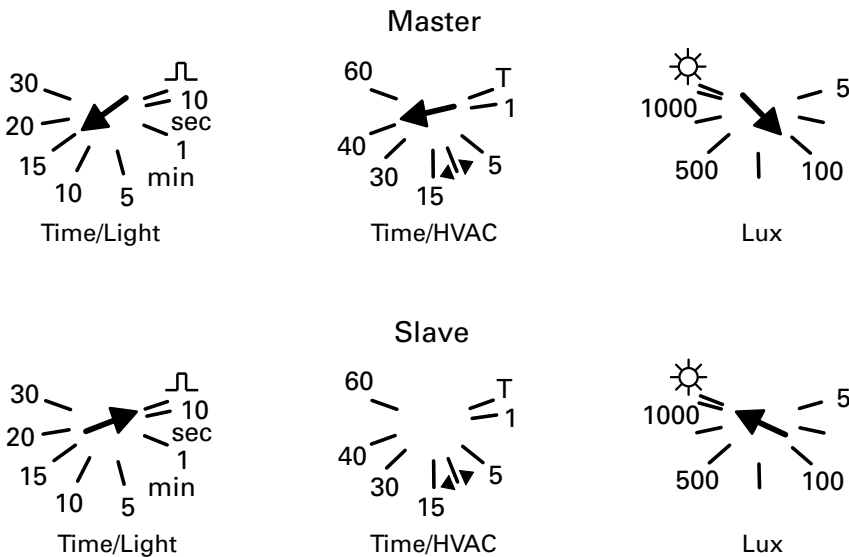
in order to cover the area completely. It should also still be possible to switch the lighting on and off via push buttons. The control of the heating system

should be motion-dependent and implemented as the next stage.

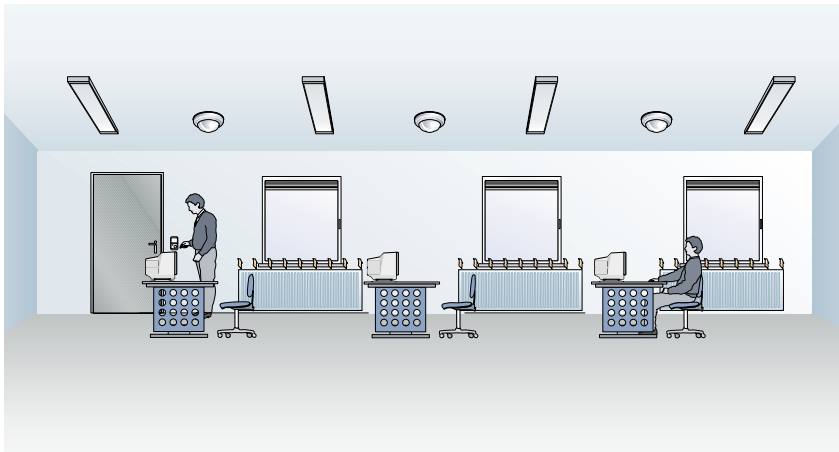


Installation and settings
The installation sites of the presence detectors must be selected directly above the workstations to provide the best level of detection. The sensors have an almost circular detection area. The areas must overlap slightly to guarantee that there are no gaps in the detection. The master which the load is connected to is responsible for monitoring the brightness level and the

OFF delay. Refer to the single office application for information about setting the potentiometer. The slaves have the task of routing detected movement to the master. To do so, the "Lux" potentiometer must be set to day mode (symbol: sun). The "Time/Light" potentiometer must be set to short-time pulse and the "Time/HVAC" potentiometer may not be set to test mode.

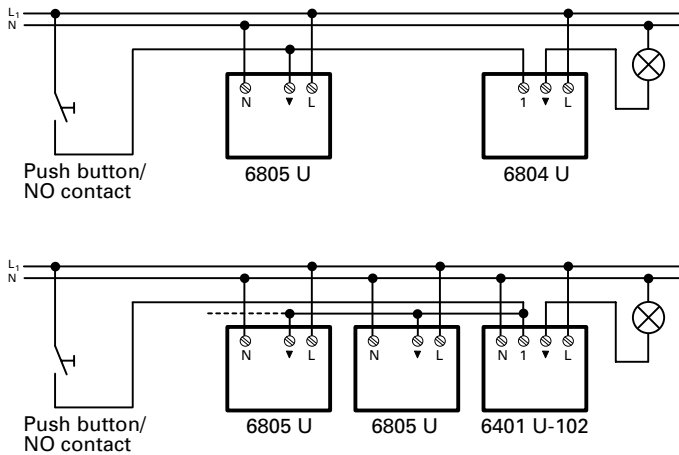


The "Time/HVAC" potentiometer may not be set to test mode.



Additional integration of heating control
The master alone takes on the task of heating control. The slaves only ensure that the heating is increased if movement is detected in their area. The settings of the master are identical to

those in the single office application. The slaves also only have the task of routing movement in their areas to the master. The potentiometer setting of the slaves is identical to the one described previously.



Automatic lighting control

Alternative 1

Mos-Fet insert 6804 U

Load types:

min. 40 W, max. 420 W

Busch extension unit insert 6805 U

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

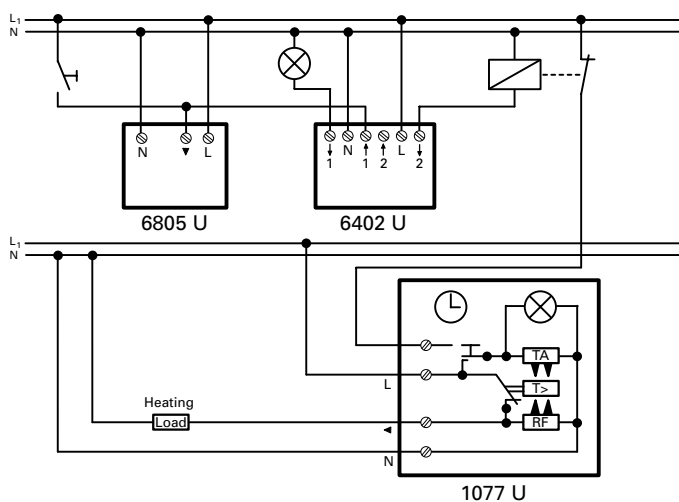
Alternative 2

Busch universal relay insert 6401 U-102

Load types:

