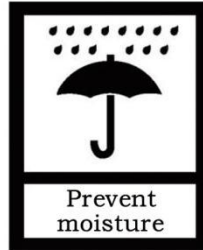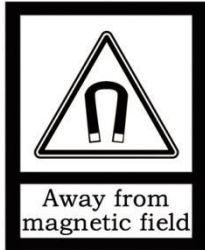# K·BUS KNX Dual Presence Sensor,PIR&Ultrasonic_V1.0

CSBPU-04/00.1.00

KNX/EIB Home and Building Control System

Attentions

1.Please keep devices away from strong magnetic field, high temperature,

   wet environment;

Away from magnetic field	Away from high-temp	Prevent moisture

2.Do not fall the device to the ground or make them get hard impact;

Handle with care

3.Do not use wet cloth or volatile reagent to wipe the device;

Wipe with care

4.Do not disassemble the devices.

Contents

Chapter 1 Summary

The KNX Dual Presence Sensor, PIR&Ultrasonic integrates advanced PIR and Ultrasonic sensor technologies in one unit. The combination of these technologies helps to eliminate false triggering problems even in difficult applications. It is suitable for indoor application which is ideal for using in home, open-plan office, multi-stall public restroom, conference room, under-ground parking lots, classroom, library, etc.The control parameters time, ultrasonic sensor sensitivity, Lux and PIR/US triggering method of KNX Dual Presence Sensor, PIR&Ultrasonic can be adjusted as user desired by ETS to match different application requirements.

Chapter 2 Technical date

Power supply	Bus voltage	24-30V DC，via the KNX bus
	Standby current	30mA
Output	4 Channels	Light control, Constant Light Control, Twilight switch, HVAC
	PIR	360° circular, adjustable up to Φ8m
	US	360°, oval shape of 6*12m with small movement(i.e hand wave); oval shape of 7*13m with large movement(i.e. walk)
	US frequency	32Khz
	Light Measuring	10~2000Lux
Sensitivity	PIR	Φ8m，h=2.5m
	US	Adjustable via ETS in 4 steps Max:3.5*6.5m,h=2.5m High:3.0*5.0m,h=2.5m Med:2.0*4.5m,h=2.5m Low:2.0*3.0m,h=2.5m
	ACC	Adjustable via ETS in 4 steps
	(US sensitivity)	ACC: off(Max.): 0% ACC: less(High): 10%-30% ACC: middle(Medium): 25%-50% ACC: Highest(Low): 30%-60%
Connection	KNX	Bus connection terminals(φ0.8mm)
Installation	86 type wall-mounted box or European 80 type wall-mounted box	
Temperature range	Operation	-5°C ... + 45 °C
	Storage	-25 °C ... +55 °C
	Transport	-25 °C ... +70 °C
Ambient	Humidity	<93%, except condensation

Chapter 3 Dimension and structural diagram

3.1 Dimension diagram
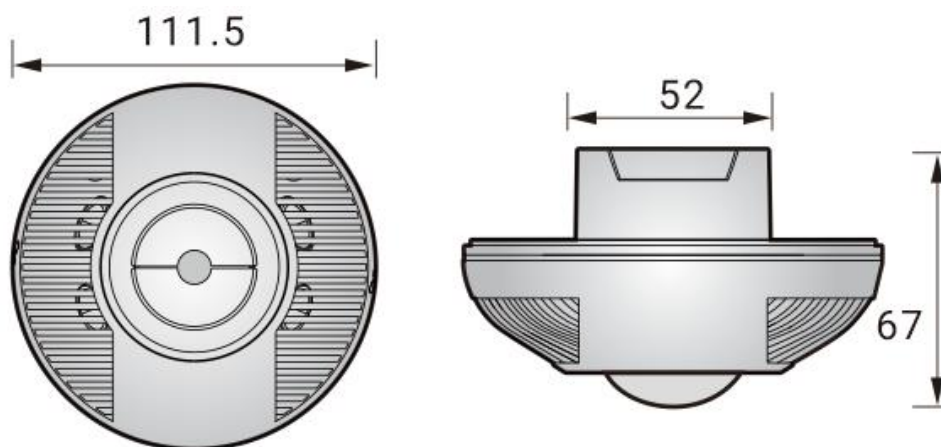
3.2 Structural diagram
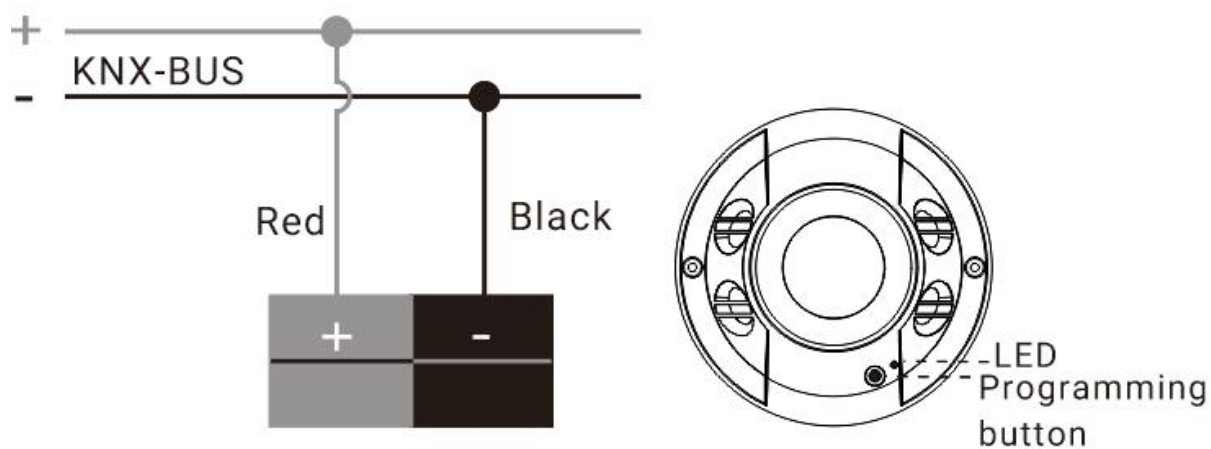
3.3 Installation instructions

1.Pull out cables from junction box, strip off 6~8mm of cable sheathing and connect it correctly according to the wiring instruction. After wiring, fix the power box into junction box then screw them with two screws, as shown in Fig.1.

