6LE005314A

WXF052   **gallery**
Motion detector 2-wire 1.1 m

WXF051   **gallery**
Motion detector 3-wire 1.1 m

Safety instructions

Electrical equipment may only be installed and assembled by a qualified electrician in accordance with the relevant installation standards, guidelines, regulations, directives, safety and accident prevention regulations of the country.

Failure to comply with these installation instructions may result in damage to the device, fire or other hazards.

These instructions are an integral component of the product and must be retained by the end user.

Design and layout of the device (Figure 1)

(1) Modular supporting ring WXA45.. (not within scope of delivery)
(2) Motion detectors
(3) Design cover for motion detector WXD050.. (not within scope of delivery)
(4) Frame WXP.. (not within scope of delivery)

Function

Correct use
- Automatic switching of lighting depending on heat motion and ambient brightness
- manual switching via integrated button
- Only suitable for use in indoor areas with no drip and no spray water.
- installation into wall box with at least 40 mm depth

Product characteristics
- integrated button for selecting operating modes and special functions
- Lockable integrated button
- Automatic, semi-automatic operating modes can be selected
- Display operating mode via LED
- Potentiometer for setting the response brightness, delay time and detection sensitivity
- Additional adjustment of the response brightness via Teach-In function
- Pulse encoder mode for current pulse/stairwell circuits
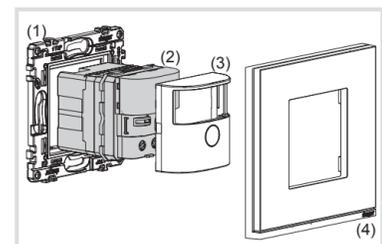- Adjustable detection angle for adaptation of the detection area
- Party function

- Presence simulation
- optional extension unit operation via installation button
- Expansion of detection area possible in the case of WXF051 by means of stair motion detector (master/slave configuration)

Operating modes

The motion detector detects heat motion caused by people, animals, or objects.

Automatic mode
- The light will be switched on for the delay time, if movements are detected in the detection area and the set brightness threshold is undershot. Each detected movement restarts the delay time.
- The light will be switched off if no additional movements are detected in the detection area and the set delay time has elapsed.

Semiautomatic mode:
- The light is switched on manually for the delay time via the button on the device or an extension unit button. Each detected movement or pressed button restarts the delay time.
- The light will be switched off automatically if no additional movements are detected in the detection area and the set delay time has elapsed.

Operation

Operating concept (Fig. 2)
(5) Button
(6) Status LED (behind lens)

Operation is executed by pushing the button (5) on the motion detector:
- Keeping the button pressed activates special functions. Selection of the special functions is supported by the LED display (Fig. 3).

Automatic mode:
- A short press of the button switches the operating modes. The operating mode is displayed via the status LED behind the optics cover of the motion detector.

Semiautomatic mode:
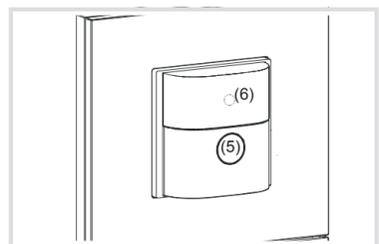- A short press of the button switches the lighting on

Figure 1: Design and layout of the device

Fig. 2: Operating and display elements

Fig. 3: Selection of the special functions and LED display

Selecting switching type via button (automatic mode)

The operation button is not disabled (see Disabling/enabling switching type selection via button).
- Briefly press the button (5) repeatedly until the desired switching type is selected. (Table 1)
  The status LED (6) indicates the selected switching type.