max. 2300 W/VA

Busch extension unit insert 6805 U



Automatic lighting and heating control

Busch universal relay insert 6402 U*

Load types:

max. 2300 W/VA

Busch extension unit insert 6805 U

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

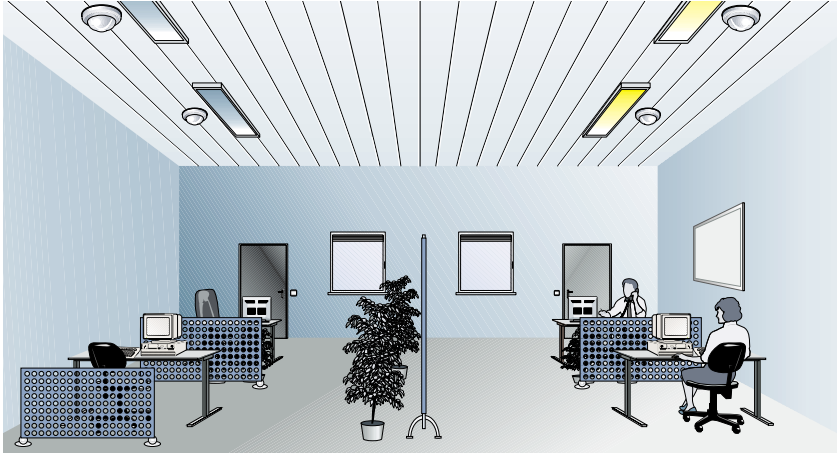
Room temperature controller insert 1077 U

* in preparation

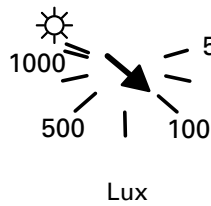
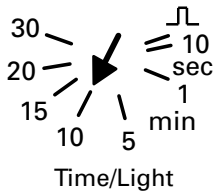
Application example: Large office (separate lighting circuits)

Task
The lighting in a large office should be controlled via presence detectors. There are 4 workstations whose lighting should be controlled

separately via the Busch-Watchdog® Presence. The control of the heating system should be motion-dependent and implemented at the next stage.



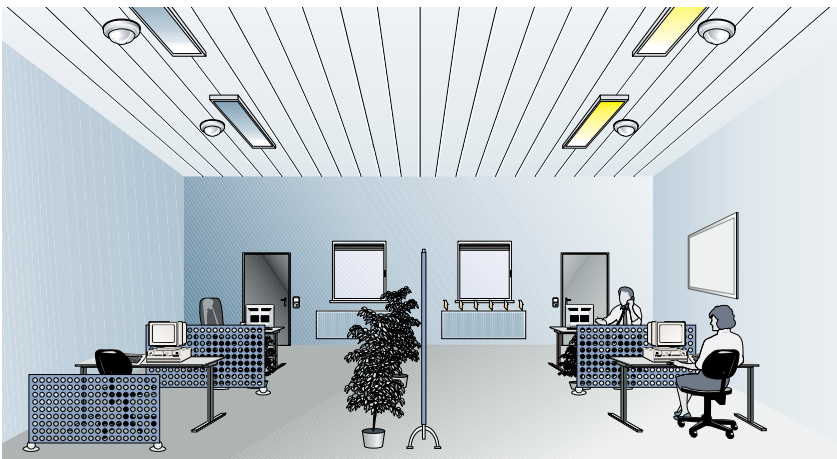
Example



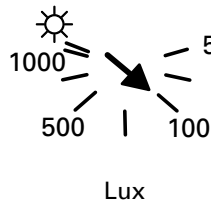
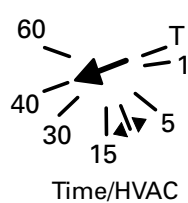
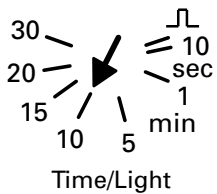
Installation and settings

The installation site of the Busch-Watchdog® Presence should be selected directly above the workstations to provide the best level of detection. The detection area of each individual device must be adapted to the environment by covering the long-distance plane or part of the medium-range plane (special film is supplied with the device) so that only the corresponding section is detected. In this application, it is necessary to ensure that the individual lighting circuits influence each other as little as possible. The greater the influence exerted, the more difficult the setting of the

brightness limit of each individual Busch-Watchdog® Presence becomes. Increasing the brightness by switching on an adjacent group of luminaires is the same as an increase in the external brightness for the Busch-Watchdog® Presence and can lead to the disconnection of its group of luminaires. If IR remote control is to be used it should be ensured that the maximum range of the remote control is 7 m. To rule out faulty operation/programming of other detectors it must be aimed as vertically as possible at the Busch-Watchdog® Presence which is to be operated.



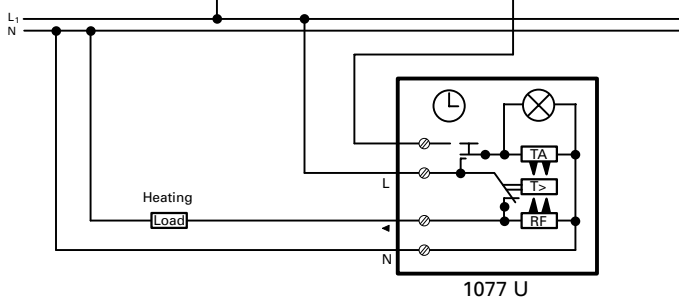
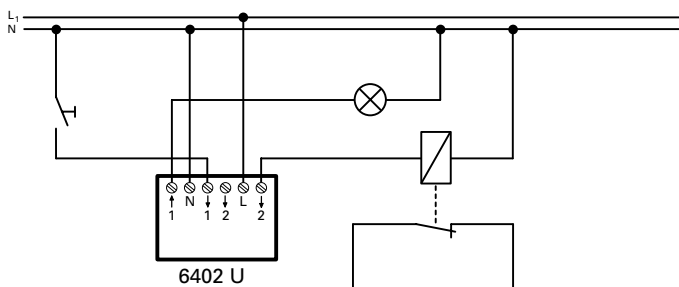
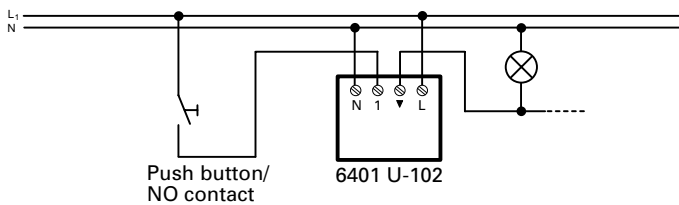
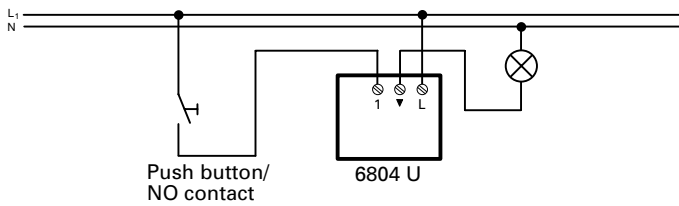
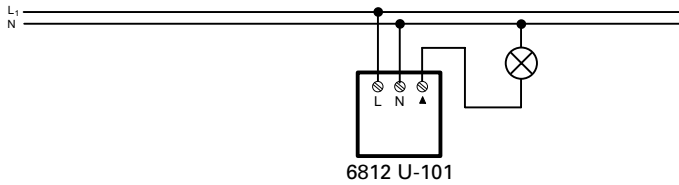
Example