6 - 8mm
30 - 35mm

Fig.1
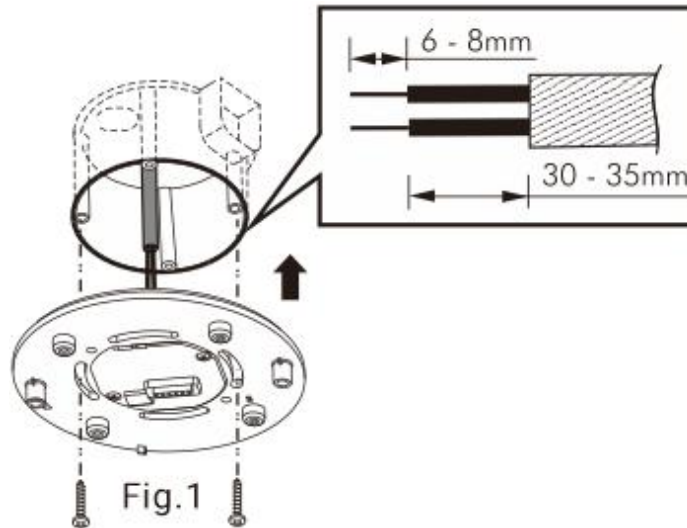
2.Assemble the detector with power box and fix them with two screws. At last, put on the decorative frame and restore the power supply, as shown in Fig.2.

Power box
Detector head
Non-dropping screw
Decorative frame

Fig.2
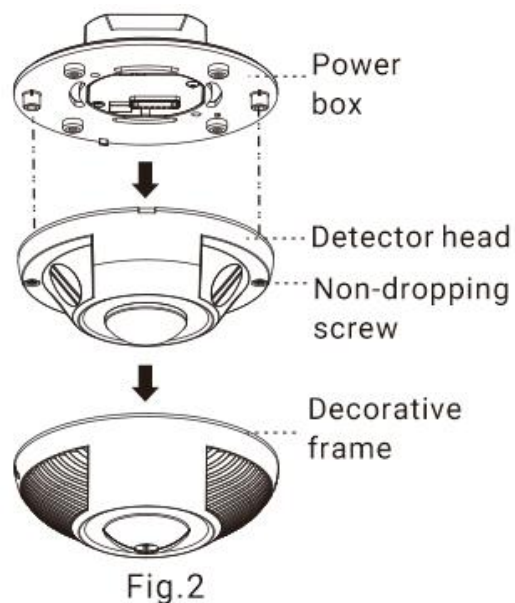
Lens shield instructions：

1.KNX Dual Presence Sensor, PIR&Ultrasonic has provided 2 lens shields for masking the undesired detection area, as shown in Fig.3.

Note: 1.The shadow part of the lens shields in Fig.3 are referring to the cut-off parts.

2.The ultrasonic sensor is unaffected by the lens shield.

Used lens shield   Covered detection range
None   Φ8m
Small segment   30° per piece
A+B/A   Φ2m/Φ4m

Fig.3   30°   Φ2m / Φ4m / Φ8m
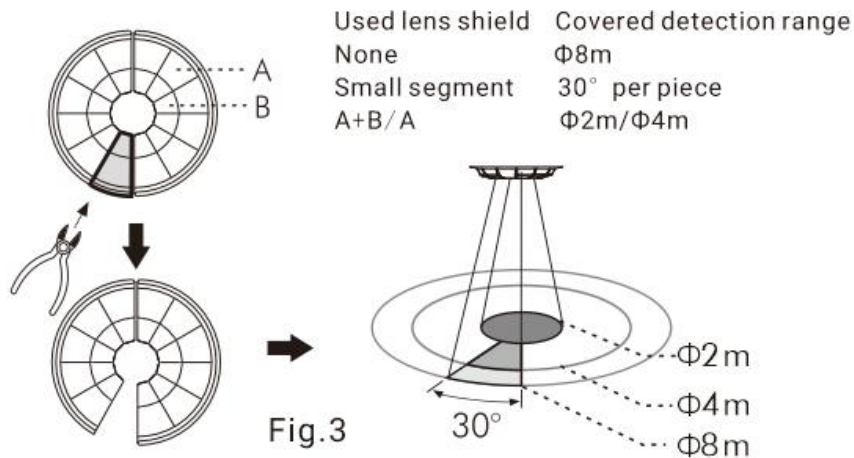
2.Fixing lens shield：By coupling the decorative frame hook into the lens shield groove, the lens shield is fixed, as shown in Fig.4.
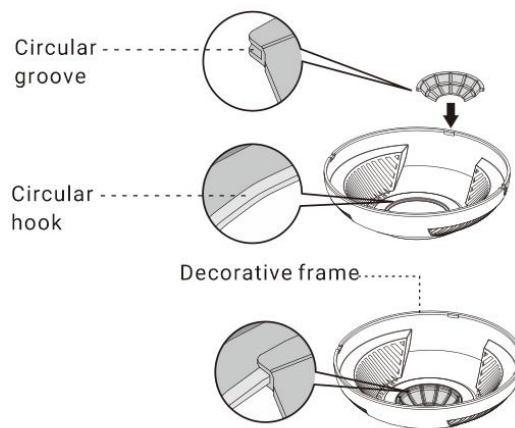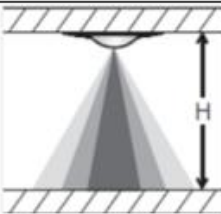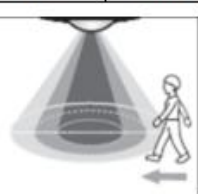
Circular groove
Circular hook
Decorative frame
Fig.4

Note:

1.The direction of KNX Dual Presence Sensor, PIR & Ultrasonic should aim to the main detection area to achieve the best detection coverage.

2.The recommended installation height of KNX Dual Presence Sensor, PIR & Ultrasonic is 2~4m, and 3m is the optimal mounting height, the detection radiation is as above shows:

Height	Walk across		Walk towards		Seated	
	US	PIR	US	PIR	US	PIR
2.0m	13*7m	Φ7m	13*7m	Φ3m	12*4m	Φ4m
2.5m	13*7m	Φ8m	13*7m	Φ3m	12*6m	Φ4m
3.0m	13*7m	Φ9m	13*7m	Φ3m	10*4m	Φ4m
3.5m	13*7m	Φ10m	13*7m	Φ3m	10*4m	Φ2m
4.0m	12*7m	Φ11m	12*7m	Φ3m	None	None

Chapter 4 Trouble shooting

When KNX Dual Presence Sensor, PIR&Ultrasonic works abnormally, check assumptive problems and suggested solutions in following table that will hopefully solve your problem.