Button operation	LED display	Switching type
Repeated short press on button	–	Automatic
	green	Permanent ON
	red	Permanent OFF

Tabelle 1: Selection of switching type and LED display

Disabling/enabling switching type selection via button

The selection of the switching type via the button can be locked, e.g. for operation in public buildings.
- Keep the button pressed for more than 15 seconds, until the status LED is flashing green (Fig. 3).
  Selection of the switching type via the button is disabled.

or if the button is locked:
- Keep the button pressed for more than 15 seconds, until the status LED is flashing green (Fig. 3).
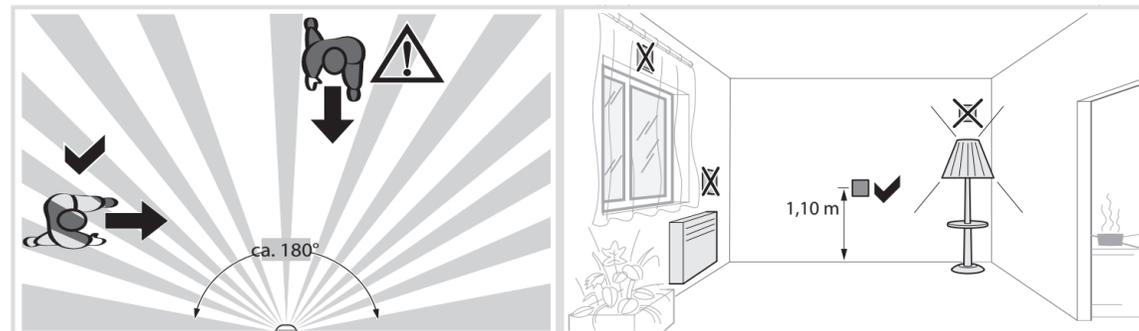 Selection of the switching type via the button is possible again.

Switch on lighting via push-button extension unit (table 2)

Optionally the lighting can be switched on via a mechanical push-button extension unit. For extension unit operation, the lighting is switched on independently of the set response brightness.

Lighting state	Operation button	Performance of the insert
OFF	Short press	Load is switched on for the set delay time
ON	Short press	Extension of switch-on time by the set delay time

Tabelle 2: Operation via push-button extension unit

Activating/interrupting party function

The party function switches the lighting on for 2 hours. During this time no extension unit commands are executed.
- Keep the button pressed for more than 5 seconds, until the status LED is flashing red (Fig. 3).
  The lighting is switched on for 2 hours. During this time the status LED is flashing red. Upon elapse of 2 hours, the motion detector switches to automatic/semi-automatic operation mode.
- Briefly press the button or extension unit.
  The party function will be cancelled, the motion detector returns to automatic/semi-automatic operation mode.

Activating/deactivating presence simulation

During operation, the motion detector counts the motion detections in one full hour and saves the result. With active presence simulation at the beginning of the hour with the most detections saved, the light will be switched on for the duration of the delay time, even no motion is detected.

During the presence simulation, presence detection and extension unit commands will continue to be executed normally.

ⓘ The presence simulation cannot be activated via the extension unit.
- Keep the button pressed for more than 20 seconds, until the status LED is slowly flashing red (figure 3).
  The presence simulation is active. During this time the status LED lights orange. The motion detector switches the lighting on at the saved time.

To deactivate presence simulation:
- While presence simulation is active, keep the button pressed for more than 20 seconds, until the status LED is slowly flashing red (Fig. 3).
  The presence simulation will be deactivated and the orange status LED will go out. The motion detector returns to the automatic/semi-automatic operating mode.

Installation and electrical connection

Selecting installation location
- Note recommended installation height of 1.1 m.
- Observe the motion orientation: a distinction is made between "direct approach" and "transverse motion". Motions transverse to the motion detector can be detected better than motions toward the motion detector (figure 4, figure5).
- Select an installation location that is free of vibration. Vibrations can cause undesired switching.
- Avoid sources of interference in the detection area (Fig. 5). Sources of interference, e.g. heating elements, ventilation systems, air conditioners and lamps that are cooling down can cause undesired switching (Fig. 4).