Additional integration of heating control

The process is dependent on the respective heating system. There are heating systems which permit each heater to be controlled separately. These heaters can be regulated as described in the single office application. If it is not possible

to control the heating separately for each area, the HVAC outputs of the respective universal series inserts 6402 U must be connected in parallel. It is therefore ensured that the room is heated even if only one workstation is occupied.



Automatic lighting control

Alternative 1

Application without extension unit:
Universal standard insert 6812 U-101

Load types:
max. 700 W/VA

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

Alternative 2

Application with extension unit:
Mos-Fet insert 6804 U

Load types:
min. 40 W, max. 420 W

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

Alternative 3

Application with extension unit:
Busch universal relay insert 6401 U-102

Load types:
max. 2300 W/VA

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

Automatic lighting and heating control

Application with extension unit and HVAC:

Busch universal series insert 6402 U*

Load types:
max. 2300 W/VA

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

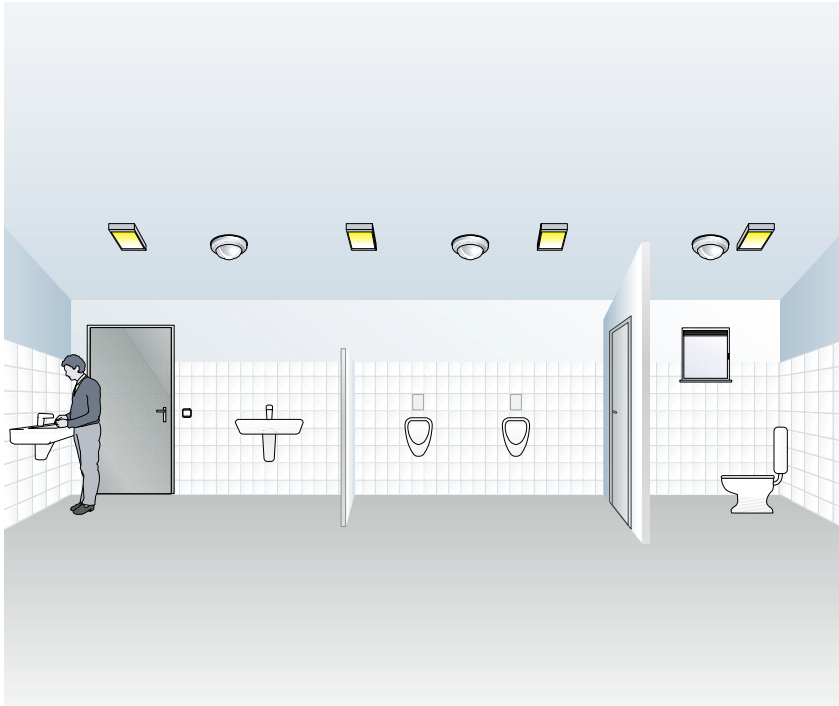
Room temperature controller insert 1077 U

* in preparation

Application example: Toilet facilities

Task
Toilet facilities should be controlled intelligently via a Busch-Watchdog® Presence. The lighting is switched dependent on

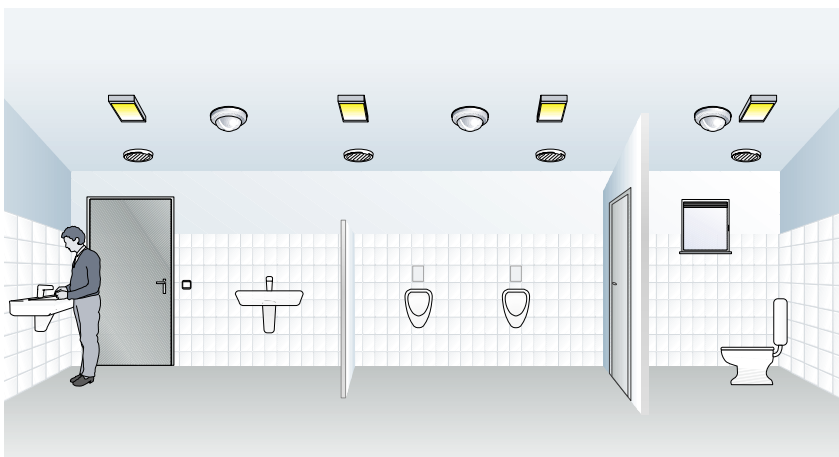
movement and brightness. The fan should only be switched with motion dependence and with a longer OFF delay.



Lighting control

The lighting is switched directly dependent on movement and brightness. Depending on the room divisions, it is necessary to

install several detectors using the active extension unit in order to be able to detect the individual areas (hand basins, urinals, cubicles).



Integration of the ventilation system

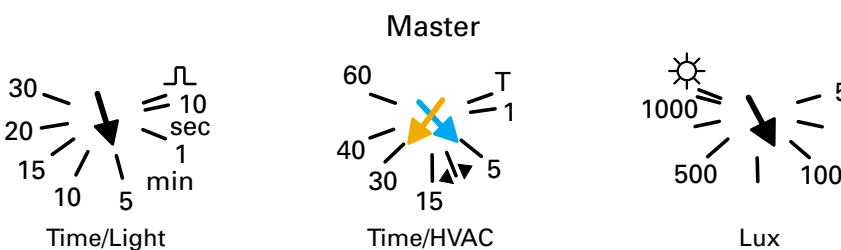
The fan should not be dependent on brightness but should be switched dependent on movement. The HVAC output can be used for this. The adjustable OFF delay is dependent on the application.