Problem	Possible cause	Suggested Solution
Lighting / HVAC device does not turn on	1. Power does not turn on. 2. Incorrect wiring. 3. Incorrect Lux setting. 4. Malfunctioned load. 5. Unable to detect movement.	1. Switch on the power. 2. Refer to wiring diagrams for correct connection. 3. Check if Lux is set to the correct value. 4. Replace the disabled load with a new one. 5. Check detection range setting.
Lighting device does not turn off	1. Auto off delay time is set too long. 2. Detector is nuisance triggered. 3. Incorrect wiring.	1. Set auto off delay time to a shorter time and check if the load is switched off or not according to the preset off delay time. 2. Keep the objects which may cause nuisance triggering away from detection coverage to avoid activating detector while doing the test. 3. Refer to wiring diagrams.
Red LED does not turn on	1. PIR sensor is not chosen as the triggering method	1. Choose PIR sensor as the triggering method.

	2. Exceed the valid detection range.3. Not set to Test mode. 4. LED indicating function is set to "Disable".	2. The movement should be within the valid detection range (Φ 8m). 3. Set to test mode. 4. Set the LED indicating function to "Enable" via ETS software.
Green LED does not turn on	1. Ultrasonic sensor is not chose as the triggering method 2. Exceed the valid detection range.	1. Choose ultrasonic sensor as the triggering method. 2. The movement should be within the valid detection range (7m x 13m).
Nuisance triggering	There are heat sources, airflow, highly reflective objects or any objects which may be swayed in the wind within the detection coverage.	Avoid aiming the detector toward any heat sources, such as air conditioning, electric fans, heaters or any highly reflective surfaces. Make sure there are no swaying objects within the detection coverage.

Chapter 5 Parameter setting description in the ETS

The database of KNX Dual Presence Sensor,PIR&Ultrasonic is designed by ETS5.0, please refer to the following introduction for the interface and the application parameter of function. Detector has four output channels, they are channel A/B/C/D (Light control, Constant Light Control, Twilight switch, HVAC). Please refer to the following description for the detailed information.

5.1 Parameter window "General"

Master

Slave

Fig.5.1 Parameter window "General"

Parameter "Device function"

Master controller for lighting. When used as a Master, it will send "ON" / "OFF" / "Dim" telegrams to the main address of the linked group once a moving object is detected.Slaves are used to extend the detection area and provide only movement / presence information to the Master. When used as a Slave, an "ON" telegram is sent to the main address of the linked group once a moving object is detected.Options:

Master

Slave

This parameter is visible when "Master" and "Individual switching" is no selected.This function is used for setting the interval time for each detector to send a telegram when the device is used as a parallel switch. The interval between two telegrams can be set up to 300s.

Options: **5...300s**

Parameters as follow are visible when "Master" is selected.

Parameter "Master operating mode"

The device can be set as either an individual or a parallel switch for use: When used as a parallel switch, one or more additional detectors can be linked to the Master as a Slave sensor for extending the detection area, or multiple Masters can be linked with each other to control the same device. When used as an individual switch, the detector is regarded as an independent working equipment. Options:

Parallel switching

Individual switching

Master/Slave parallel switching: In the same group, "Master" and "Slave" can be communicated with each other via Object 2, and many "Slave" detectors can be connected in parallel, then connect to one "Master" detector. Slave detector can only be used to provide detecting / presence information in the detection range, and master detector is responsible for ambient light level measurement and manage all the settings of control parameters.

Master / Slave parallel switching
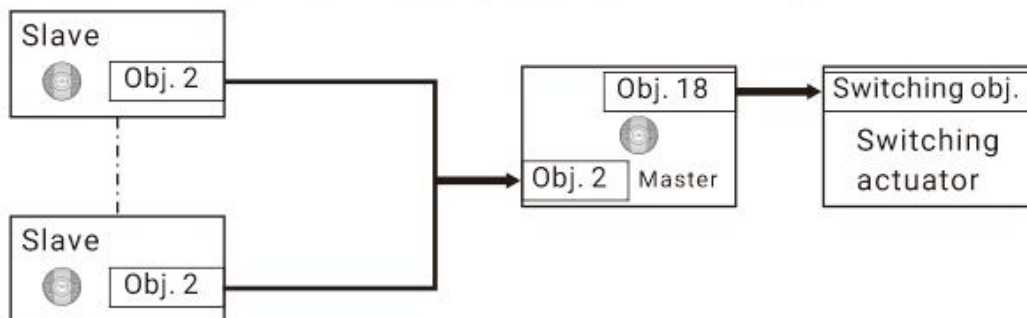
Master/Master parallel switching: Several master detectors can be connected to same switching actuator and each master communicates to others via object 2. Either one detector of them is triggered, the others are triggered simultaneously, and the controlled load of each detector will work according to its own control parameters settings.

Master / Master parallel switching
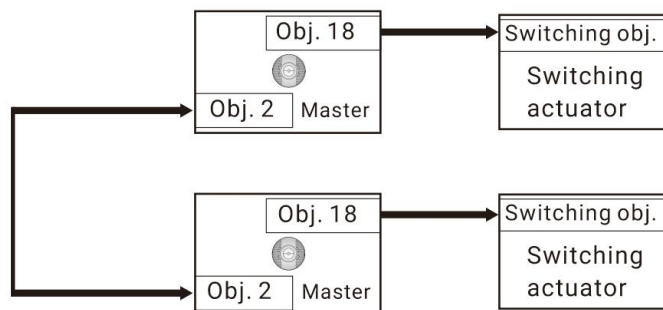
Parameter "Channel A/B/C/D"

It is used to select the functional mode of the Channel. 详细操作见章节 5.4-5.7.Options:

Light Control

Constant Light Control

Twilight Switch

HVAC

5.2 Parameter window "Settings"

Under Test mode, the action of red LED and Test mode output are uncontrolled by Lux setting value, so that when each time detector is activated by movement, they will turn on for 2sec, but an interval time of 2sec is required between two triggers. After timeout, if you want to enter into Test mode again, Please re-enter "1" with object 4 to activate.

Advanced Mode	○ Disable ● Enable
Telegram delay time after warm-up	00:00:00 hh:mm:ss
LED behaviour when motion is detected	● On ○ Off
LED behaviour when motion is not detected	○ On ● Off
LED on lock mode	Blink ▼
Test mode(via object)	● Disable ○ Enable
Trigger Method Selection	UT Only ▼
> Ultrasonic sensor sensitivity (Air current compensation/ACC)	Maximum (ACC: OFF) ▼
> LED behaviour when Ultrasonic trigged	● On ○ Off

Fig.5.2 Parameter window "Settings"

Parameter "Advanced Mode"

It is used to hide infrequently used function menus to simplify the display of ETS menus.Options:

Disable

Enable

——Parameter "Telegram delay time after warm-up"

This parameter is visible when previous parameter is selected "enable". Because after the system is powered on, all detectors connected to the same bus line will start to warm up, and send out an "OFF" telegram at the same time when the warming time is out which may cause telegram lost problem due

to many telegrams. To avoid the telegram lost, it can be done by setting different start delay time for detectors in the same line.