ⓘ To avoid disturbing influences, the detection angle can be restricted (see Restriction of the detection area).

Figure 4: Installation location of the motion detectors and motion orientation

Figure 5: Detection area of the motion detector with nominal installation height 1.1 m

DANGER!

⚠ Touching live parts can result in an electric shock!
An electric shock can be lethal!
Disconnect the connecting cables before working on the device and cover all live parts in the area!

Connecting and installing the device
- Screw supporting ring (1) to a wall box in the correct position.
- Connect motion detector (2) according to the connecting diagram (figure 6/7)
- ⓘ Connecting the optional N-conductor on the 2-wire device has advantages for the switching performance in the case of LED loads and transformers.
- Snap motion detector (2) into the supporting ring.
- Snap cover (3).
- Fit frame (4).

Commissioning

Basic settings

The basic settings for commissioning can be made directly using the motion detector operating elements. The operating elements for commissioning are located underneath the cover (3).

Removing cover
- Remove cover by Hand. (Figure 8).

Overview of operation and adjustment elements (figure 9)
(7) Button
(8) Status LED
(9) Detection angle adjuster
(10) Response brightness potentiometer
(11) Delay time potentiometer
(12) Sensitivity potentiometer

Setting the detection area

The detection angle can be restricted for the right side and for the left side via each adjuster (figure 9, 9) between 45° ... 90° for each adjuster. This can be carried out on the device. Thus the detection angle can be between 90° and 180° (Fig. 10).
- Use the adjusters to set the detection angle for each side.

ⓘ Further adjustments can be made to the detection area by activating/deactivating the motion sensors (see Setting the function of the detection sensors).

Setting the detection performance

Test mode must be used to test the detection performance. In test mode, the motion detector works independent of brightness. Each detection switches the lighting and status LED on for 1 second. Thereafter motion detection will be deactivated for 2 seconds.

The motion detector is connected and ready for operation.
- Set the response brightness potentiometer (Fig. 9, 10) to Test (T).
- Leave the detection area and observe the switching behaviour.
  If the motion detector switches on without motion in the detection area, then sources of interference are present (see Installation location).
- Reduce the sensitivity if necessary and blank out sources of interference by adjusting the detection angle or removing them.
- Check the detection area using a detection test and adjust if necessary.

ⓘ Test mode ends if no movement is detected for 3 minutes or a brightness value is set.

ⓘ If the detection area of a motion detector is too small, it can be extended in the case of WXF051 by using stair motion detectors as extension units.

Fig. 6: Connection of 2-wire motion detector

Fig. 7: Connection of 3-wire motion detector

Figure 8: Dismantling of cover

Fig. 9: Operation and adjustment elements

Fig. 10: Setting the detection angle

Setting the response brightness

The response brightness is the brightness value saved in the motion detector; when this value is undershot the motion detector switches the connected load if movements are detected. The response brightness can be set between approx. 5 (☾) over **150 Lux** (factory setting) to daytime operation (○). The ○ symbol stands for brightness-independent switching. The response brightness can be variably adjusted in the intermediate areas.

ℹ In order to control the lighting in stairwells in accordance with DIN EN12464-1, 2003-3, select the **150 Lux** potentiometer setting.

▪ Turn the response brightness potentiometer (Fig. 9, 10) to the desired position.

ℹ To save the current ambient brightness as response brightness, use the Teach-In function (see Saving response brightness automatically (Teach-In function)).

Saving response brightness automatically (Teach-In function)

▪ Keep the button (5) pressed for more than 10 seconds, until the orange status LED (6) is flashing.

