SIEMENS

GAMMA instabus

Motion detector WALL

UP 251/11, UP 251/12

Motion detector Wall UP 251/11, 251/12

- Passive infrared detector with 180° angle for stairways and hallways
- Detection range of up to 18 m frontally and 4 to 14 m laterally.
- Installation on the wall using the frame that is included in the scope of delivery.
- Built-in brightness, temperature and humidity sensors, and pushbutton

Functions for configuration with the ETS:

- Up to four channels that can work automatically or semi-automatically
- Constant lighting control
- Additional functions, such as presence, absence, HVAC, twilight, basic lighting and logic
- Configurable detection range

Characteristics

The motion detector is equipped with an integrated brightness sensor and two HVAC sensors: temperature and humidity.

The motion detection range is up to 18 m frontally and 4 to 14 m (depending on the detection angle) laterally.

Communication takes place via KNX. This type is designed for wall installation.

Functions

Factory settings

If a brand new detector is installed, then the integrated LED lights up with every detected movement until the sensor is configured. This indicates that there is bus voltage on the detector and that it can be configured. If the application program of the motion detector is “unloaded” using the ETS, the detector indicates its status via the LED, in the same way as when it is first started.

Programming mode and feedback LED

Programming mode via pushbutton

On the back of the device, there is a pushbutton with which the programming mode and the programming of the physical KNX address can be activated.

Feedback LED

Since the device does not have a separate programming LED, the integrated LED is used for motion sensing in test mode and for indicating the programming mode.

Behavior on bus voltage failure/recovery

If the bus voltage fails, so does the motion detector, because the electronics are powered via the bus voltage.

Before a bus voltage failure, all user entries are saved (brightness values, overrun times, switching thresholds, hystereses and locked objects) so that they can be automatically restored on bus voltage recovery after a bus voltage failure.

Behavior on unloading the application program

After unloading the application program with the ETS, the unloaded device has no functions.

Light outputs

The sensor has four independent light outputs. Each light output can be configured with its own switching threshold. Several data point types are available for selection for each output object. Depending on the data point type of the output object, a corresponding override is possible with the help of input objects.

For the light output, full and semi-automatic mode is possible.

The overrun time can be set as fixed or can be configured via the IQ mode.

Basic lighting can also be configured for each light output.

A subordinate input object is available for each output to extend the range.

Day/night switching

For the outputs light output 1 - 4 as well as constant lighting control, it is possible to make different settings for the switch-on and switch-off values of the lighting, overrun times, brightness values, offset, switch-off behavior and basic lighting setting via the "Day night switching” parameter.

For each light output and the constant lighting control, there is an input object that can be used to switch to "night mode."

Networking

All outputs that use the presence status have a subordinate input. The exception to this is the own presence output. The following operating modes are available for the input:

1. Operating mode 1:

   An ON and OFF signal is expected. The manager triggers the overrun time in the switched-on state until its own presence status is "off" and the subordinate input has the value OFF.

2. Operating mode 2:

   Only an ON signal is expected. For each ON signal, the manager, when in switched on state, triggers the overrun time.

Manager subordinate networking for:

- Light output
- Constant lighting control
- HVAC

Full and semi-automatic operation

A parameter can be used to set whether the motion detector is supposed to operate in fully automatic or semi-automatic mode. The operating mode for the light outputs and constant lighting control can be set via the "Light output mode" or "Constant lighting control mode" parameter. When operating as a fully automatic system, the lighting is automatically switched on when people are present and, depending on the setting, brightness-dependent or not, automatically switched off when people are absent or brightness is sufficient.

When operating as a “semi-automatic system,” the lighting has to be switched on manually. However, it is automatically switched off either depending on the brightness (depending on the setting) or when there is nobody within the detection range of the detector.

Constant lighting control

Constant lighting control always approaches from above the set setpoint to adjust the dimming value of the lighting.

Basic lighting

Basic lighting is available for light outputs and constant lighting control.

Presence

The presence output operates independent of brightness. A switch-on delay and an overrun time can be configured. The current status can be sent cyclically depending on the status.

Absence

Like the presence output, the absence output operates independently of brightness. A switch-on delay and an overrun time can be configured. With this configuration, the overrun time starts as soon as a person enters the detection range.

The current status can be sent cyclically depending on the status.

HVAC

The HVAC output operates independently of brightness. A switch-on delay and an overrun time can be configured. You can choose between a 1-bit object and a 1-byte object as the output object. This makes it possible to switch operating modes directly. These operating modes can be selected via the 1-byte object: auto, comfort, standby, economy and building protection.

