

## **OUTDOOR MOTION DETECTOR, KNX, 360°, 16 M, FOR SURFACE MOUNTING**



**350-213001**

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## 1. FUNCTIONAL DESCRIPTION

The 360° KNX presence detector is designed for outdoor surface-mounted installation on walls (or ceilings) and use in integrated solutions with other KNX system components. The device detects movement and the presence of persons with the aid of Passive InfraRed technology (PIR). The detector has five independent output channels: two light control outputs, two HVAC control outputs and one alarm function output. The detector is designed for outdoor surface mounting on walls or ceilings and has a detection area of 16 meter in diameter from a height of 2,5 meter.

The detector is supplied with power by the KNX bus. Communication on the KNX bus follows the KNX principle. This manual describes the configuration of the detector using the ETS 4.0 software or higher.

## 2. COMMUNICATION OBJECTS

→ input objects  
← output objects

Object number & name		Object function	Description
0: Secondary input	→	Secondary motion input	Slave detectors can be connected to the master detector to enlarge the detection area. This object receives the detecting telegram from a secondary detector.
1: Secondary output	←	Secondary motion output	Send the detecting telegram from a slave detector to a master detector.
2: Test output	←	Test mode ON/OFF	Used to check and adjust the detection coverage while installing the detector.
3: C1 manual input	→	Channel 1 ON/OFF/Dim manual control	Receive a telegram from a push button (ON/OFF/Dim) connected to the bus and control channel 1.
4: C2 manual input	→	Channel 2 ON/OFF/Dim manual control	Receive a telegram from a push button (ON/OFF/Dim) connected to the bus and control channel 2.
5: C3 manual input	→	Channel 3 ON/OFF manual control	Receive the telegram from the push button (ON/OFF) connected to the bus and control channel 3.
6: C3 manual input	→	Channel 4 ON/OFF manual control	Receive the telegram from the push button (ON/OFF) connected to the bus and control channel 4.
7: C1 Light control output	←	Settings for lighting channel 1 ON/OFF	When movement is detected and the ambient light level is below the pre-set lux value, the output sends an ON telegram. If ambient light is sufficient and/or no person is present, an OFF telegram is sent once the switch-off delay time has elapsed.
8: C1 Light control dimming value	←	Settings for lighting channel 1 Absolute dimming control	When movement is detected, the output sends a pre-set light level telegram and enters into switch-off delay mode. When the switch-off delay time is elapsed, the output sends a pre-set standby brightness telegram and enters into standby mode. The output sends an OFF telegram once the standby delay time has elapsed.
10: C1 Constant light control	←	Settings for lighting channel 1 Relative dimming control	When movement is detected, the output sends an ON telegram and executes the constant lighting control function depending on the set point during switch-off delay time. If no person is present, an OFF telegram is sent once the switch-off delay time has elapsed.
11: C2 Light control output	←	Settings for lighting channel 2 ON/OFF	When movement is detected and the ambient light level is below the pre-set lux value, the output sends an ON telegram. If ambient light is sufficient and/or no person is present, an OFF telegram is sent once the switch-off delay time has elapsed.
12: C2 Light control dimming value	←	Settings for lighting channel 2 Absolute dimming control	When movement is detected or when a telegram is received from a secondary detector, the output sends a pre-set light level telegram and enters into switch-off delay mode. When the switch-off delay time is elapsed, the output sends a pre-set standby brightness telegram and enters into standby mode. The output sends an OFF telegram once the standby delay time has elapsed.
14: C2 Constant light control	←	Settings for lighting channel 2 Relative dimming control	When movement is detected or when a telegram is received from a secondary detector, the output sends an ON telegram and executes the constant lighting control function depending on the set point during switch-off delay time. If no person is present, an OFF telegram is sent once the switch-off delay time has elapsed.
15: C3 HVAC control output	←	Settings for HVAC channel 3 ON/OFF	When movement is detected, depending on the input delay, an ON telegram is sent. If no movement is detected, depending on the switch-off delay time, an OFF telegram is sent.
16: C4 HVAC control output	←	Settings for HVAC channel 4 ON/OFF	When movement is detected, depending on the input delay, an ON telegram is sent. If no movement is detected, depending on the switch-off delay time, an OFF telegram is sent.
17: Lock alarm	←	Settings for Alarm channel 3 "1" locks "0" unlocks	"1" locks the alarm function, while "0" unlocks the alarm function.
18: Alarm output	←	Settings for Alarm channel 3 ON/OFF	An alarm is triggered if a continuous number of movements are detected within a parameter in a certain time frame. Different time frames can be defined for the switching ON and OFF of an alarm.

### 3. PARAMETERS

To configure the 360° KNX presence detector with the KNX ETS software, you should open the parameter screen of the presence detector. To do this, select the presence detector in the Devices panel of the respective project and click on the Parameter tab.