Note: The default value of parameter "Detector behaviour after bus voltage return" is "Do nothing". Detector will send OFF telegrams after warming up period while it is selected as "Switch off". For example, selected parameter "Detector behaviour after bus voltage return" as "Switch off" and "Telegram delay time after warm-up" as "1min", detector will send "OFF" telegrams after 2 minutes and 5 seconds (65 seconds warm up time and 60seconds delay time), during the delay period, red/green LED us still switched on with high illumination, and no telegram is sent out even the detector is triggered by movements.

可选项: **00:00:00-18:12:15 hh:mm:ss**

Parameter "LED behaviour when motion is detected"

Parameter "LED behaviour when motion is not detected"

Since the built-in LED indicator of detector will be detected as a source of interference in some locations, it is optional to be deactivated after programming with ETS.The PIR trigger LED indication function can be enabled or disabled either by the menu setting or by using the "External LED command" communication object.

Options:

ON

OFF

ON : When the PIR sensor is triggered, the red LED inside the product turns on, and if it continues to be triggered, it will continue to be ON.

OFF: When the PIR sensor is triggered, the red LED inside the product keeps be OFF.

Note: This function is invalid in Test mode.

Parameters as follow are visible when "Master" is selected and "Advanced Mode" is enable.

——Parameter "LED on lock mode"

It is used to set the action status of the indicator LED in lock mode. As long as one channel enters lock mode, its LED will perform On / Off / Blink action according to the setting.Options:

On

Off

Blink

——Parameter "Test mode(via object)"

The user can activate the Test mode through object 4. After the set countdown is reached, it will quit the Test mode automatically, and then enters into the Auto / Semi auto mode to set the action according to the option of "Operating mode detector". The output telegram of Test mode can be sent through any object of object 18-19-21, and the sending status is set according to Channel A, that is, only Channel A has test mode.

Options:

Enable

Disable

——Parameter ">Test mode time"

This parameter is visible when previous parameter is selected "enable". This parameter sets test mode time. Options: **60...65535s**

Parameter "Trigger Method Selection"

It is used for selecting the trigger method of detector.Options:

PIR and UT

PIR or UT

PIR only

UT Only

Parameters as follow are visible when "PIR Only" is   no selected.

——Parameter "＞Ultrasonic sensor sensitivity(Air current compensation/ACC)"

Air flow will cause false triggering of the US. In order to reduce the occurrence of false triggering,a dual-technology sensor will air current compensation(ACC) function is designed, which reduces the sensitivity of the US to reduce false triggering, there are 4 levels selectable.Options:

Maximum(ACC :Off)   3.5*6.5m，h=2.5m

High(ACC :Less)   3.0*5.0m，h=2.5m

Medium(ACC :Middle)   2.0*4.5m,h=2.5m

Low(ACC :Highest)   2.0*3.0m，h=2.5m

Maximum(ACC :Off): Detector without airflow compensation.

High(ACC :Less): Sensitivity decreased by about 10%-30%.

Medium(ACC :Middle): Sensitivity decreased by about 25%-50%.

Low(ACC :Highest): Sensitivity decreased by about 30%-60%.

——Parameter "＞LED behaviour when Ultrasonic trigged"

Since the built-in LED indicator of detector will be detected as a source of interference in some locations, it is optional to be deactivated after programming with ETS.The ultrasonic trigger LED indication function can be enabled or disabled either by the menu setting or by using the "External LED command" communication object .This function is invalid in Test.Options:

ON

OFF

ON : When the ultrasonic sensor is triggered, the green LED inside the product turns on, and if it continues to be triggered, it will continue to be ON.

OFF: When the ultrasonic sensor is triggered, the green LED inside the product keeps be OFF.

5.3 Parameter window "Brightness measurement"

Brightness measurement source	⃝ Internal ◉ External
Measured lux value report	Lux report cyclic ▼
> Lux report cyclic	00:00:05 hh:mm:ss
Advanced Mode	⃝ Disable ◉ Enable
Measured desk value(max. brightness)	0 ▲▼

Fig.5.3 Parameter window "Brightness measurement"

Parameter "Brightness measurement source"

When "external" is selected, it enables the Lux value measured by the external device to replace the Lux value measured by the motion detector. The motion detector will follow the Lux value read from obj.8 to work.Options:

Internal

External

Parameter "Measured lux value report"

This function is for user to choose whether sending Lux value report or not and the desired way of sending report. The Lux value report is sent through obj.7 to system according to the desired conditions. Options:

Disable

Lux report when change

Lux report cyclic

Lux report when changed: Set which level the last measured value sent must have changed by before the measured value is to be sent again.

Lux report cyclic: Send the measured value cyclically via bus.

——Parameter "＞Send upon change"

This parameter is visible when "Lux report when change" is selected. It is used to set the reference value of the brightness change value. When the ambient brightness change value is higher or lower than the set value, the detector will report the new ambient brightness value to the bus.Options:

5...2000Lux

——Parameter "＞Lux report cyclic"

This parameter is visible when "Lux report cyclic" is selected.Defines how often to send light level telegrams. It is only possible to send cyclically, immediate transmission would overload the bus.

Options: **00:00:00-18:12:15 hh:mm:ss**

Parameters as follow are visible when "Master" is selected.