The motion detector detects the current ambient brightness and saves it as response brightness.
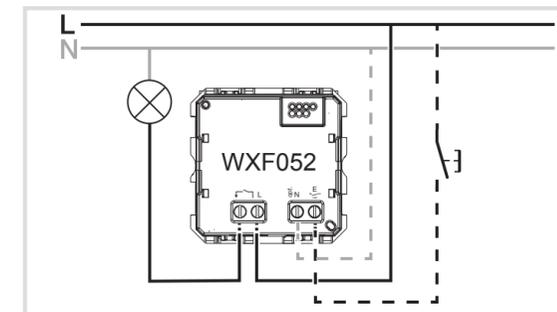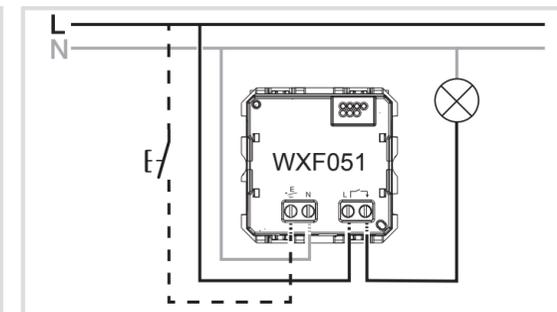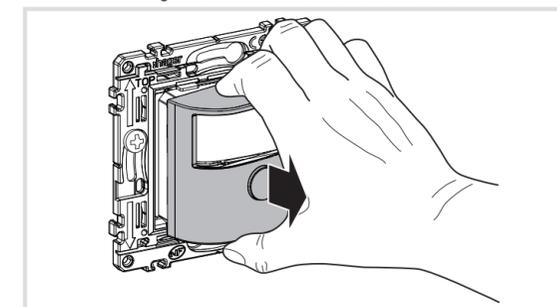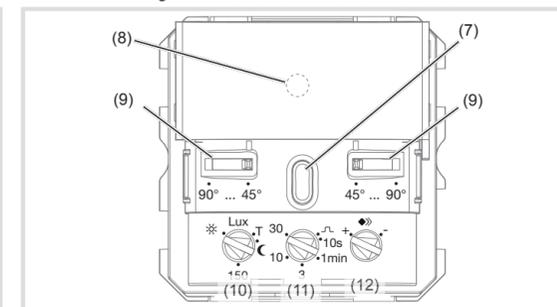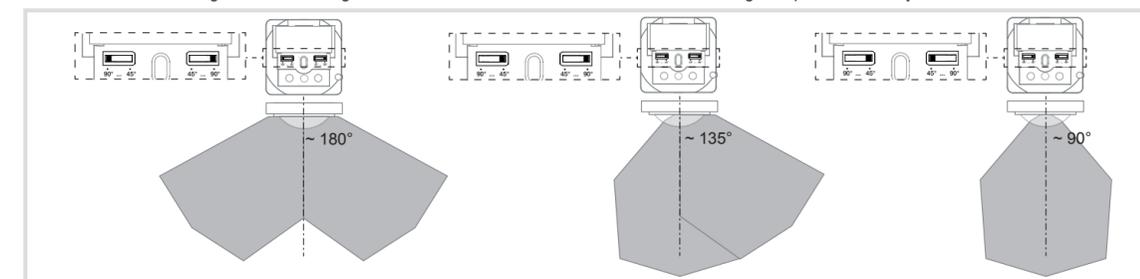
ℹ The brightness saved via Teach-In is active until a change occurs via the potentiometer.

Setting the delay time or pulse encoder mode

The delay time is the period of time saved in the motion detector which is the shortest time that the lighting is switched on for when the response brightness is undershot and motion is detected. The delay time can be set to pulse encoder mode ⊓⊔ or to the defined values 10 s, 1 min., 3 min. (factory setting), 10 min. and 30 min. Inbetween those values the setting is infinitely variable.

Pulse encoder mode is suitable for controlling stair light/current pulse circuits. In pulse encoder mode, the 200 ms switching output is switched on when the response brightness is undershot and movement is detected. Motion detection is then locked for 10 s.

▪ Turn the delay time potentiometer (Figure 9, 11) to the desired position.