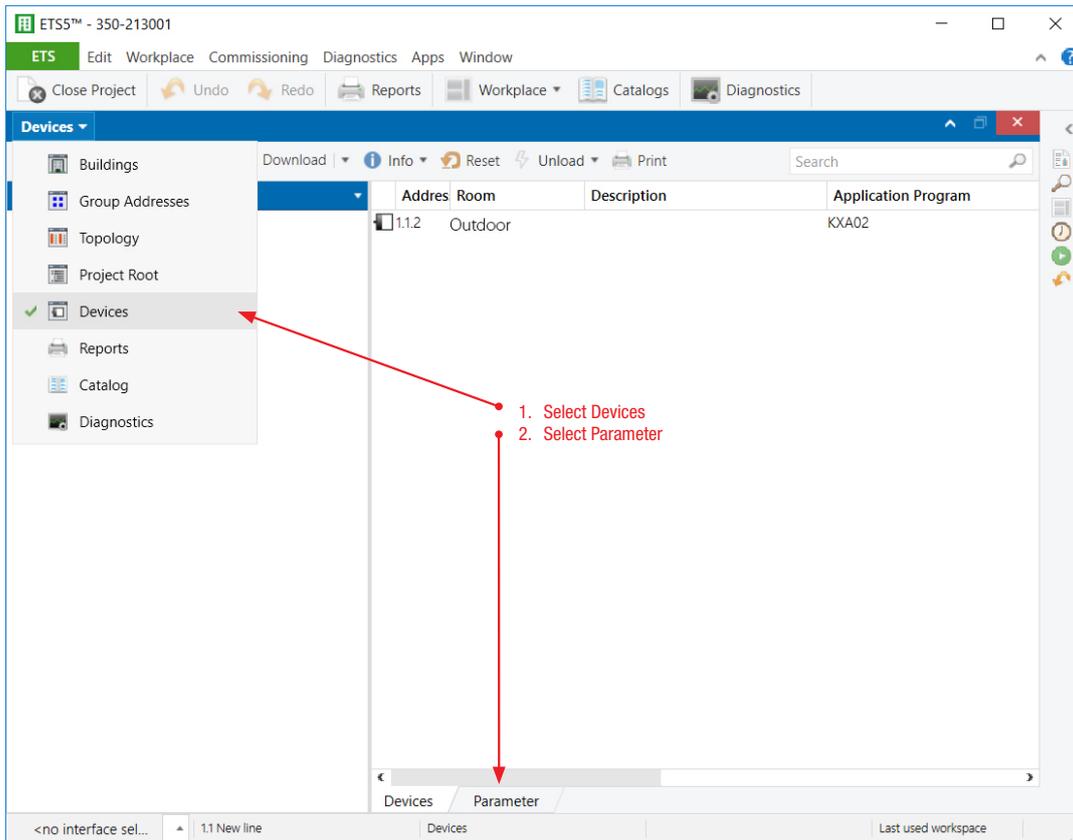


Figure 1: Devices panel

### 3.1. GENERAL

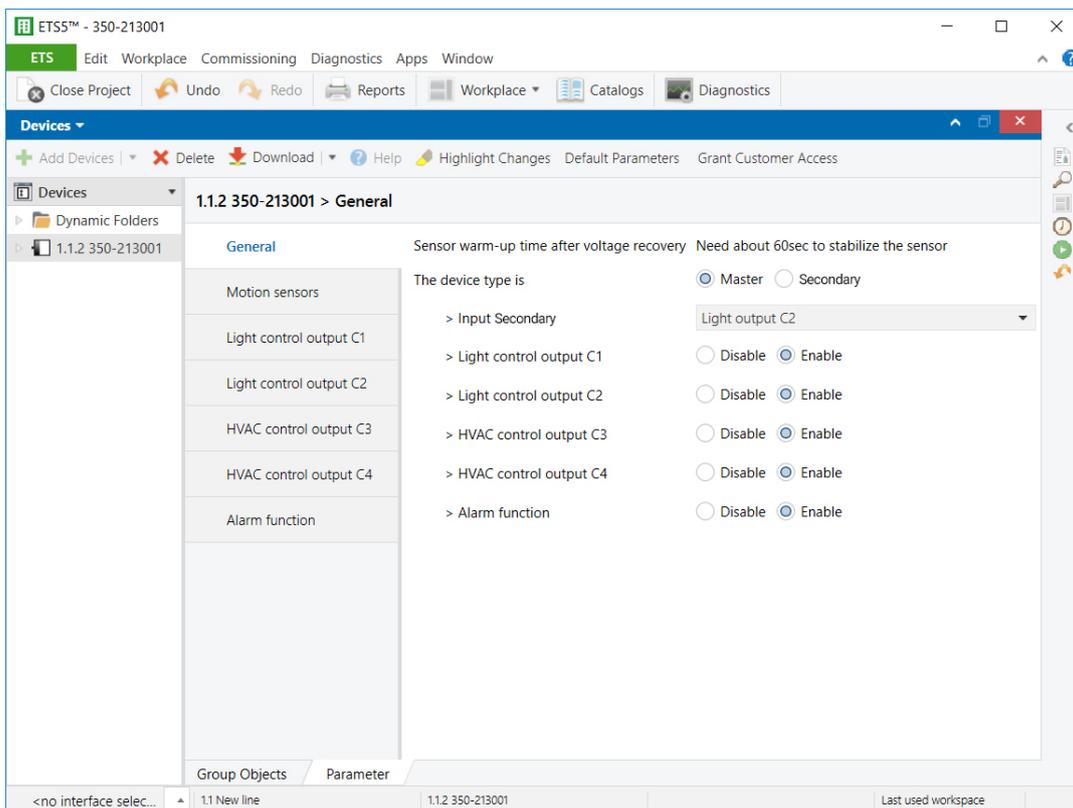


Figure 2: General panel

Parameter	Description	
<b>The device type is</b>	With this parameter the detector can be configured as master or secondary device. Default Value: Master	
	Master	When the device type is set to Master, all the functions and parameters are applicable. A master device can receive the triggering signal from one or more secondary detectors. However, the signal reception channel can be selected depending on the requirement.
	Slave	When the device type is set to Slave, it is used exclusively to extend the detection area. Only the Motion sensors panel (to configure the sensor sensitivity) will be shown. When the secondary detector detects movement, it transmits a signal to the Master for evaluation according to the set parameters.
<b>Input Slave</b>	Select Light Output C1, C2, C3 or C4 to receive a secondary signal or not Default value: Light output C1	
	Light output C1 Light output C2 HVAC output C3 HVAC output C4	Assign the appropriate channel to receive the signal from a secondary detector. Please refer to above mentioned section "Master/secondary" for detailed information.
<b>Light control output C1</b>	When light control output C1 is set to Enable, the respective parameter panel for this channel is shown. When Light control output C1 is set to Disable, the respective parameter panel for this channel is hidden. Default: Enable	
	Disable	Light control output C1 is not active and the respective parameter panel is hidden.
	Enable	Light control output C1 is active and the respective parameter panel is shown.
<b>Light control output C2</b>	When light control output C2 is set to Enable, the respective parameter panel for this channel is shown. When Light control output C2 is set to Disable, the respective parameter panel for this channel is hidden. Default: Disable	
	Disable	Light control output C2 is not active and the respective parameter panel is hidden.
	Enable	Light control output C2 is active and the respective parameter panel is shown.
<b>HVAC control output C3</b>	When HVAC control output C3 is set to Enable, the respective parameter panel for this channel is shown. When HVAC control output C3 is set to Disable, the respective parameter panel for this channel is hidden. Default: Disable	
	Disable	HVAC control output C3 is not active and the respective parameter panel is hidden.
	Enable	HVAC control output C3 is active and the respective parameter panel is shown.
<b>HVAC control output C4</b>	When HVAC control output C4 is set to Enable, the respective parameter panel for this channel is shown. When HVAC control output C4 is set to Disable, the respective parameter panel for this channel is hidden. Default: Disable	
	Disable	HVAC control output C4 is not active and the respective parameter panel is hidden.
	Enable	HVAC control output C4 is active and the respective parameter panel is shown.
<b>Alarm function</b>	When Alarm function output is set to Enable, the respective parameter panel for this output is shown. When Alarm function output is set to Disable, the respective parameter panel for this output is hidden. Default: Disable	
	Disable	Alarm function output is not active and the respective parameter panel is hidden.
	Enable	Alarm function output is active and the respective parameter panel is shown.