——Parameter "Advanced Mode"

It is used to hide infrequently used function menus to simplify the display of ETS menus.Options:
Options:

Disable

Enable

——Parameter "Measured desk value(max.brightness)"

This parameter is visible when previous parameter is selected "enable". When the constant light control uses the brightness of the desktop as the Lux target value, it is needed to enable the Room correction factor program, that is, fill in the desktop Lux value measured by the Lux meter after the light is 100% on in this menu box. If the Lux value filled in is ≤ 49, the automatic calculation of Room

correction factor program will not be started. The Lux value filled in must be larger than 49 before it will be started. After filling in the Lux value and downloading ETS, the Room correction factor process will last for 3 minutes. After that, as long as the value filled in at this location (larger than 49Lux) is detected during ETS downloading and is different from the previous value, the detector will re-execute Room correction factor.Options:**0...2000Lux**

5.4 Parameter window "Channel A/B/C/D-Light Control"

Operating mode	◉ Auto ○ Semi auto
OutputType	Switch ▼
Switch on lux (0=always on)	2000 ⌃⌄ Lux
Delay time	00:05:00 hh:mm:ss
Switch-off Lux	2000 ⌃⌄ Lux
Telegram to send at switch-on	Switch ON ▼
Telegram to send at switch-off	Switch OFF ▼
Object for switch on/off/dim	○ No ◉ Yes
> Pause time	00:00:10 hh:mm:ss
Respond to Master/Slave signals	○ No ◉ Yes
Detector behaviour after bus voltage return	Switch ON ▼
Advanced Mode	○ Disable ◉ Enable
Repeat last command every... (00:00:00=Disable)	00:00:00 hh:mm:ss
Lock mode	○ Disable ◉ Enable
> Lock time(00:00:00 manual unlock)	00:00:00 hh:mm:ss
> Lock object = 1(Lock)	Switch ON ▼
> Lock object = 0(Unlock)	Switch OFF ▼
Central OFF	○ Disable ◉ Enable
> Delay time central off (0 = directly OFF)	00:00:10 hh:mm:ss
Presence simulation	○ Disable ◉ Enable
> Presence simulation OFF	○ Through object ◉ When motion detected

Fig.5.4 Parameter window "Channel A/B/C/D-Light Control"

Parameter "Operating mode"

Users can choose whether the channel will run in semi-automatic or fully automatic mode.

Options:

Auto

Semi auto

Auto mode: In this mode, the lighting switches on and off automatically, according to occupancy and dependent on pre-set Lux value and time settings.

Semi auto mode: Under this mode, the load can only be turned on through the external push button (External Object) connected to the bus, which enhances the energy saving effect. When the load is turned on, if detector continues to receive signals from moving objects, the load will keeps be ON; when it receives the last signal from a moving object, the load will automatically turn off after the delay time expires. After the load is turned on, it can also be turned off at any time through the external switch.

Parameter "Output Type"

This parameter is setting the output type.

Options:

Switch

Dim

Scene

Parameter "Switch-on Lux(0=always on)"

With this parameter, you can set the threshold for detector switching on the load when detects motion and the ambient brightness is below it.

Options: **0...2000Lux**

Parameter "Delay time"

With this parameter, you can configure the delay off time of the light while there is no movement is detected and detector send an OFF signal.

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter "Switch-off Lux"

This parameter is for setting the threshold for switching off the load when the ambient brightness is higher than the set value for 5 minutes.

Options: **10...2000Lux**

Parameter "Telegram to send at switch-on"

This parameter is visible when parameter "Output Type" is selected "Switch".This parameter is used to configure the detector's behaviour when motion is detected.

Options:

Switch ON

Switch OFF

Do nothing

Switch ON: When motion is detected, the detector sends an "ON" telegram to the output object.

Switch OFF: When motion is detected, the detector sends an "OFF" telegram to the output object.

Do nothing: When motion is detected, the detector sends nothing to the output object.

Parameter "Telegram to send at switch-off"

This parameter is visible when parameter "Output Type" is selected "Switch".This parameter defines the output value of the detector when motion is no longer detected.

Options:

Switch ON

Switch OFF

Do nothing

Switch ON: After motion has been detected, the detector sends an "ON" telegram to the output object.

Switch OFF: After motion has been detected, the detector sends an "OFF" telegram to the output object.

Do nothing: After motion has been detected, the detector sends nothing to the output object.

Parameter "Value to send at switch-on"

Parameter "Value to send at switch-off"

This parameter is visible when parameter "Output Type" is selected "Dim".

With this parameter, you can set the brightness value when the light is switched on/off.

Options: **0...100%**

Parameter "Standby mode"

This parameter is visible when parameter "Output Type" is selected "Dim".

In auto mode, when the ambient light level falls below the pre-set Lux value, detector will enter into Standby mode function automatically.

Set "Standby time " to "00:00:00" (∞) under auto mode, detector will enter into Standby mode when the delay off time is expired, and load will change to turn on according to the setting of "Standby brightness". During which, if the movement is detected, load will turn on with the setting illumination (100% or the dimmed illumination) and then turn to the setting illumination of "Standby brightness" if movement is no longer detected and the delay off time has expired. It will be cycled until the ambient light level is higher than the switch off Lux value and lasts for 5min, then turns off and detector resumes to auto mode function.

Set "Standby time" to other values except for "00:00:00" (∞) under auto mode, the actions of

detector are basically same as above mentioned, but the duration is according to the

selected "Standby time" value.

Disable: The standby function is not activated.

Enable: The standby function is activated and the parameters are displayed. It also can be enabled

/ disabled via object "Channel A/B/C/D Standby mode" .

Options:

Disable

Enable

——**Parameter "＞Standby brightness"**

This parameter is visible when parameter "standby mode"is selected "enable". Used to set the

brightness value when in standby mode.Options: **0...100%**

——**Parameter "Standby time"**

This parameter is visible when parameter "standby mode"is selected "enable".　The standby time

causes lighting group to dim to the set standby dimming value instead of switching off, when the time

delay has expired.

Standard value with standby time="∞", the lighting remains permanently on while standby. The

lighting switches off after 5 minutes if the brightness level in the rooms exceeds the "switch-off Lux"

setting value. Without presence, the lighting automatically returns to the standby value if the room

brightness falls below the brightness setpoint value. This guarantees a minimum level of lighting in

darkness.

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter "Scene to send at switch-on"

This parameter is visible when parameter "Output Type" is selected "Scene".

This parameter is used to select which scene to send for the ON state (when presence detected) .

Options: **1...64**

Parameter "Scene to send at switch-off"

This parameter is visible when parameter "Output Type" is selected "Scene".

This parameter is used to select which scene to send for the OFF state (at the end of the time delay).

Options: **1...64**

Parameter "Object for switch on/off/dim"

This parameter is visible when parameter "Operating mode" is selected "Auto".

Options:

No

Yes

——**Parameter "＞Pause time"**

This parameter is visible when previous parameter is selected "Yes". It is used for setting the idle time for switching the load on after it is manually switched off. For example, after inputting"0" for object (Channel A External On/Off) to turn off the load manually, if the "idle time after switch off" is preset to 10 seconds, once motion is detected, load will not be turned on immediately, however, if motion is still detected after 10 seconds, the load will be switched on.The preset time of "idle time after switch off" will not be reset due to detection.

Typical application: Turn off the lights and leave after get off work. If there is a trigger when you leave, the lights will not be turned on immediately, but if there is a trigger when you return because you forgot to take the key after leaving, the lights will be turned on immediately.