A subordinate input is available for networking several sensors.

Twilight switch

The twilight switch output operates only depending on the measured brightness value and independently of the presence of people. If the measured value falls below the set twilight threshold, the output is switched.

Brightness

The brightness measurement output sends the measured brightness value of the sensor to the bus either after a minimum change of the value or cyclically after a fixed defined interval.

Temperature

The sensor measures the temperature in °C. The temperature sensor can be adjusted using an ETS parameter. The temperature can be sent when it changes or cyclically. In addition, an external temperature value can be received. The weighting of the external temperature value can be set.

The temperature output offers two threshold value outputs. All threshold value outputs are identical. The threshold, hysteresis and behavior of the switching output can be configured. The outputs can be sent cyclically or also locked.

Humidity

The sensor measures the relative humidity. The relative humidity can be sent when it changes or cyclically.

In addition, an external humidity value can be received. The weighting of the external humidity value can be set.

The humidity output offers two threshold outputs. All threshold value outputs are identical. The threshold, hysteresis and behavior of the switching output can be configured. The outputs can be sent cyclically or also locked.

Dew point

The dew point, or dew point temperature, is the temperature below which water vapor must fall at constant pressure for it to separate as dew or mist from moist air. At the dew point, the relative humidity is 100%, that is, the air is (just barely) saturated with water vapor. The sensor calculates the dew point temperature using the measured temperature and the relative humidity.

The dew point can be sent when it changes or cyclically. A dew point alarm is also possible via a switching command.

Comfort

DIN 1946 defines thermal comfort in occupied rooms using a field with 5 limiting parameters: minimum and maximum room temperature, minimum and maximum relative humidity and maximum absolute humidity of the ambient air.

If measured values fall outside the comfort field, a freely definable text message (ASCII 14 characters) can be output. The comfort field can be adapted flexibly for other usage, operating and storage conditions.

In addition, there is a switching object that reflects the status “comfortable” or “uncomfortable.”

Pushbutton

This setting can be used to set up the function of the integrated pushbutton. The following are available: inactive, switching/dimming, blind control, 1-byte value transmitter, 2-byte value transmitter, scene switch or internal switching/dimming.

Logic gate

Up to two logic gates with up to four inputs each can be configured. The possible links are AND, OR and EXCLUSIVE-OR. The output signal can be issued via a switching command or value.

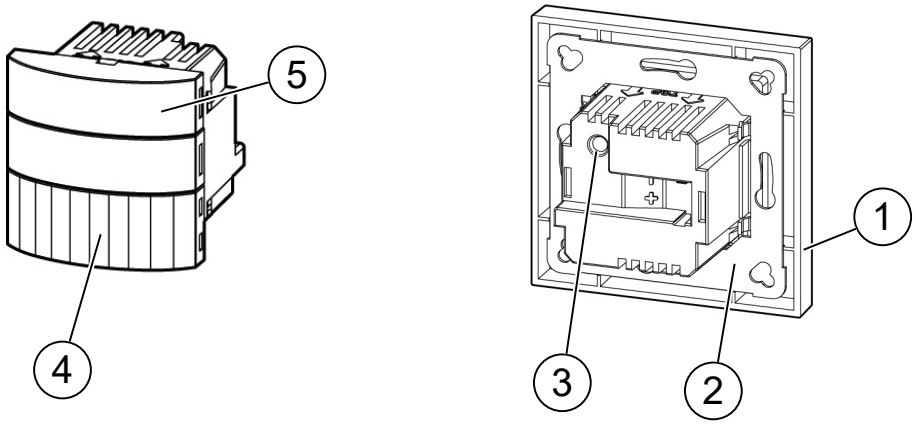
The switching command or value can be configured depending on the logic state. The output can send the current status to the KNX bus on change, on change to logic 1 or on change to logic 0.

Sabotage

The sabotage output is used as the heartbeat. If no interval telegram appears, the detector is defective or has been tampered with, e.g. the sensor head has been pulled off.

