SIEMENS

25 S1 Motion Detector 909101

Use of the application program

Product family:	Physical sensors
Product type:	Motion detector
Manufacturer:	Siemens
Name:	AP 251 Motion detector IP55
Order no.:	5WG1 251-3AB11 (titanium white)
	5WG1 251-3AB21 (anthracite)

Contents overview

1. Functional overview

Detector hardware

The motion detectors AP 251/11 (casing color titanium white) and AP 251/21 (casing color anthracite) are surface-mounted devices with integrated KNX-interface and due to their design and protection class (IP55) are suitable for mounting on a wall or ceiling as well as inside or outside. Owing to its large capture zone of 290°, the motion sensors are also especially suitable for mounting on a 90° outside corner. A special mounting base is also available for this purpose as an accessory (5TC7 900 in titanium white and 5TC 901 in anthracite). The detector electronics are powered via the bus voltage.

The detectors passively detect the heat radiation of objects in their capture zone. Their operation modes (test mode, brightness-dependent or brightness-independent mode, standard mode according to factory setting, pulse mode) as well as the parameters "brightness threshold" and "delay time" are not set with the Engineering Tool Software (ETS) via the bus. Rather, this can be done by the user either by using the two buttons S1 and S2 on the sensor side of the detector or easily and comfortably by using the infrared remote control available as an accessory (5TC7 902) via an IR-receiver that is integrated in the motion detector.

Detector modes

On first applying the bus voltage and after every bus voltage recovery, the motion detector starts its **initialisation phase**. The red LED inside the lens flashes approx. 3 times per second, until the device enters test mode automatically after a max. 45 seconds.

The **test mode** is a brightness-independent mode with a power-on duration of 1 s and an after-run time of 2s. It can be used for manual checking of the capture zone and to change the alignment or sensing angle of the lens. At the end of the test mode period of 10 minutes, the motion detector switches automatically to the factory setting or to the individual setting made.

Test mode will be started automatically on first connecting to the bus voltage only after the initialization phase has cycled or after a reset by the user. During any later bus voltage failure, only the initialization phase (approx. 15 seconds) will then be recycled and the motion detector then enters the individual setting directly, or the factory setting if no individual setting has been programmed yet.

In **standard mode** (which corresponds to the factory setting of the mode in the as-delivered state), a brightness-dependent motion detection with a brightness threshold of 7 Lux and a delay time of 2 minutes is activated.

Whereas during **brightness-independent operation** the detector is switched on for the set after-run time with every motion captured, during **brightness-dependent operation** the detector is switched on with a captured motion only if the brightness falls below the set switching threshold.

In **pulsed mode**, the detector output is switched on for 1 second if the brightness is below the threshold and motion is detected. It will then no longer respond to a movement for 9 seconds.

Information about the setting of the different modes can be found in the "Operating and Mounting Instructions".

Behaviour in case of bus voltage failure/recovery

In case of a bus voltage failure the motion detector stores the current status internally. In case of bus voltage recovery, the current status is sent immediately if it differs from the previously stored status.

The condition of the blocking object is only restored if this was set via the corresponding parameter. Otherwise, the motion detector is not blocked after the recovery of the bus voltage.

Application program

For the parameterization and loading of the application program, ETS from version ETS3 upwards is required. With it, different actions can be parameterized for the beginning and end of a movement detected by the de-

Siemens AG
Industry Sector, Building Technologies
Electrical Installation Technology
P.O. Box 10 09 53, D-93009 Regensburg

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tector. It can be set separately whether a telegram "Movement = On" or "Movement = Off" is to be sent once or cyclically and whether an additional telegram is to be sent once or cyclically afterwards. The respective additional telegram can be an On / Off switching command, an 8-bit value (0-255) or a telegram to recall an 8-bit scene.

The detector can be blocked and released again via a separate communication object, if required. In case the detector is blocked, a telegram is sent neither at the beginning nor at the end of a detected movement.

2. Communication objects

Which objects of the motion detector are visible respectively and which information can therefore be transmitted is determined by the setting of the parameters as selected by the user.

Maximum number of group addresses:	16
Maximum number of assignments:	16

Number	Name	Object Function	Length	C	R	W	T	U
0	Movement	On / Off	1 bit	C	R	W	T	-
1	Detector blockade	On / Off	1 bit	C	R	W	T	-
2	Switching	On / Off	1 bit	C	R	W	T	-

Obj	Object name	Function	Type	Flag
0	Movement	On / Off	1 bit	CRWT
This object is used to report the beginning and / or end of a detected movement. Note: After bus voltage recovery it takes approx. 15 s before the detector can send via this object.				
1	Detector blockade	On / Off	1 bit	CRWT
This object is used to block the detector (1=detector blocked) and release it again (0=detector released). A blocked detector sends no telegrams. If it is released after a blockage, then it sends the current status if this has changed during the blockage. During the blockage, however, the current "movement status" can be read out via object 0.				