ℹ Note that lights can be worn down due to frequent switching with very short delay times.

Setting the sensitivity

Detection is factory-set to maximum sensitivity. If there are frequent incorrect detections, the sensitivity can be reduced.

▪ Turn the sensitivity potentiometer (Fig. 9, 12) to the desired position.

Expanded settings

A special menu must be called up for expanded settings. An overview of the expanded settings can be found in Table 3.

Calling up special menu for expanded settings

▪ Turn the response brightness potentiometer (Fig. 9, 10) to Test (T).

▪ Keep the button pressed for more than 10 seconds, until the status LED flashes 1x blue.

The special menu for **automatic/semi-automatic mode** is activated.

ℹ Press the button briefly and repeatedly to change the function. The sequence of settings and the LED display can be found in Table 3.

ℹ The system will exit the special menu if the button is not pressed for 30 s or if the response brightness potentiometer is moved from the T position. Settings that have not been confirmed will be discarded.

Selecting automatic/semi-automatic mode (see Operating modes)

A description of the operating modes can be found in the **Function - Operating modes** section.

The motion detector is in the expanded settings special menu (see Calling up special menu for expanded settings).

▪ Briefly press the button repeatedly until the status LED flashes 1x blue on a cyclical basis.

The selection for **automatic/semi-automatic mode** is activated.

▪ Keep the button pressed for approx. 2 seconds, until the status LED flashes red on a cyclical basis.

▪ Briefly press the button repeatedly until the LED displays the desired function (see Table 3).

▪ Keep the button pressed for approx. 2 seconds to confirm the selected function.

The LED flashes 1x blue on a cyclical basis.

ℹ Press the button briefly to call up the other submenus.

Setting brightness evaluation in master/slave operation (3-wire device only)

When using stair motion detectors as extension units, master/slave operation can be used to expand the detection area (WXF051 only). The connection and commissioning processes are described in the operating instructions for the stair motion detector (see Accessories). The brightness evaluation is set in this menu.

The motion detector is in the expanded settings special menu (see Calling up special menu for expanded settings).

▪ Briefly press the button repeatedly until the status LED flashes 2x blue on a cyclical basis.

The selection for **Brightness evaluation in master/slave operation** is activated.

▪ Keep the button pressed for approx. 2 seconds, until the status LED flashes red on a cyclical basis.

▪ Briefly press the button repeatedly until the LED displays the desired function (see Table 3).

▪ Keep the button pressed for approx. 2 seconds to confirm the selected function.

The LED flashes 2x blue on a cyclical basis.

ℹ Press the button briefly to call up the other submenus.

Setting the function of the detection sensors

The motion detector has two detection sensors which, in addition to being adjusted sideways, can be activated/deactivated individually in order to adjust the detection area.

The motion detector is in the expanded settings special menu (see **Calling up special menu for expanded settings**).

▪ Briefly press the button repeatedly until the status LED flashes 3x blue on a cyclical basis.

The selection for **Function of the detection sensors** is activated.

▪ Keep the button pressed for approx. 2 seconds, until the status LED flashes red on a cyclical basis.

▪ Briefly press the button repeatedly until the LED displays the desired function (see Table 3).

▪ Keep the button pressed for approx. 2 seconds to confirm the selected function.

The LED flashes 3x blue on a cyclical basis.

ℹ Press the button briefly to call up the other submenus.

Resetting the device to the factory setting

ℹ When the device is reset to the factory setting, all deviating settings are deleted.

The motion detector is in the expanded settings special menu (see Calling up special menu for expanded settings).

▪ Briefly press the button repeatedly until the status LED flashes 4x blue on a cyclical basis.

The selection for **Reset to factory setting** is activated.

▪ Hold the button down for more than 10 seconds.

The device will automatically restart. The LED flashes 3x green. The load is switched on.

ℹ The restart takes around 30 s. The device must then be recommissioned; standard settings will be used in the meantime.