Technique/execution

Display and control elements

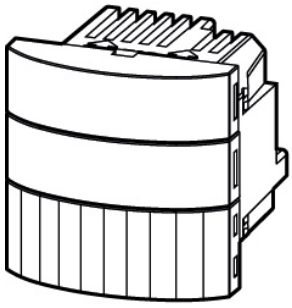


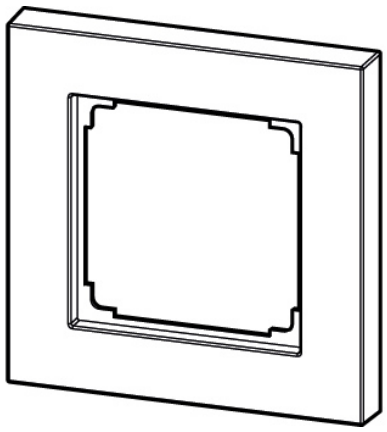
1	1-fold frame
2	Metal retaining clip
3	Programming button
4	Programming LED
5	Pushbutton

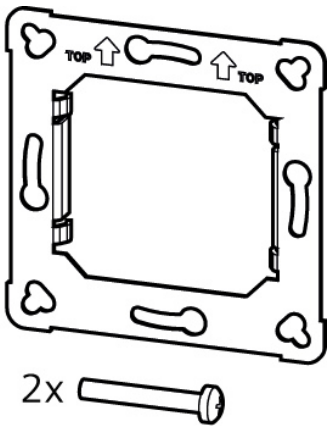
Type overview

Type	Description	Article number	KNX PL-Link
UP 251/11	Motion detector Wall UP 251/11 (white)	5WG1251-2AB11	No
UP 251/12 	Motion detector Wall UP 251/12 (black)	5WG1251-2AB12	No

The device is intended for wall mounting at a height of 1.10 m, valid for conduit boxes as per CEE/VDE, China and Switzerland. Its own frame is included in the scope of delivery. This enables stand-alone installation without dependence on other mechanisms. The device cannot be used with a Siemens frame. The scope of delivery includes the following:







Version of the Engineering Tool Software

Application	Version
Engineering Tool Software (ETS)	ETS 5 or above

Product documentation and support

Product documentation

Documents related the product, such as operating and installation instructions, application program description, product database, additional software and CE declarations can be downloaded from the following website:

http://www.siemens.com/gamma-td

Frequently asked questions

For frequently asked questions about the product and their solutions, see:

https://support.industry.siemens.com/cs/products?dtp=Faq&mfn=ps&lc=en-WW

Support

Contact details for additional questions relating to the product:

Tel.: +49 89 9221-8000

http://www.siemens.com/supportrequest

Notes

Security

⚠ WARNING	
	**Risk of death due to electric voltage and electric current!** Electrical expertise is required for the installation. Incorrect installation can deactivate electrical safety features without this being apparent to a lay person. ● Do not open the housing of the device. ● The device should only be installed and put into operation by a certified electrician.

NOTICE	
!	For planning and setup of electric systems, the relevant guidelines, observe the regulations and standards of the respective country.

Note on installation

The motion sensor can be used for fixed installations indoors and in dry locations.

Note on clearing

The device may only be cleaned using dry and damp cloths. The use of detergents or disinfectants is not permitted and can result in damage to the device.

Mounting

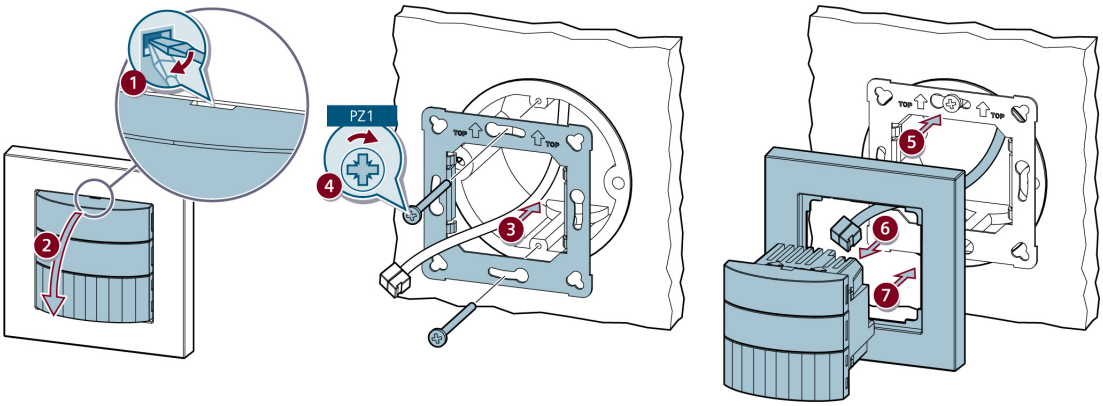


Fig. 1: Motion detector Wall UP 251/11 , UP 251/12

Process

1. Use a screwdriver to lever the motion detector out of the 1-fold frame.
2. Guide the KNX cable through the metal retaining clip.
3. Screw the metal retaining clip onto the wall
4. Guide the KNX cable through the 1-fold frame and connect it to the motion sensor.
5. Insert the motion detector into the 1-fold frame and attach it to the wall using the metal retaining bracket.