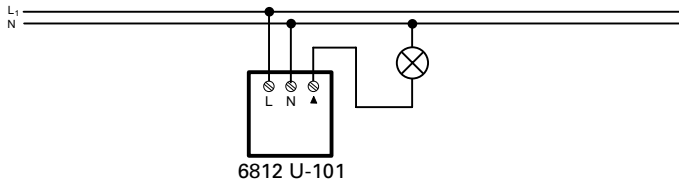
Application 2

The fan starts with an ON delay but only if a movement is detected over a longer period (e.g. 5 min.). This should prevent the fan from starting when someone has only entered the toilets for a short time. If a movement is detected over a longer period, the fan should continue for some time. The "Time/HVAC" potentiometer must be set at > 10 min. The ON delay is based on the frequency of movement in the first few minutes. If only one movement is detected, the HVAC output is not switched.

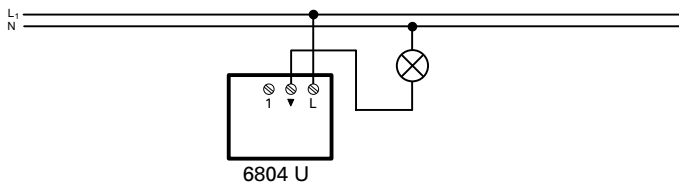
Application 1

The fan should start with an ON delay of 30 sec. and continue for a maximum of 10 min. The setting on the "Time/HVAC" potentiometer must be set between 1 and 10 min.

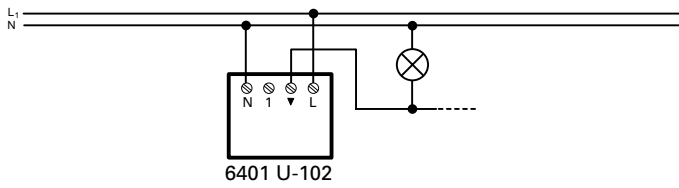




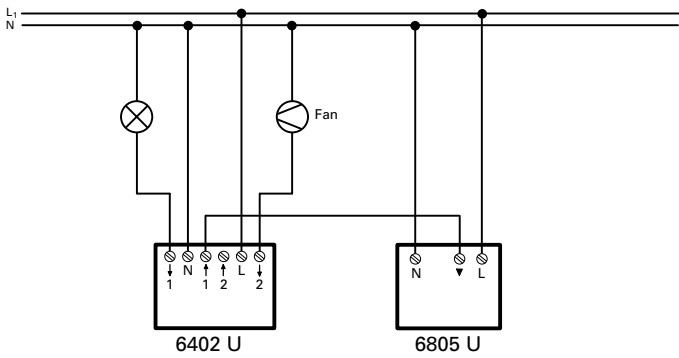
6812 U-101



6804 U



6401 U-102



6402 U

6805 U

Automatic lighting control

Alternative 1

Application without extension unit:

Universal standard insert 6812 U-101

Load types:

max. 700 W/VA

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

Alternative 2

Application with extension unit:

Mos-Fet insert 6804 U

Load types:

min. 40 W, max. 420 W

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

Alternative 3

Application with extension unit:

Busch universal relay insert 6401 U-102

Load types:

max. 2300 W/VA

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

Automatic lighting and heating control

Application with extension unit and HVAC:

Busch universal series insert 6402 U*

Load types:

max. 2300 W/VA in total

Busch extension unit insert 6805 U

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885
(if required)

* in preparation

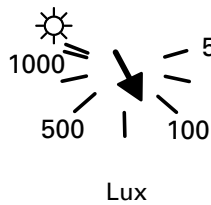
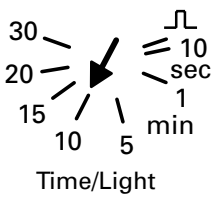
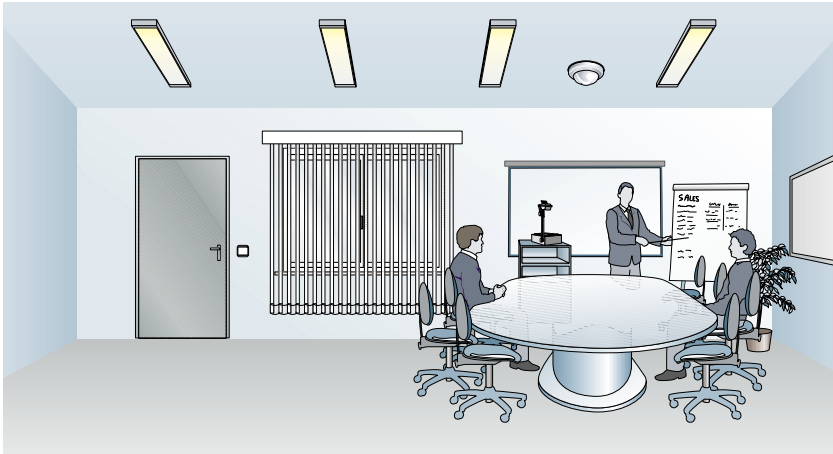
Application example: Constant lighting control

Task

Constant lighting control ensures increased comfort in offices and conference rooms. The lighting is generally a mixture of

daylight and artificial light. In this type of lighting control, the brightness is maintained at a constant level by dimming the artificial light. If daylight alone is