The communication object 2 is only available if the setting "switching", "8-bit value" or "8-bit scene" was selected in the "Send additional telegram" parameter. Depending on the setting, the name and function of object 2 will change. The telegrams of object 0 and object 2 are sent in immediate succession in case of begin and end of a detected movement.

Obj	Object name	Function	Type	Flag
2	Switching	On / Off	1 bit	CRWT
This object is only visible if at least one of the "Send additional telegram" parameters in the "Movement" parameter window is set to "switching". This object can be used to send an additional switching telegram once or cyclically after a "Movement =On" (or "Movement =Off") telegram. The respective telegram content (logical 0 or 1) is set via the "Movement" parameter window.				
2	8-bit scene	recall	1 byte	CRWT
This object is only visible if at least one of the "Send additional telegram" parameters in the "Movement" parameter window is set to "8-bit value". This object can be used to send an additional telegram once or cyclically after a "Movement =On" (or "Movement =Off") telegram. The respective value to be sent is set via the "Movement" parameter window.				
2	8-bit value	send	1 byte	CRWT
This object is only visible if at least one of the "Send additional telegram" parameters in the "Movement" parameter window is set to "8-bit scene". This object can be used to send an additional telegram to recall an 8-bit scene once or cyclically after a "Movement =On" (or "Movement =Off") telegram. The number of the 8-bit scene to be recalled respectively is set via the "Movement" parameter window.				

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3. Parameter

3.1. Parameter window "General"

Parameter	Settings
Value of blocking object after bus voltage recovery	**Off** as before bus voltage failure
This parameter is used to set to which value the "Detector block-ade" object is to be set automatically after bus voltage recovery. "Off" means that the detector is not blocked.	
Cycle time	1 second 3 seconds 5 seconds **10 seconds** 15 seconds 20 seconds 30 seconds 45 seconds 1 minute
This parameter is used to set the joint cycle time for all objects that are to be sent cyclically.	

3.2. Parameter window "Movement"

Parameter	Settings
If motion is detected, send	**On** Off no telegram
This parameter is used to set whether after a captured movement a telegram should be sent and whether the telegram content should be "On" or "Off".	
Send cyclically	**No** Yes
If a cyclical sending of a captured movement is desired, then this parameter is to be set to "Yes".	
Send additional telegram	**no telegram** switching 8-bit scene 8-bit value
This parameter is used to set whether after a captured movement an additional telegram may need to be sent and which telegram type is to be sent.	
<u>Note:</u> The telegram type selected here is automatically offered as single selection for a telegram to be sent additionally at the end of a captured movement.	
Switching	**Off** On
This parameter is visible only if the previous "Send additional telegram" parameter is set to "switching".	
This parameter is used to set whether an On or Off telegram is to be sent.	
Number of 8-bit scene (1...64)	1 ... 64
This parameter is visible only if the previous "Send additional telegram" parameter is set to "8-bit scene".	
This parameter is used to set the number of the 8-bit scene to be recalled.	

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Parameter	Settings
8-bit value (0...255)	**0**
This parameter is visible only if the previous "Send additional telegram" parameter is set to "8-bit value". This parameter is used to set the 8-bit value in the range 0...255 that is to be sent.	
Send cyclically	**No** Yes
If the cyclical sending of the additional telegram at the beginning of a captured movement is desired, then this parameter is to be set to "Yes".	
If motion is no longer detected, send	On **Off** no telegram
This parameter is used to set whether a telegram or which telegram should be sent if by the end of the delay time no additional movement has been captured.	
Send cyclically	**No** Yes
If a cyclical sending of a telegram that no more movement has been captured is desired, then this parameter is to be set to "Yes".	
Send additional telegram	**no telegram** (On) (Off) (8-bit scene) (8-bit value)
This parameter is used to set whether after a captured movement an additional telegram may need to be sent and which telegram type is to be sent. As additional telegram only that type of telegram is offered here which was selected as additional telegram at the beginning of a detected movement. If switching was selected either "On" or "Off" will be offered here.	
Number of 8-bit scene (1...64)	**1 ... 64**
This parameter is visible only if the previous "Send additional telegram" parameter is set to "8-bit scene". This parameter is used to set the number of the 8-bit scene to be recalled.	
8-bit value (0...255)	**0...255**
This parameter is visible only if the previous "Send additional telegram" parameter is set to "8-bit value". This parameter is used to set the 8-bit value in the range 0...255 that is to be sent.	
Send cyclically	**No** **Yes**
If the cyclical sending of an additional telegram after the telegram that no more movement was detected is desired, then this parameter is to be set to "Yes".	