Connecting/disconnecting from KNX

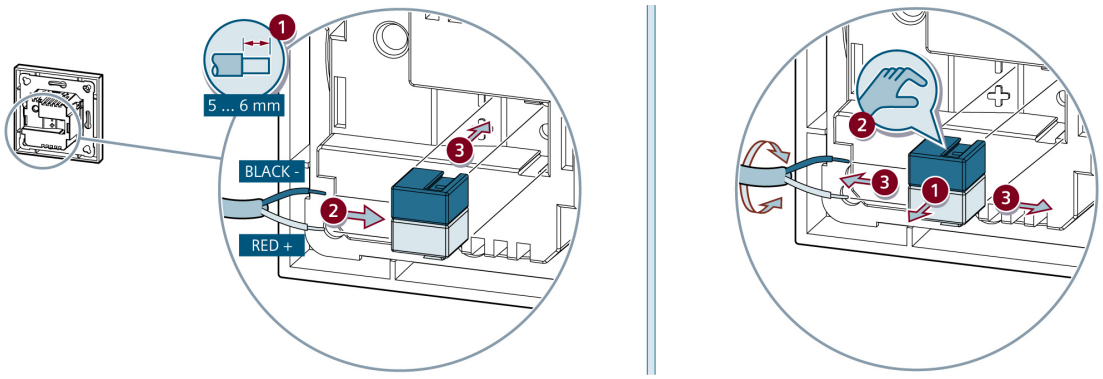


Fig. 2: Motion detector Wall UP 251/11 , UP 251/12

Cu	
	0.6…0.8 mm

Connecting

1. Insert the wires into the bus terminal block.
2. Notice the bare wire length.
3. Attach the bus terminal block to the connector in the motion sensor.

Disconnecting

1. Remove the bus terminal from the motion detector (e.g. screwdriver).
2. Rotate the wires to release them from the bus terminal block.

Function test of the installation

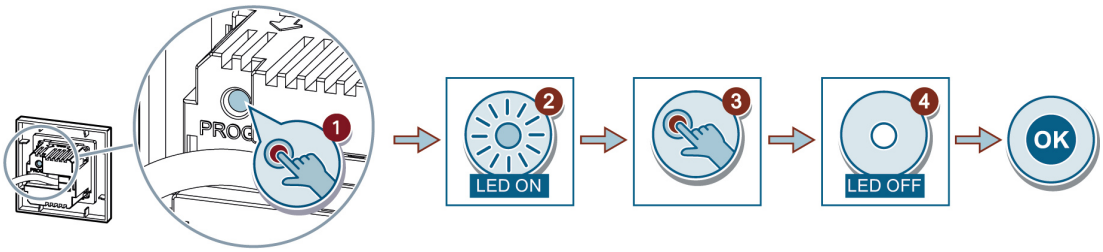


Fig. 3: Motion detector Wall UP 251/11 , UP 251/12

Disposal

If a device is defective, contact the local sales office.

The device is considered an electronic device for disposal in accordance with European Directive and may not be disposed of as domestic waste.

- Use only designated channels for disposing the devices.
- Comply with all local and currently applicable laws and regulations.

Technical data

Power supply	
KNX bus voltage	DC 24 V (DC 21...30 V)
KNX bus current	12 mA
KNX power loss (power consumption)	0.7 W

Motion detection	
Type	Passive infrared (PIR)
Optimal installation height	1.1 m
Range, side maximum	14 m
Range, front maximum	18 m

Mechanical data	
Housing material	Plastic
Dimensions	See Dimension drawing [▶ 11]
Product weight	78 g
Color	UP 251/11: white (similar to RAL 9010) UP 251/12: black (similar to RAL 9005)
Fire load	2 MJ

Environmental conditions	
Ambient temperature in operation	0 °C...+40 °C (32 °F...104 °F)
Storage temperature	-20 °C...+70 °C (-4 °F...158 °F)
Transport temperature	-25 °C...+70 °C (-13 °F...158 °F)
Relative humidity (non-condensing)	5 %...95 %
Environmental rating	EN 60721-3-3 class 3k5

Protection settings	
Degree of pollution (according to IEC 60664-1)	2
Overvoltage category (according to IEC 60664-1)	III
Housing protection class (according to EN 60529)	IP20
Electrical safety, bus (SELV)	Yes
Electrical safety, device complies with	EN 50428
EMC requirements, device complies with	EN 61000-6-1 EN 61000-6-3
Test mark	KNX, EAC, RCM
CE mark	yes
Class according to FCC and ICES-03 (Canada)	Class B

Reliability	
Failure rate (at 40°C)	113 fit

Motion detection

The motion detector UP 251/11, UP 251/12 offers a detection option through PIR technology.