### 3.2. MOTION SENSORS

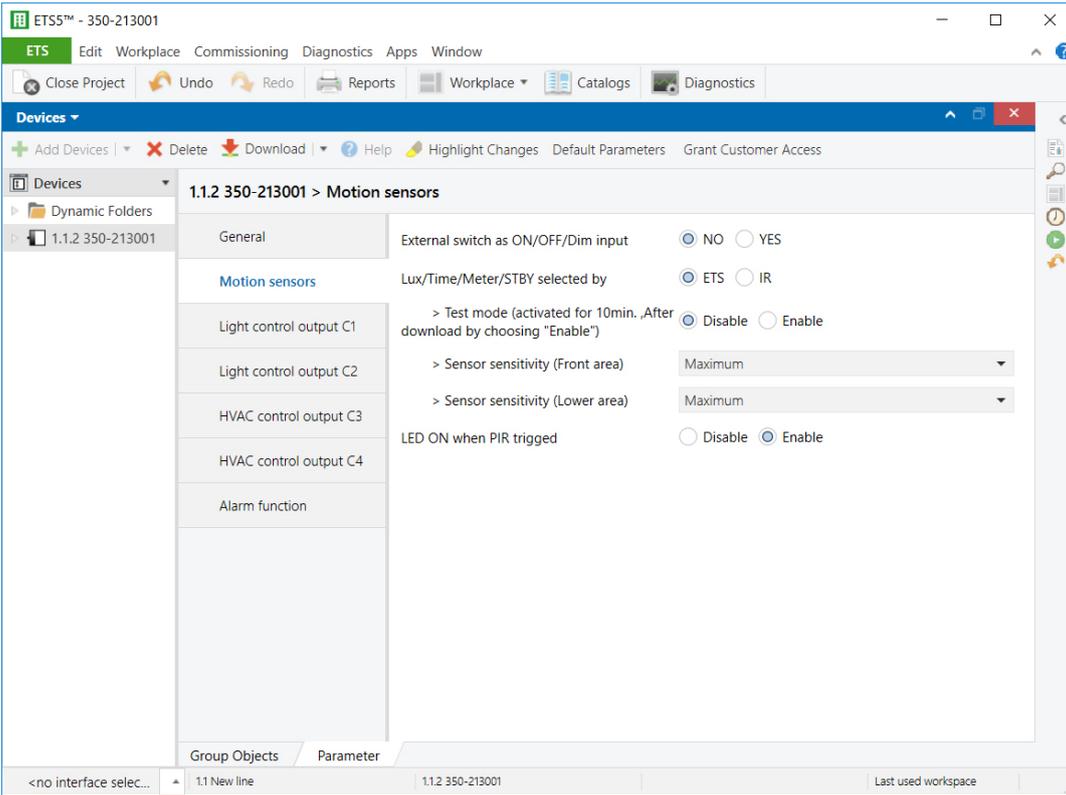


Figure 3: Motion sensors - Master

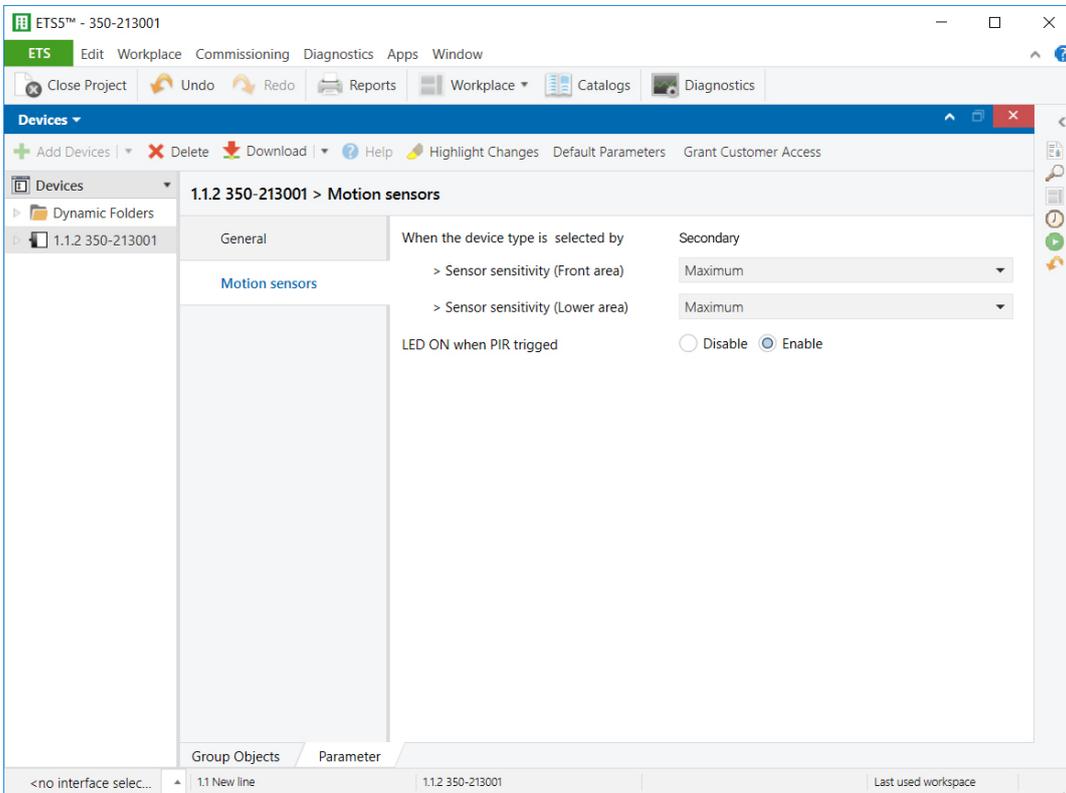


Figure 4: Motion sensors - secondary

Parameter	Description	
<b>External push button as ON/OFF/Dim input</b>	The Manual ON/OFF and DIM function can be operated by an external push button that is connected to the KNX bus system with a KNX interface module. Default: NO	
	NO	Disable this feature.
	YES	Enable this feature.
<b>lux/Time/Meter/STBY selected by</b>	The lux-, Time-, Meter- and STBY-setting of the detector can be changed by the KNX ETS software or the IR remote control (350-999908). Note: It is only valid for C1 and C2. Default: ETS	
	ETS	When the control mode is set to "ETS", all the parameters on the detector can only be changed by the KNX ETS software after completing the object build up. Value settings performed by the potentiometer on the detector or by the IR remote control (350-999908) are invalid.
	IR	When the control mode is set to "IR control", all the parameters on detector can be changed by the IR remote control (350-999908); changing the switch-off delay value, switch on lux value, etc.
<b>Test mode</b>	Test mode can be used to test the settings of the motion sensors. When Test mode is set to Enable, the test mode will be activated after storing the settings in the device and will be deactivated automatically 10min later. The device will then enter into auto mode or semi-auto mode according to the setting of Auto-Semi-auto select. Default: Disable	
	Disable	Test mode function is disabled.
	Enable	Test mode function is activated. Once the movement is detected, both the load and the red LED turn on for 2sec and then off for 2sec.