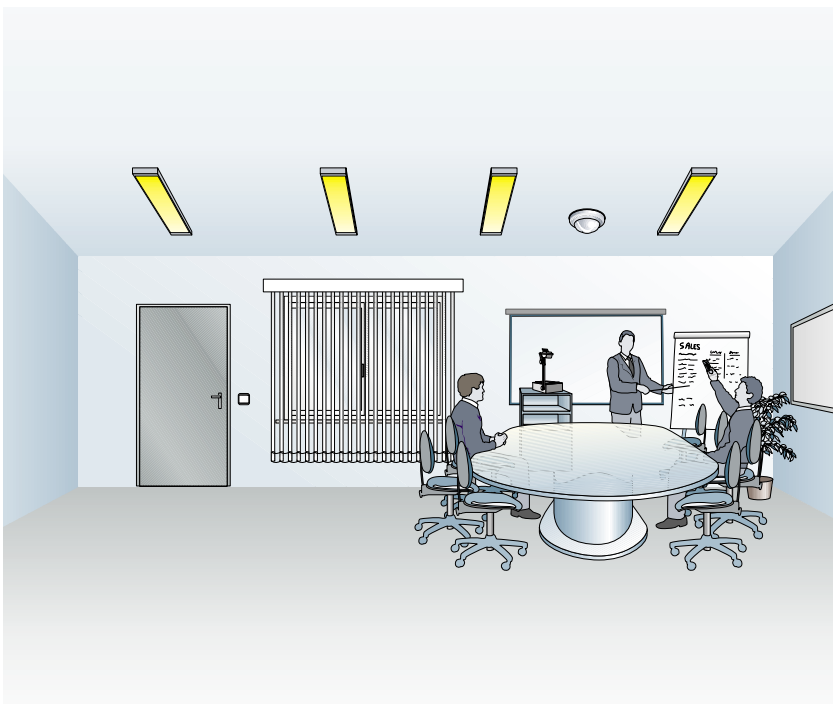
sufficient, the artificial light is switched off.



Lighting control

The lighting must be dimmable. The flush-mounted dimmer insert is selected dependent on the load (fluorescent lamps, incandescent lamps etc.). Manual intervention via plateswitch or IR remote control is also possible with constant lighting control.

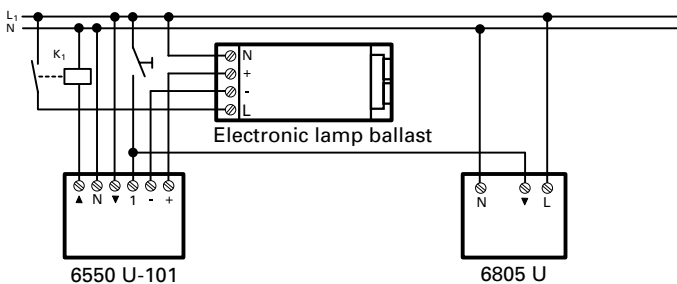
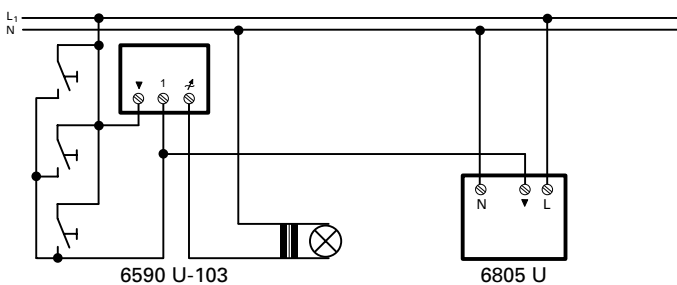
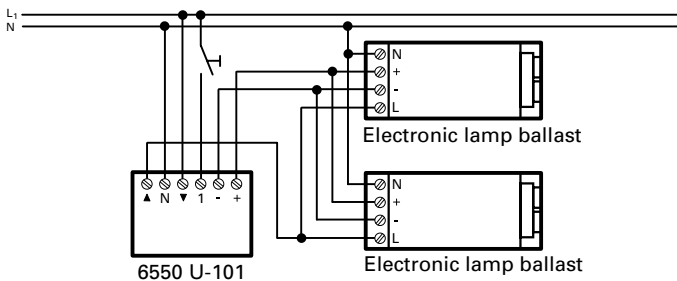
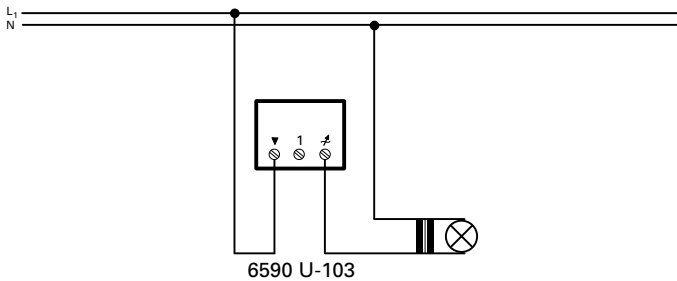
The lighting can be switched on and off with the plateswitch. It is possible to distinguish between short and long operations with IR remote control. A short push button action is identical to the function of the plateswitch. The lighting is dimmed after a long push button action.



Adaptation of the brightness limit with remote control

Using infrared remote control, it is possible to adapt the brightness limit which is kept at a constant level.

The lighting is dimmed darker or brighter after a long push button action. If the dimming process has finished, the "Memo" button is pressed twice to store the values.



Automatic lighting control

Alternative 1

Busch-Universal-Dimmer® 6590 U-103*

Load types: min. 50 W, max. 420 W

Busch-Watchdog® Presence 6813

Alternative 2

Memory control device 6550 U-101*

Load types:

min. 50 W, max. 700 W

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885 (if required)

Automatic lighting control

Alternative 1

Busch-Universal-Dimmer® 6590 U-103*

Load types: min. 50 W, max. 420 W

Busch-Watchdog® Presence 6813

Busch extension unit insert 6805 U

Alternative 2

Memory control device 6550 U-101*

Load types:

min. 50 W, max. 700 W

Busch extension unit insert 6805 U

Busch-Watchdog® Presence 6813

Surface-mounted adapter 6885

(if required)

(if required)

* in preparation

Note: A relay (K1) must be used for constant lighting control above 4 A.

Application example: Interface to Busch-Powernet® EIB

Task

To extend a Busch-Powernet® EIB installation with a presence detector, the outputs of the flush-mounted insert are

connected to the Busch-Powernet® EIB installation via a binary input.