The following diagram shows the maximum diameter of the individual zones in meters at an installation height of 1.1 m and has been developed for use in hallways and stairways.

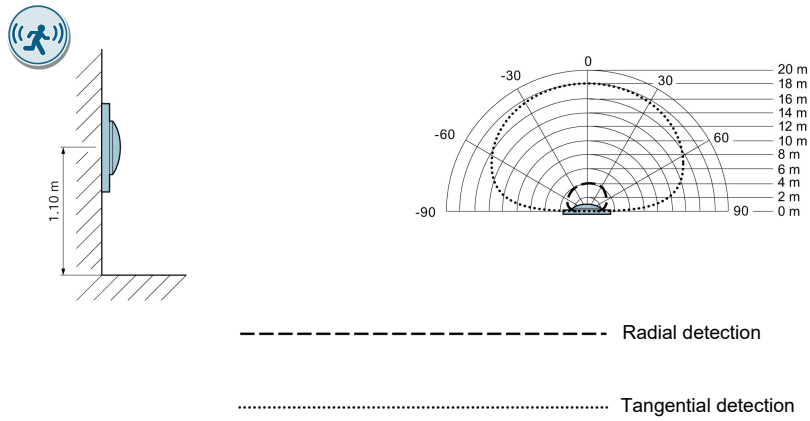
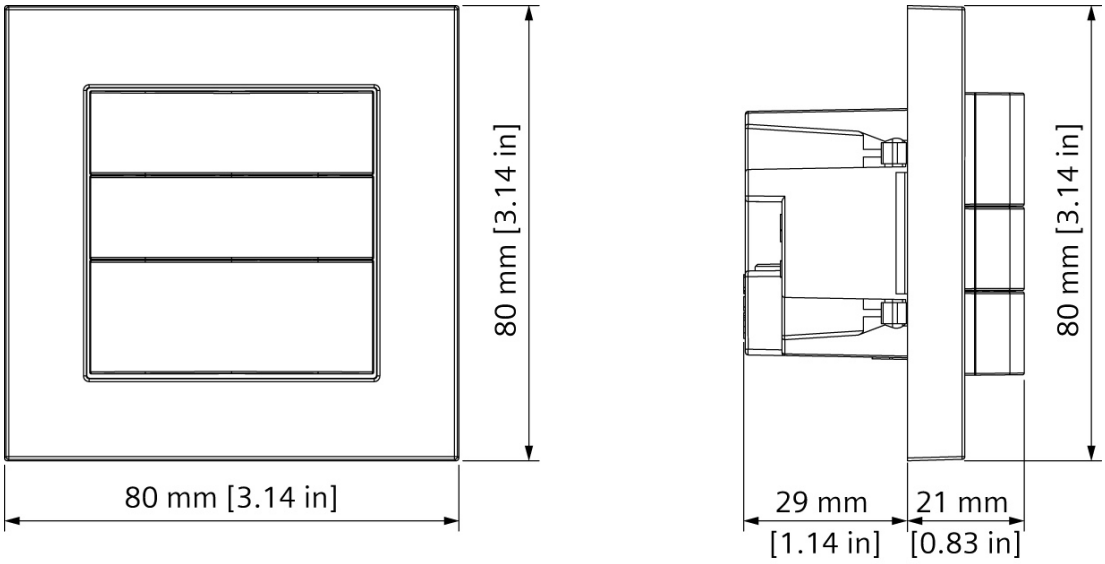


Fig. 4: Motion detector Wall UP 251/11 , UP 251/12

Dimension drawing



Compliance information

FCC Statement

⚠ WARNING	
	Installation and usage of equipment not in accordance with instructions manual may result in: Radiation of radio frequency energy Interference to radio communications ● Install and use equipment in accordance with installation instructions manual ● Read the following information

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications.

It has been tested and found to comply with the limits for a Class A computing device pursuant to Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation

FCC Caution: Changes or modifications not expressly approved by Siemens Switzerland Ltd. could void the user's authority to operate the equipment. United States representative https://new.siemens.com/us/en/products/buildingtechnologies/home.html

Industry Canada statement

This device complies with ISED's license-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

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