<b>Sensor sensitivity (Front area)</b>	This parameter is used to increase or decrease the sensitivity of the PIR-sensor for the front area of the detector. The sensitivity can be adjusted according to user's requirement whether the detector is configured as master or secondary. Default: Maximum	
	Maximum	Set the PIR-sensor for the front area to maximal sensitivity.
	High	Set the PIR-sensor for the front area to high sensitivity.
	Medium	Set the PIR-sensor for the front area to medium sensitivity.
	Low	Set the PIR-sensor for the front area to minimal sensitivity.
	Off	Deactivate the detecting function of the PIR-sensor for the front area.
<b>Sensor sensitivity (Lower area)</b>	This parameter is used to increase or decrease the sensitivity of the PIR-sensor for the underlying area of the detector. The sensitivity can be adjusted according to user's requirement whether the detector is configured as master or secondary. Default: Maximum	
	Maximum	Set the PIR-sensor for the underlying area to maximal sensitivity.
	High	Set the PIR-sensor for the underlying area to high sensitivity.
	Medium	Set the PIR-sensor for the underlying area to medium sensitivity.
	Low	Set the PIR-sensor for the underlying area to minimal sensitivity.
	Off	Deactivate the detecting function of the PIR-sensor for the underlying area.
<b>LED ON when PIR triggered</b>	If this parameter is enabled, the indication LED on the detector will switch on when the PIR-sensor is triggered. Default: Enable	
	Disable	The LED will give no indication when the PIR-sensor is triggered. Other LED indicating functions will remain.
	Enable	LED will turn on for 1sec for indication when PIR-sensor is triggered.