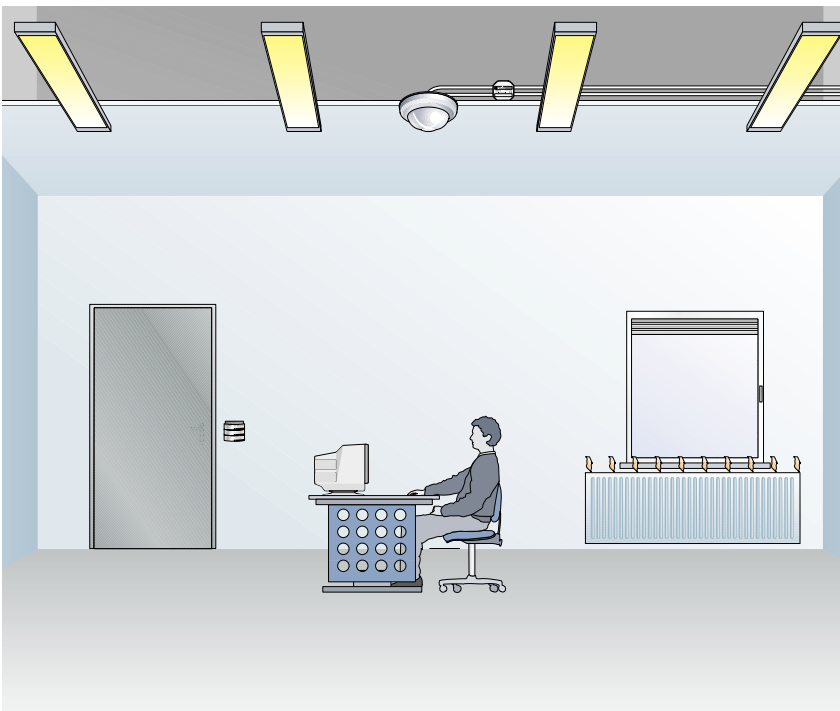


Installation and settings

The choice of location and the detection area of the installation area is identical to that of the single office application. The outputs of the Busch-Watchdog® Presence must be connected to a binary input. This can for example be mounted directly in suspended ceilings or installed in the

distribution board. The settings are identical to those of the single office application.

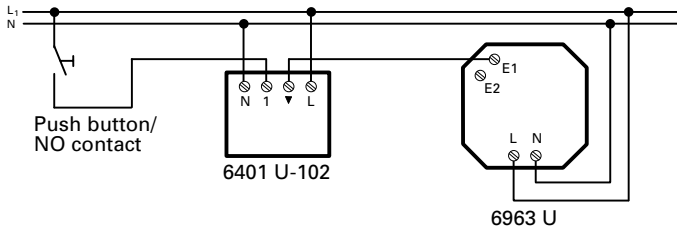
The connection of the plate-switch and the master/slave concept as well as the use of IR remote control is possible as described in the previous applications.



Addition of heating control

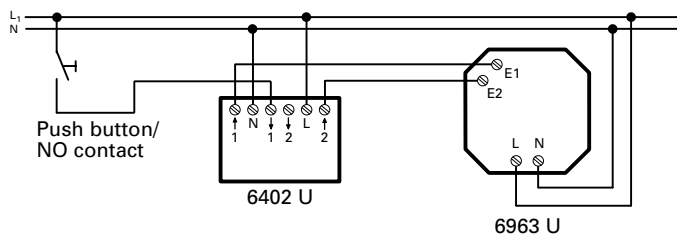
The universal series insert has 2 outputs. Both outputs must be linked to the Busch-Powernet® EIB via a binary input. Further heating control is then achieved by using EIB. It is also a good idea to lower the

temperature in the room via the adjustable night reduction of the appropriate thermostats if no movement is detected. All further settings regarding the OFF-delay in combination with the intelligent ON-delay are identical to those of the single office application.



Automatic lighting control

Busch universal
 relay insert 6401 U-102
 Flush-mounted
 binary input 6963 U
 Busch-Watchdog® Presence 6813
 Surface-mounted adapter 6885
 (if required)
 Load is controlled via the
 Busch-Powernet® EIB switch actuator



Automatic lighting control

Busch universal
 series insert 6402 U*
 Flush-mounted
 binary input 6963 U
 Busch-Watchdog® Presence 6813
 Surface-mounted adapter 6885
 (if required)
 Load is controlled via the
 Busch-Powernet® EIB switch actuator

* in preparation

Busch-Watchdog® Presence EIB

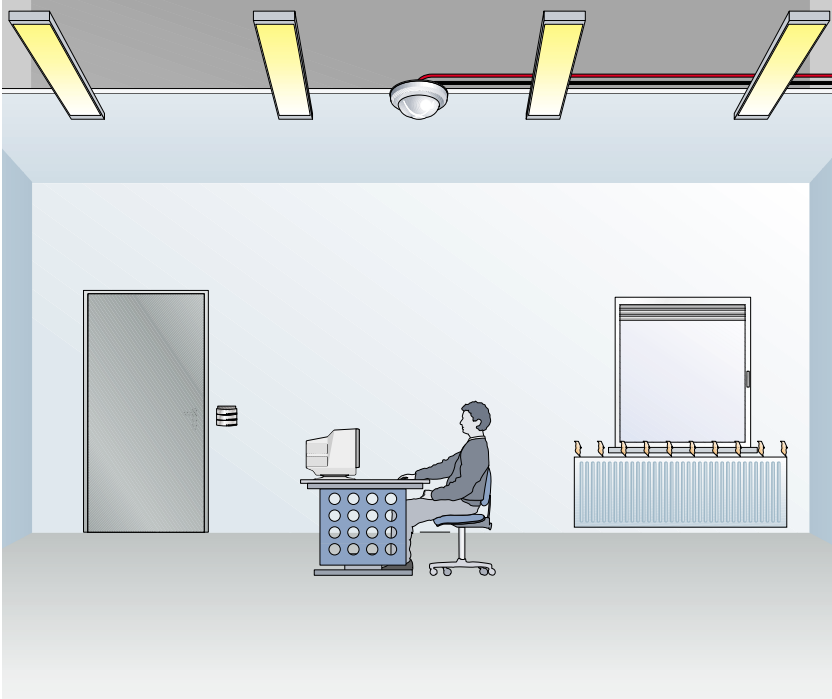
Application example: Interface to ABB i-bus® EIB

Task

Controlling the lighting and temperature in a room with standby, comfort and night-time modes. The process needs to be fully automatic

and involve both energy savings and cost reductions. When linked to the ABB i-bus® EIB, it is possible for the respective functions to communicate