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter "Respond to Master/Slave signals"

This parameter is used to set whether the channel responds to the Master / Slave signal.

Options:

No

Yes

Parameter "Detector behaviour after bus voltage return"

It is used to set the output behavior of the detector after the bus voltage failure.

This parameter is visible when parameter "Output Type" is selected "Switch".

Options: **Switch ON/Switch OFF/Do nothing**

This parameter is visible when parameter "Output Type" is selected "Dim".

Options: **Defined dimming/Do nothing**

his parameter is visible when parameter "Output Type" is selected "Scene".

Options:**Defined Scene/Do nothing**

——**Parameter "Defined dimming"**

This parameter is visible when "defined dimming" is selected . It is used to define the output

brightness value of the detector after the bus voltage failure.Options: **0...100%**

——**Parameter ">Defined Scene"**

This parameter is visible when "Defined scene" is selected .It is used for setting the scene number

output by the detector after the bus voltage failure.Options: **1...64**

Parameter "Advanced Mode"

It is used to hide infrequently used function menus to simplify the display of ETS menus.Options:

Disable

Enable

Parameters as follow are visible when "Enable" is selected.

Parameter "Repeat last command every...(00:00:00 = Disable)"

When this parameter is activated, the last status of the channel can be sent cyclically. If the last state of the channel is on, the telegram "1" will be sent until the state is changed. Therefore, the failure or loss of the detector can be monitored at any time.

Options:**00:00:00...18:12:15 hh:mm:ss**

Parameter "Lock mode"

It is used to enable or disable the Lock mode. After enabling it, the status of the Channel can be locked by input "1" through the Lock mode object, which is equivalent to disabling the PIR detection function.Input "0" through the Lock mode object to unlock, which is equivalent to re-enabling the PIR detection function.

Options:

Disable

Enable

Note: Disabling channel A/B/C/D via the corresponding object under lock mode, the presence detector does not send telegrams via output object, even if the evaluation of motion and brightness continues.

Parameters as follow are visible when "Enable" is selected.

——**Parameter "＞Lock time(00:00:00 manual unlock)"**

As a rule, the lock remains in place until it is removed by an unlocking telegram. There is the option to enter a duration for the lock using the parameter "Automatic unlock after lock delay", after which the lock is automatically removed.

Note: If it is set to "00:00:00", the automatic unlock function will be deactivated.

Options: **00:00:00...18:12:15 hh:mm:ss**

——**Parameter "＞Lock object = 1(Lock)"**

This parameter is used to set the behavior that the controlled load needs to maintain when detector is locked.

Options:

Switch ON

Switch OFF

Do nothing

——Parameter "**>Lock object = 0(Unlock)**"

This parameter is used to set the behavior sent by the detector when unlocking.

Options:

Switch ON

Switch OFF

Do nothing

Parameter "Central OFF"

This parameter is used to set whether to enable the central-OFF function.

If a "0" telegram is sent to this object, the detector switches off the light if no motion is detected. Otherwise, the light remains switched on. If, after the light has been switched off by the Central-OFF function, movement is detected and the brightness level is below the threshold, the light is switched back on. If a movement is detected within the delay period, the light remains switched on.

This ensures that lights are only switched off in unoccupied rooms. Typical application: Building administrators turn off the lights at night. Of course, the lights are only turned off when there is no body in the office, not someone is still inside.

When the channel is in Lock mode, the Central-OFF command is not executed.

Options:

Disable

Enable

Disable: Not to respond.

Enable: The channel responds to the Central-OFF command

——Parameter"> Delay time central off(0 = directly OFF)"

This parameter is visible when previous parameter is selected "enable". This menu is used to set the delay time for executing the Central-OFF command

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter "Presence simulation"

In this mode, if the detected ambient brightness value is below 50Lux, there is an On/Dim value telegram will be automatically sent to actuator of lighting load, and within the next 4hrs, the detector will send On (Dim value)/Off telegram to switch randomly on/off the lighting for 10min to 1 hour. After 4hrs, if you want to repeat the Presence Simulation, you have to reset the Lux value to be 100Lux and when the ambient brightness value is below 50Lux, it will again perform same as aforesaid in next 4 hours.

This menu is used to set the enabling / disabling of the Presence simulation function, and use the "Presence simulation" communication object to start / end the mode (1-bit "0" telegram: stop / 1-bit "1" telegram: start). When entering the presence simulation mode, the red LED of detector flashes quickly for 5 seconds, and when exiting the presence simulation mode, the red LED remains on for 5 seconds. The Presence simulation mode is only valid for the channels selected for the Light control and Constant Light Control applications, and invalid for the channels selected for Twilight switch and HVAC applications.

Options:

Disable

Enable

——Parameter"> Presence simulation OFF"

This parameter is visible when previous parameter is selected "enable". It is used to choose the way to end the Presence simulation mode:through object: Enter "1" for Object 5 to manually start the

presence simulation mode, enter "0" to end the presence simulation mode and switch to normal operation mode according to the setting of the operating mode detector menu;When ending the Presence simulation mode, if the load is on, it will remain in the ON state, and the switched off time is equal to NO movement+Delay time.when motion detected: After starting the presence simulation mode for 10 minutes, if a movement is detected, it will automatically end the presence simulation mode and switch to the normal operation mode according to the setting of the operating mode detector menu. The motion detection within 10 minutes after the presence simulation mode is started will not cause the sensor to exit the mode, so as to ensure that people have enough time to leave the detection area.

Options:

Through object

When motion detected

5.5 Parameter window "Channel A/B/C/D-Constant Light Control"

Operating mode	◉ Auto ◯ Semi auto
Lux target value (10 - 2000 lux)	300 ⬍ Lux
Lux deviation	10 ⬍ Lux
Switch-off Lux	2000 ⬍ Lux
Delay time	00:05:00 hh:mm:ss
Value to send at swtich-on	100 ⬍ %
Value to send at swtich-off	0 ⬍ %
Constant light control delay on	00:00:30 hh:mm:ss
> Dimming steps	1.5625% ▼
> Dimming speed	2 ⬍ x100ms
Standby mode	◯ Disable ◉ Enable
> Standby brightness	20 ⬍ %
Standby time	00:05:00 hh:mm:ss
Object for switch on/off/dim	◯ No ◉ Yes
> Pause time	00:00:10 hh:mm:ss
Respond to Master/Slave signals	◯ No ◉ Yes
Detector behaviour after bus voltage return	◉ Defined dimming ◯ Do nothing
> Defined dimming	100 ⬍ %
Advanced Mode	◯ Disable ◉ Enable
Lock mode	◯ Disable ◉ Enable
> Lock time(00:00:00 manual unlock)	00:00:00 hh:mm:ss
> Lock object = 1(Lock)	Switch ON ▼
> Lock object = 0(Unlock)	Switch OFF ▼
Central OFF	◯ Disable ◉ Enable
> Delay time central off (0 = directly OFF)	00:00:10 hh:mm:ss

Fig.5.5 Parameter window "Channel A/B/C/D-Constant Light Control"

Parameter "Operating mode"

Users can choose whether the channel will run in semi-automatic or fully automatic mode.