### 3.3. LIGHT CONTROL OUTPUT (C1 AND C2)

The light control outputs C1 and C2 can be configured as switching output or dimming output.

#### 3.3.1. LIGHT CONTROL OUTPUT – SWITCHING

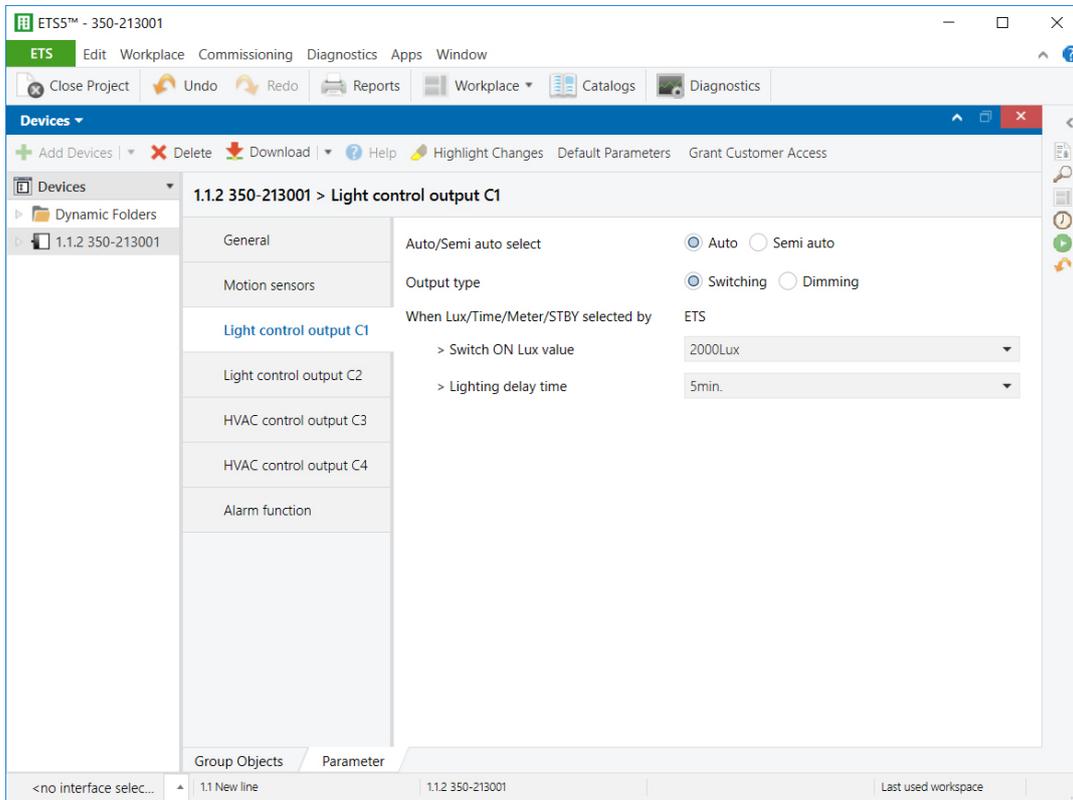


Figure 4: Light control output – switching

Parameter	Description	
<b>Auto/Semi auto select</b>	This parameter is used to activate / deactivate Auto mode or Semi auto mode of the concerned light control output (C1 – C2). Default: Auto	
	Auto	When Auto mode is activated, the load will turn on automatically when movement is detected and the ambient light level is below the lux setting value. When movement is no longer detected and the switch-off delay time has expired, the load will turn off automatically.
	Semi auto	When Semi auto mode is activated, the load can only be switched on manually with the connected external push button. When movement is no longer detected and the switch-off delay time has expired, the load will turn off automatically.
<b>Output type</b>	This parameter is used to configure the output type of the detector as switching output or dimming output. Default: Switching	
	Switching	Configure the output type of the the concerned light control output (C1 – C2) as switching output. That way, a switching actuator can be connected for ON/OFF operation.
	Dimming	Configure the output type of the light control output as dimming output. That way, a dimming actuator can be connected for output operation (with absolute brightness, standby brightness and/or constant brightness control).
<b>Switch ON lux value</b>	This parameter is used to set the desired lux value at which the sensor output must switch on. You can select the value via a drop-down list. Default: 2000 lux	
	5 – 2000, ∞ lux	Use the drop-down list to set the desired Switch on lux value for the concerned light control output (C1 – C2). Infinity: not controlled by lux value.
<b>Lighting delay time</b>	This parameter is used to set the switch-off delay value. You can select the value via a drop-down list. Default: 5 min	
	5 sec – 60 min	Use the drop-down list to set the desired switch-off delay value for the concerned light control output (C1 – C2).