Setting the load (only for 2-wire devices)

If the switching performance of loads is unsatisfactory after commissioning, especially when circuited to energy-saving lamps and 230 V LED lamps, specific load detection for LED lamps must be performed. For the purposes of load detection, the connected lamps light up for approx. 10 s.

The motion detector is in the expanded settings special menu (see **Calling up special menu for expanded settings**).

▪ Briefly press the button repeatedly until the status LED flashes 5x blue on a cyclical basis.

The selection for **Load detection** is activated.

▪ Briefly press the button repeatedly until the LED displays the desired function (see table).

▪ Keep the button pressed for approx. 2 seconds to confirm the selected function.

The LED flashes 5x blue on a cyclical basis.

ℹ Press the button briefly to call up the other submenus.

Appendix

Technical data

Rated voltage	230 V~, + 10%/- 15%
Mains frequency	50 Hz
Standby power consumption	< 0.3 W
Response brightness	approx. 5 ... 1000 lux (∞)
Delay time	Pulse mode 200 ms; approx. 10 s ... 30 min
Sensitivity	approx. 10 ... 100 %
Detection angle	ca. 90 ... 180°
Detection area (1.1 m)	approx. 12 x 16 m
Degree of protection	IP 20
Relative humidity	95% max./20°C
Operating temperature	-5°C … +45°C
Storage/transport temperature	-20°C … +60°C
Overheating protection	thermal protection non resettable
Short-circuit protection	via circuit breaker max. 16 A
Extension unit cable length	max. 50 m
Load cable length	max. 100 m
Connecting terminals conductor cross-sections	
- rigid	1 x 1.5 ... 2.5 mm² 2 x 1.5 mm²
- flexible	1 x 1,5 ... 2,5 mm²

2-wire

Incandescent lamps, HV halogen lamps	20 ... 300 W
LV halogen lamps with electronic transformers or dual-mode transformers	20 ... 250 W
LV halogen lamps with conventional transformers	20 ... 250 VA
Dimmable 230 V LED lamps	3 ... 70 W
Number of extension units	1

3-wire

Incandescent lamps	1500 W
HV halogen lamps	1500 W
LV halogen lamps with electronic transformers or dual-mode transformers	1500 W
NV halogen lamps with conventional transformers	1500 VA
Fluorescent lamps in lead-lag circuit	300 VA
Fluorescent lamps uncompensated	300 VA
Fluorescent lamps parallel compensated	300 VA
Energy-saving lamps	400 W
230 V LED lamps	400 W
Type of contact	Relay, μ-contact, NO contact
Number of extension units and motion detector extension units (WXF054)	max. 5

ℹ Carry out loading of conventional and electronic transformers according to manufacturer's instructions.

ℹ The performance data includes transformer power dissipation (20 % for inductive transformers and 10 % for electronic transformers).

Accessories

Supporting ring	WXA45..
Frame	WXP..
Design cover	WXD050..
Stair motion detector (for 3-wire device only)	WXF054

Status LED**	▪	▪ ▪	▪ ▪ ▪	▪ ▪ ▪ ▪	▪ ▪ ▪ ▪ ▪
Function	Operating mode	Brightness evaluation in master/slave operation (3-wire device only)	Function of the detection sensors	Reset to factory setting	Load detection (2-wire device only)
	The sections describing the individual functions explain how to select and confirm the relevant function.				

Status LED***	▪	▪	▪		▪
Function	Automatic*	Brightness evaluation on master only*	Full detection: left and right sensors active*		Automatic load detection*
Status LED***	▪ ▪	▪ ▪	▪ ▪		▪ ▪
Function	Semi-automatic	Brightness evaluation on master and slave	Only left sensor active		LED load detection
Status LED***			▪ ▪ ▪		
Function			Only right sensor active		

* Factory setting ** flashes blue *** flashes red

Tabelle 3:   Expanded settings in special menu