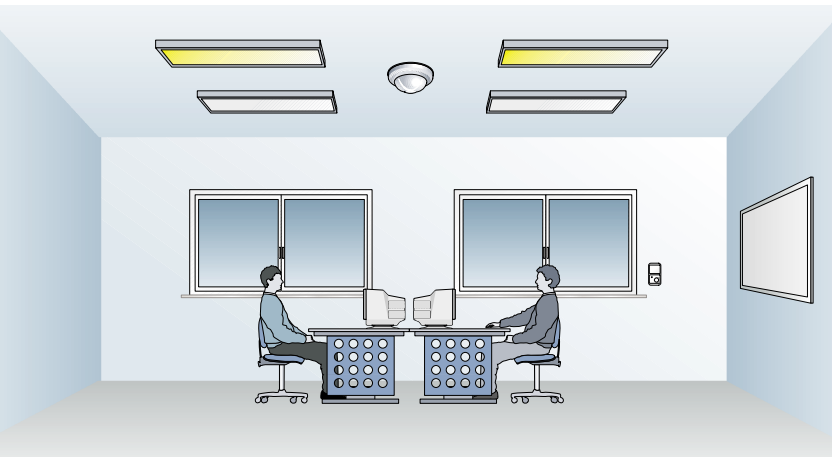
and react with each other. The detection of various brightness values within a room and the direct reaction to these values is also required.



Example 1: Presence/HVAC/Signal Switching from standby to comfort mode for light and temperature

As soon as someone enters the room, the presence detector switches the light on and the room thermostat switches from standby to comfort mode. If nobody is in the room, the heating is

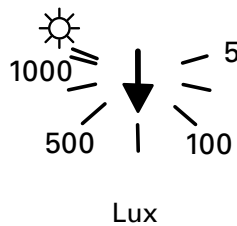
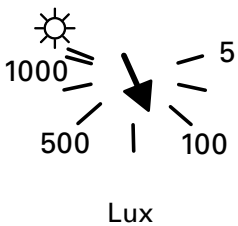
set to standby mode once the respective overshoot period has expired and the light is switched off. In the evening, the room thermostat is automatically set to night operation via a timer. The signalling function of the presence detector is enabled at the same time so that room monitoring can take place.

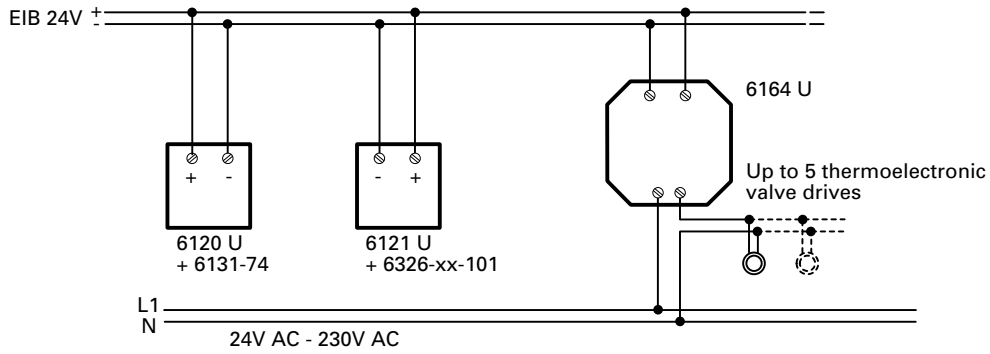


Example 2: Presence 1/Presence 2/Signal Detection and adjustment of various brightness values

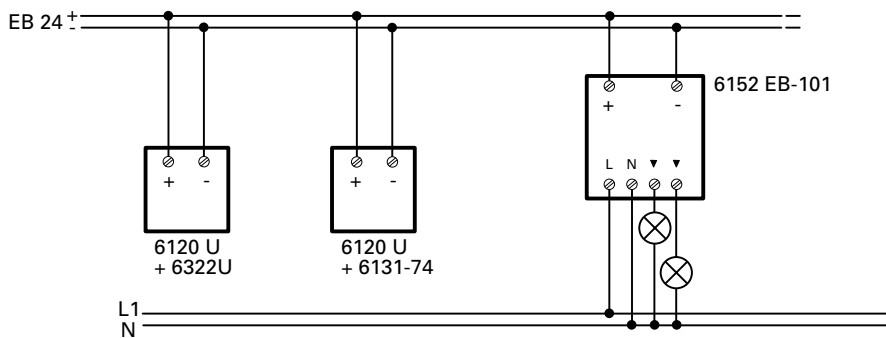
The presence detector can process 2 brightness limits and thus adjust to variable lighting conditions in the room. This makes it possible, for example to

switch-off the row of luminaires at the window (setting = 200 lux) earlier than the row inside the room (setting = 300 lux). Once the signalling function has been successfully activated via the bus, it can be used to monitor the room.

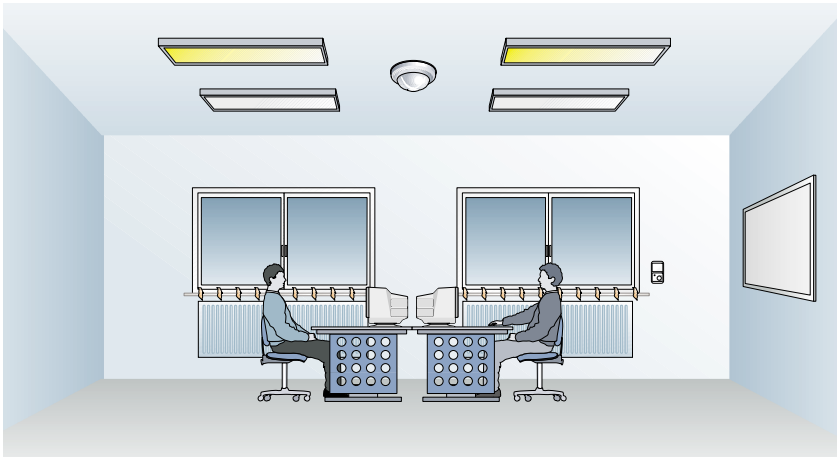




Automatic control of the lighting and heating with room monitoring
 Busch-Watchdog®
 Presence EIB 6131-74
 Bus coupler/
 1-fold switch actuator 6120 U/6110 U
 Busch-triton® room temperature
 controller 6326-xx-101
 Bus coupler 6121 U
 Heating actuator 6164 U