## 3.3.2. LIGHT CONTROL OUTPUT – DIMMING

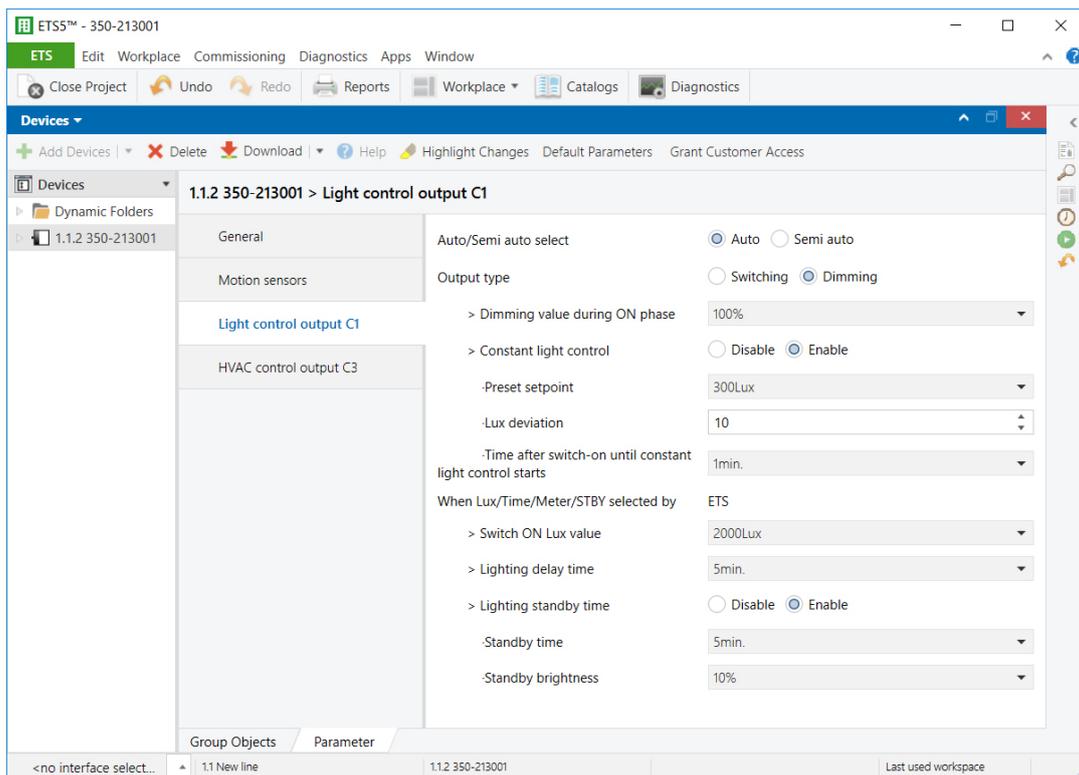


Figure 5: Light control output – dimming

Parameter	Description	
<b>Auto/Semi auto select</b>	This parameter is used to activate / deactivate Auto mode or Semi auto mode of the concerned light control output (C1 – C2). Default: Auto	
	Auto	When Auto mode is activated, the load will turn on automatically when movement is detected and the ambient light level is below the lux setting value. When movement is no longer detected and the switch-off delay time has expired, the load will turn off automatically.
	Semi auto	When Semi auto mode is activated, the load can only be switched on manually with the connected external push button. When movement is no longer detected and the switch-off delay time has expired, the load will turn off automatically.
<b>Output type</b>	This parameter is used to configure the output type of the detector as switching output or dimming output. Default: Switching	
	Switching	Configure the output type of the concerned light control output (C1 – C2) as switching output. That way, a switching actuator can be connected for ON/OFF operation.
	Dimming	Configure the output type of the light control output as dimming output. That way, a dimming actuator can be connected for output operation (with absolute brightness, standby brightness and/or constant brightness control).
<b>Dimming value during ON phase</b>	This parameter is used to set the initial dimming value at which the lighting will switch on. Default: 100%	
	1% - 100%	Use the drop-down list to set the desired dimming value at which the lighting will switch on.
<b>Constant light control</b>	This parameter is used to activate or deactivate the constant light control function. According to the changing ambient light level, the load will be dimmed brighter or darker automatically to match the Preset setpoint or light intensity setting. Default: Disable	
	Disable	Deactivate the constant light control function.
	Enable	Activate the constant light control function.
<b>Preset setpoint</b>	This parameter is used to set the pre-set lux value for constant light control function and can only be set by the KNX ETS software. Default: 300 lux	
	10 lux – 2000 lux	Use the drop-down list to set the desired pre-set setpoint (in lux) for constant light control.
<b>Lux deviation</b>	This parameter is used to set the deviate value of constant dimming function. The dimming output will react (dim up or down) depending on the deviation of the ambient light level. Default: 10 lux	
	0 – 255 lux	Set the ambient light level deviation for dimming up / down of the dimming output.
<b>Time after switch-on until constant light control starts</b>	This parameter is used to set the time before the execution of the constant light control function starts, after the load is switched on. Default: 1 min	
	1 sec. – 5 min.	Use the drop-down list to set the standby time of constant light control. It is mainly used to set the time of lighting from power on to stable.
<b>Switch ON lux value</b>	This parameter is used to set the desired lux value at which the sensor output must switch on. You can select the value via a drop-down list. Default: 2000 lux	
	5 – 2000, ∞ lux	Use the drop-down list to set the desired Switch on lux value for the concerned light control output (C1 – C2). Infinity: not controlled by lux value.
<b>Lighting delay time</b>	This parameter is used to set the switch-off delay value. You can select the value via a drop-down list. Default: 5 min	
	5 sec – 60 min	Use the drop-down list to set the desired switch-off delay value for the concerned light control output (C1 – C2).