Options:

Auto

Semi auto

Auto mode: In this mode, the lighting switches on and off automatically, according to occupancy and dependent on pre-set Lux value and time settings.

Semi auto:Under this mode, the load can only be turned on through the external push button (External Object) connected to the bus, which enhances the energy saving effect. When the load is turned on, if detector continues to receive signals from moving objects, the load will keeps be ON; when it receives the last signal from a moving object, the load will automatically turn off after the delay time expires. After the load is turned on, it can also be turned off at any time through the external switch.

Parameter "Lux target value(10-2000lux)"

This parameter is used to set the preset target Lux value of the constant light control function, which can only be preset in ETS.

Options:**10...2000lux**

Parameter "Lux deviation"

It is used to set the deviation value of the constant dimming function, that is, the upper and lower limits of the Lux target value.

Options: **5...255lux**

Parameter "Switch-off Lux"

This parameter is used to set the sensor switch off Lux value. When the ambient brightness value reaches the Lux value set by "switch off Lux" and lasts for 5 minutes, the channel will send an OFF

signal to the bus.

Options: **10...2000lux**

Parameter "Delay time"

With this parameter, you can configure the delay off time of the light while there is no movement is detected and detector send an OFF signal.

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter "Value to send at switch-on"

Parameter "Value to send at switch-off"

It is used to set the brightness value sent by the channel when it is switched on/off.

Options: **0...100%**

Parameter "Constant light control delay on"

This parameter is used to set how long to start to perform constant light control after turning on the load.

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter ">Dimming steps"

It is used to define the changing percentage (amplitude) of each step when dimming.

Options:

50%

25%

12.5%

...

1.5625%

Parameter ">Dimming speed"

It is used to set the sending interval time of Dim telegrams.

Options: **[2...255]*100ms**

This parameter is visible when parameter "Output Type" is selected "Dim".

In auto mode, when the ambient light level falls below the pre-set Lux value, detector will enter into Standby mode function automatically.

Set "Standby time " to "00:00:00" (∞) under auto mode, detector will enter into Standby mode when the delay off time is expired, and load will change to turn on according to the setting of "Standby brightness". During which, if the movement is detected, load will turn on with the setting illumination (100% or the dimmed illumination) and then turn to the setting illumination of "Standby brightness" if movement is no longer detected and the delay off time has expired. It will be cycled until the ambient light level is higher than the switch off Lux value and lasts for 5min, then turns off and detector resumes to auto mode function.

Set "Standby time" to other values except for "00:00:00" (∞) under auto mode, the actions of detector are basically same as above mentioned, but the duration is according to the selected "Standby time" value.

Disable: The standby function is not activated.

Enable: The standby function is activated and the parameters are displayed. It also can be enabled / disabled via object "Channel A/B/C/D Standby mode" .

Options:

Disable

Enable

——Parameter "＞Standby brightness"

This parameter is visible when parameter "standby mode"is selected "enable". Used to set the brightness value when in standby mode.Options: **0...100%**

——Parameter "Standby time"

This parameter is visible when parameter "standby mode"is selected "enable". The standby time causes lighting group to dim to the set standby dimming value instead of switching off, when the time delay has expired.

Standard value with standby time="∞", the lighting remains permanently on while standby. The lighting switches off after 5 minutes if the brightness level in the rooms exceeds the "switch-off Lux" setting value. Without presence, the lighting automatically returns to the standby value if the room brightness falls below the brightness setpoint value. This guarantees a minimum level of lighting in darkness.

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter "Object for switch on/off/dim"

This parameter is visible when parameter "Operating mode" is selected "Auto". In Constant Light Control mode:After manually turning on the load by using the "External On/Off input" object, the sensor will automatically activate the Constant Light Control function;After manually adjusting the load brightness by using the "External dimming level" and "External dimming level" objects, the adjusted state remains until no movement is detected and the pre-set delay off time is expired, the sensor returns to standby mode.

Options:

No

Yes

——Parameter ">Pause time"

This parameter is visible when previous parameter is selected "Yes". It is used for setting the idle time for switching the load on after it is manually switched off. For example, after inputting"0" for object (Channel A External On/Off) to turn off the load manually, if the "idle time after switch off" is preset to 10 seconds, once motion is detected, load will not be turned on immediately, however, if

motion is still detected after 10 seconds, the load will be switched on.The preset time of "idle time after switch off" will not be reset due to detection.

Typical application: Turn off the lights and leave after get off work. If there is a trigger when you leave, the lights will not be turned on immediately, but if there is a trigger when you return because you forgot to take the key after leaving, the lights will be turned on immediately.

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter "Respond to Master/Slave signals"

This parameter is used to set whether the channel responds to the Master / Slave signal.

Options:

No

Yes

Parameter "Detector behaviour after bus voltage return"

This parameter is visible when "Channel A/B/C/D" is selected as "Constant Light Control". It is used to set the behavior output by the detector after a bus voltage failure.

Options:

Defined dimming

Do nothing

——**Parameter "＞Defined dimming"**

This parameter is visible when previous parameter is selected "Defined dimming". This parameter is used to set the brightness value output by the detector after the bus voltage failure.

Options: **0...100%**

Parameter "Advanced Mode"

It is used to hide infrequently used function menus to simplify the display of ETS menus.Options:

Disable

Enable

Parameters as follow are visible when "Enable" is selected.

Parameter "Lock mode"

It is used to enable or disable the Lock mode. After enabling it, the status of the Channel can be locked by input "1" through the Lock mode object, which is equivalent to disabling the PIR detection function.Input "0" through the Lock mode object to unlock, which is equivalent to re-enabling the PIR detection function.

Options:

Disable

Enable

Note: Disabling channel A/B/C/D via the corresponding object under lock mode, the presence detector does not send telegrams via output object, even if the evaluation of motion and brightness continues.

Parameters as follow are visible when "Enable" is selected.