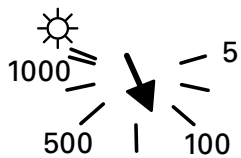
Automatic control of the lighting on 2 levels with room monitoring
 Switch actuator e.g. 6152 EB-101
 Busch-triton® 3-fold 6322-xx
 Busch-Watchdog®
 Presence EIB 6131-74
 2 bus couplers 6120 U



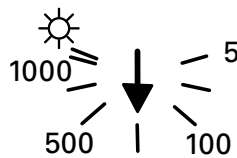
Example 3: Presence 1/Presence 2/HVAC Individual reaction and connection of the heating or air conditioning system

The lighting control function corresponds to previous application exam-

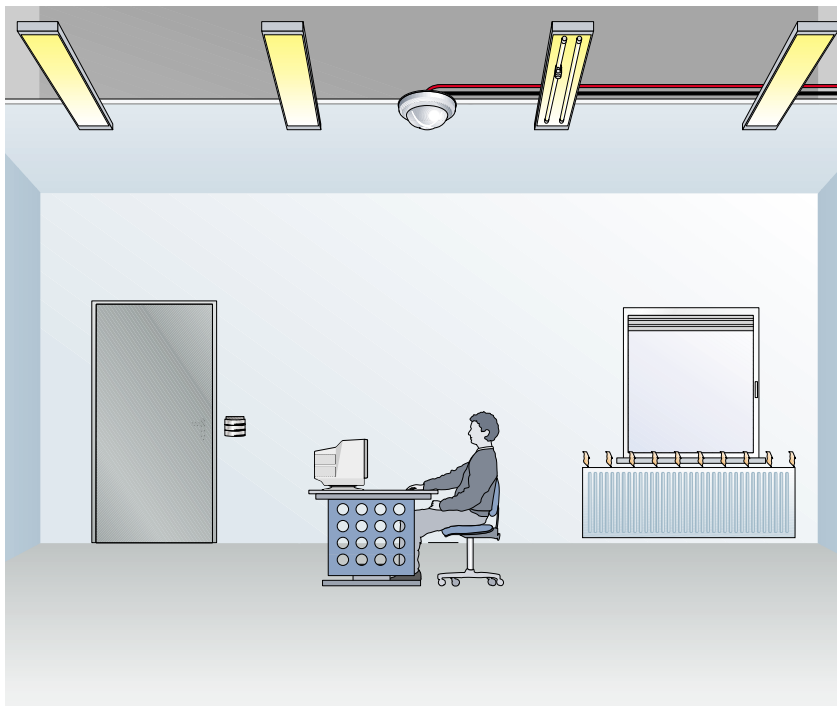
ples but also includes the HVAC mode. This means that if someone is in the room, the heating or air conditioning system switches to comfort mode. If nobody is present, it reverts to the cost-effective standby function.



Lux



Lux

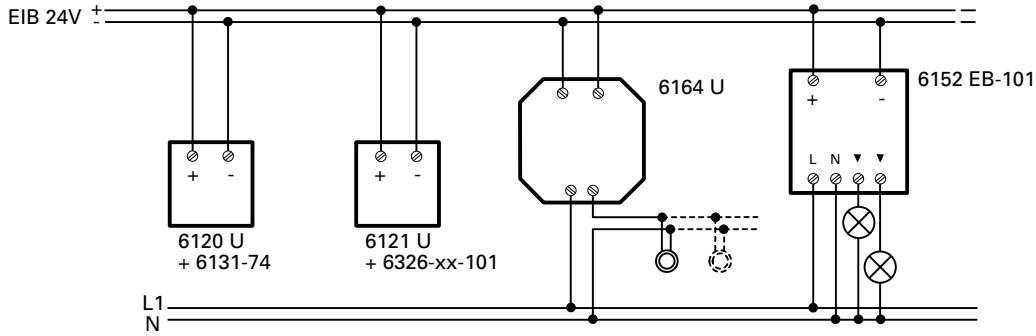


Example 4: Presence detector combined with constant light controller Reaction to ambient brightness by constant lighting control

When dimmable electronic ballasts are used (0-10 V), constant lighting control can be produced in addition to the presence detector function. This combination offers the highest potential for saving energy in the room. To do so, a constant

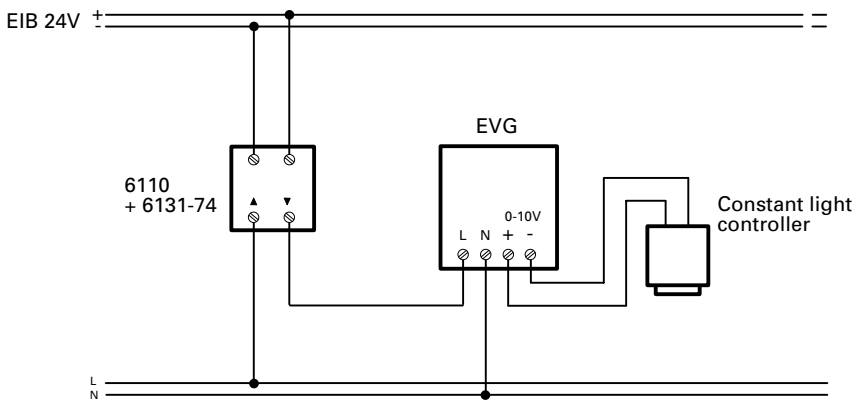
light controller such as Osram HF DIM MICO is connected in parallel to the 0-10 V control terminal of the electronic ballasts.

This controller maintains the lighting at a constant level e.g. at 500 lux. If the ambient light level increases, the artificial lighting is dimmed down, so that additional energy is saved even when the room is occupied.



Automatic control of the lighting on 2 levels with heating control

Busch-Watchdog®	
Presence EIB	6131-74
Bus coupler	6120 U
Busch-triton® room temperature controller	6326-xx-101
Bus coupler	6121 U
Heating actuator	6164 U
Series actuator	6152 EB-101



Automatic constant lighting control with presence detection

Busch-Watchdog®	
Presence EIB	6131-74
Bus coupler	6120 U
Constant light controller e.g. Osram HF DIM MICO	

Member of
the ABB Group

P.O.Box
D-58505 Lüdenscheid/Germany

Telephone: +49 (0) 23 51 95 60
Telefax: +49 (0) 23 51 95 66 94
www.busch-jaeger.com