<b>Lighting standby time</b>	When the lighting standby time is set to Enable, the detector is set to standby light control mode after the switch-off delay is elapsed. Selecting Disable will deactivate the standby light control mode, meaning the load will turn off directly when the switch-off delay is elapsed. Default: Disable	
	Disable	Deactivate the standby light function and the load will turn off directly when the switch-off delay is elapsed.
	Enable	Activate the standby light function and detector enters into standby light control mode when the switch-off delay is elapsed.
<b>Standby time</b>	This parameter is used to set the time period during which the standby light control mode will be active after the switch-off delay is elapsed. You can select the value via a drop-down list. Default: 5 min	
	30 sec. – 60 min. , ∞ min	Use the drop-down list to set the desired standby time for the concerned light control output (C1 – C2). Infinity: the standby light control mode will remain activated until a new output command is sent.
<b>Standby brightness</b>	This parameter is used to set the standby brightness level. You can select the value via a drop-down list. Default: 10%	
	1% – 60%	Use the drop-down list to set the desired standby brightness level for the concerned light control output (C1 – C2).

### 3.4. HVAC CONTROL OUTPUT

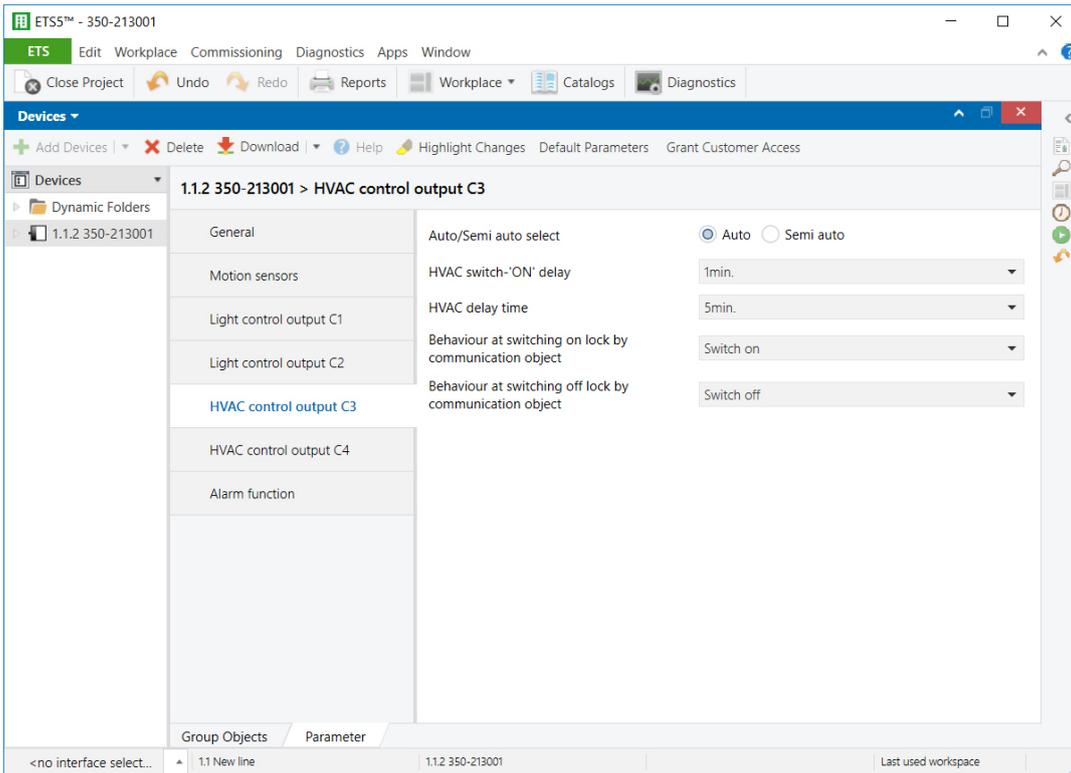


Figure 6: HVAC control output

Parameter	Description	
<b>Auto/Semi auto select</b>	This parameter is used to activate/deactivate the auto-/semi-auto mode of the concerned HVAC control output (C3-C4). Default: Auto	
	Auto	When Auto mode is activated, the load will turn on automatically when movement is detected and the ambient light level is below the lux setting value. When movement is no longer detected and the switch-off delay time has expired, the load will turn off automatically.
	Semi auto	When Semi auto mode is activated, the load can only be switched on manually with the connected external push button. When movement is no longer detected and the switch-off delay time has expired, the load will turn off automatically.
<b>HVAC switch-“ON” delay</b>	This parameter is used to set the desired switch-on delay time of the HVAC control output. When movement is detected, the HVAC control output will be switched on after the configured switch-on delay time. Default: 1 min	
	0 – 30 min	Use the drop-down list to set the desired switch-on delay time for the concerned HVAC control output (C3 – C4).
<b>HVAC delay time</b>	This parameter is used to set the switch-off delay value of the concerned HVAC control output (C3 – C4). You can select the value via a drop-down list. Default: 5 min	
	5 sec – 60 min	Use the drop-down list to set the desired switch-off delay time for the concerned HVAC control output (C3 – C4).
<b>Behaviour at switching on lock by communication object</b>	This parameter is used to set the output status of the detector when it is triggered and switched on. Default: Switch on	
	No reaction	Use the drop-down list to set the operation mode when HVAC is switched on.
	Switch off	
	Switch on	

<b>Behaviour at switching off lock by communication object</b>	It is used to set the output status of detector when it is triggered and switched off. Default: Switch off	
	No reaction	Use the drop-down list to set the operation mode when HVAC is switched off.
	Switch off	
	Switch on	

### 3.5. ALARM FUNCTION

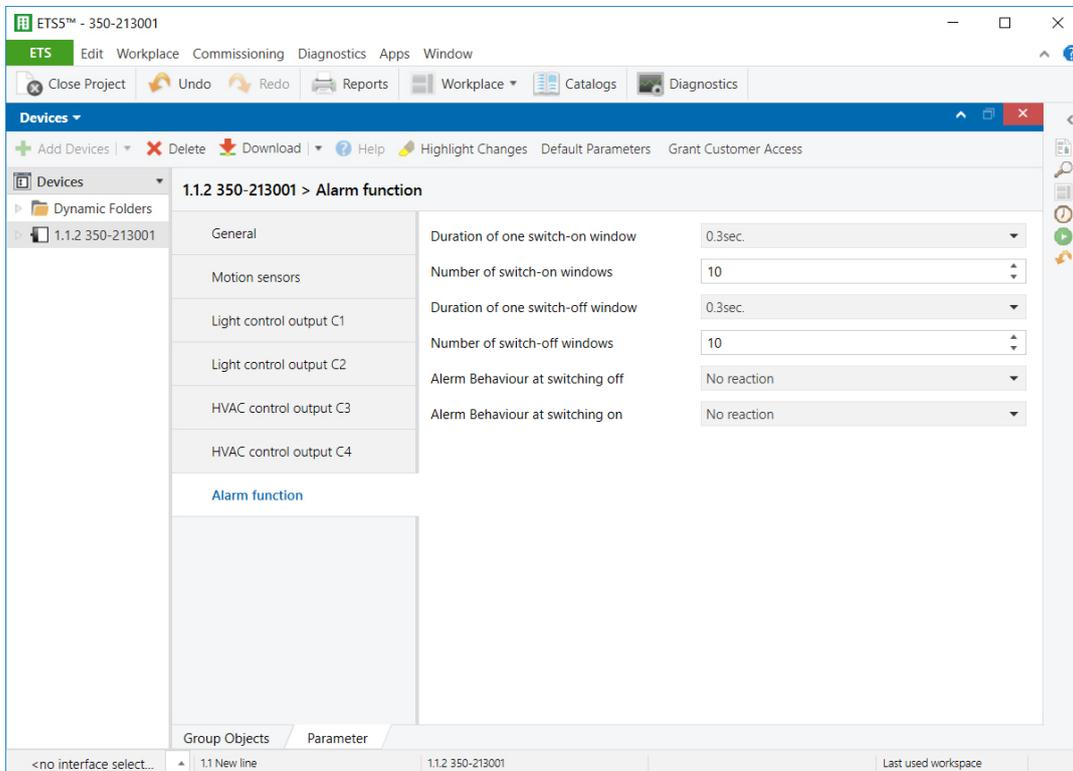


Figure 6: Alarm function

An alarm is triggered if a continuous number of movements are detected within a parameter in a certain time frame. Different time frames can be defined for the switching ON and OFF of an alarm.

The alarm function can be set to react differently or the same at switch ON and switch OFF.

The alarm output (object 18) can be locked using object 17. There are several options for the alarm behaviour at switching lock ON or OFF via object 17: "no reaction", "switch off", "switch on". The number of detected movements within a time frame can be set.

Parameter	Description	
<b>Duration of one switch-on window</b>	This parameter is used to set the time condition for the alarm to be switched on. Default: 0.3 sec	
	0.3 sec – 1 hour	Use the drop-down list to set the time condition for the alarm to be switched on.
<b>Number of switch-on windows</b>	This parameter is used to set the number of times movement must be detected within a certain period to switch on the alarm. Default: 10	
	0 – 100	Use the increase- or decrease arrows to set the number of times movement must be detected within a certain period to switch on the alarm.
<b>Duration of one switch-off window</b>	This parameter is used to set the time condition for the alarm to be switched off. Default: 5 min	
	0.3 sec – 1 hour	Use the drop-down list to set the time condition for the alarm to be switched off.
<b>Number of switch-off windows</b>	This parameter is used to set the number of times movement must be detected within a certain period to switch off the alarm. Default: 10	
	0 – 100	Use the increase- or decrease arrows to set the number of times movement must be detected within a certain period to switch off the alarm.
<b>Alarm behaviour at switching off</b>	This parameter is used to set the alarm behaviour of the detector when it is triggered and switched off. Default: No reaction	
	No reaction	Use the drop-down list to set the time condition for the alarm to be switched off.
	Switch off	
	Switch on	
<b>Alarm behaviour at switching on</b>	This parameter is used to set the alarm behaviour of the detector when it is triggered and switched on. Default: No reaction	
	No reaction	Use the drop-down list to set the alarm behaviour of the detector when it is triggered and switched on.
	Switch off	
	Switch on	