——Parameter "＞Lock time(00:00:00 manual unlock)"

As a rule, the lock remains in place until it is removed by an unlocking telegram. There is the option to enter a duration for the lock using the parameter "Automatic unlock after lock delay", after which the lock is automatically removed.

Note: If it is set to "00:00:00", the automatic unlock function will be deactivated.

Options: **00:00:00...18:12:15 hh:mm:ss**

——Parameter "＞Lock object = 1(Lock)"

This parameter is used to set the behavior that the controlled load needs to maintain when detector is locked.

Options:

Switch ON

Switch OFF

Do nothing

——Parameter "**>Lock object = 0(Unlock)**"

This parameter is used to set the behavior sent by the detector when unlocking.

Options:

Switch ON

Switch OFF

Do nothing

Parameter "Central OFF"

This parameter is used to set whether to enable the central-OFF function.Options:

Disable

Enable

——Parameter "**> Delay time central off(0 = directly OFF)**"

This parameter is visible when previous parameter is selected "enable". This menu is used to set the delay time for executing the Central-OFF command

Options: **00:00:00...18:12:15 hh:mm:ss**

5.6 Parameter window "Channel A/B/C/D-Twilight Switch"

When the Channel output is set as a light control switch, if the ambient light level is continuously lower than the pre-set Lux value for 1 minute, the Twilight switch will turn on the light, and if the ambient light level is higher than the switch off Lux setting value for 1 minute, it will turn off the light again.Therefore, the channel only reacts to brightness and not to motion.

Lux threshold	50 Lux
Operating mode	⦿ Dusk to Dawn mode ◯ Delay time mode
Switch-off Lux	2000 Lux
OutputType	Switch ▾
Telegram to send at switch-on	Switch ON ▾
Telegram to send at switch-off	Switch OFF ▾
Detector behaviour after bus voltage return	Do nothing ▾
Advanced Mode	◯ Disable ⦿ Enable
Repeat last command every... (00:00:00=Disable)	00:00:00 hh:mm:ss
Central OFF	◯ Disable ⦿ Enable
> Delay time central off (0 = directly OFF)	00:00:10 hh:mm:ss

Fig.5.6 Parameter window "Channel A/B/C/D-Twilight Switch"

Parameter "Lux threshold"

Detector will send "ON" telegram when the ambient brightness is lower than the Lux threshold for 1 minute, otherwise, it will keep no reaction.

Options: **0...2000lux**

Parameter "Operating mode"

This parameter is used to select the working mode of light sensor switch.

Options:

Dusk to Dawn mode

Delay time mode

Dusk to Dawn mode: The detector switches the lights on and off automatically according to the changes in the ambient brightness.

Delay time mode: The detector turns on the light automatically according to the preset "Switch on Lux threshold" value, and turns off the light automatically after the preset delay time is expired.

Note: Make sure the product is mounted at the location where its ambient light level can reach the reset Lux value (equals to 1.3 times of pre-set Lux value) during the daytime, otherwise, the next day twilight switch will not conduct the cycle operation to turn on light.

——Parameter "Switch-off Lux"

This parameter is visible when "Dusk to Dawn mode" is selected.

This parameter is for setting the threshold for switching off the load when the ambient brightness is higher than the set value for 1 minute.

Note: This value must be higher than the setting value of Lux threshold, otherwise, the load will be ON/OFF repeatedly.

Options: **10...2000lux**

——Parameter "Time delay of twilight switch"

This parameter is visible when "Delay time mode" is selected.

When the ambient light level is lower than the preset Switch on Lux threshold for 1 minute, the detector will turn on the light automatically, and turn off the light automatically after the pre-set delay off time is reached. It is used for setting the stay-ON time of the light.

Options: **00:00:00...18:12:15**

Parameter "Output Type"

This parameter is setting the output type.

Options:

Switch

Dim

Scene

——Parameter"Telegram to send at switch-on"

——Parameter"Telegram to send at switch-off"

This parameter is visible when "switch" is selected. It is used to set the output data type by

Twilight switch and the sent value.

Options:

Switch ON

Switch OFF

Do nothing

——Parameter"Value to send at switch-on"

——Parameter"Value to send at switch-off"

This parameter is visible when "Dim" is selected. It is used to set the output data type by Twilight

switch and the sent value.

Options: **0...100%**

——Parameter"Scene to send at switch-on"

——Parameter"Scene to send at switch-off"

This parameter is visible when the "Scene" is selected. It is used to set the output data type by

Twilight switch and the sent value.

Options: **1...64**

Parameter "Detector behaviour after bus voltage return"

It is used to set the behavior output by the Twilight switch after a bus voltage failure.

When "Output type" is selected "Switch". Options: **Switch ON/Switch OFF/Do nothing**

When "Output type" is selected "Dim". Options: **Defined dimming/Do nothing**

When "Output type" is selected "Switch".Options: **Defined scene/Do nothing**

——**Parameter"Defined dimming"**

This parameter is visible when "sensor behavior after bus voltage failure" is selected "Defined dimming". It is used to set the brightness value output by the Twilight switch after the bus voltage failure.

Options: **0...100%**

——**Parameter">Defined Scene"**

This parameter is visible when "sensor behavior after bus voltage failure" is selected "Defined scene". It is used to define the output scene number of the detector after the bus voltage failure.

Options: **1...64**

Parameter "Advanced Mode"

It is used to hide infrequently used function menus to simplify the display of ETS menus.Options:

Disable

Enable

Parameters as follow are visible when "Enable" is selected.

Parameter "Repeat last command every…(00:00:00=Disable)"

When this parameter is activated, the last status of the channel can be sent cyclically. If the last state of the channel is on, the telegram "1" will be sent until the state is changed. Therefore, the failure or loss of the detector can be monitored at any time.

Options: **00:00:00...18:12:15 hh:mm:ss**

Parameter "Central OFF"

This parameter is used to set whether to enable the central-OFF function.Options:

Disable

Enable

——Parameter "> Delay time central off(0 = directly OFF)"

This parameter is visible when previous parameter is selected "enable". This menu is used to set the delay time for executing the Central-OFF command

Options: **00:00:00…18:12:15 hh:mm:ss**

5.7 Parameter window "Channel A/B/C/D-HVAC"

Operating mode	◉ Auto ○ Semi auto
Switch-on delay	00:15:00 hh:mm:ss
Delay time	00:05:00 hh:mm:ss
Output type	Switch ▾
Telegram to send at switch-on	Switch ON ▾
Telegram to send at switch-off	Switch OFF ▾
Object for switch on/off/dim	○ No ◉ Yes
> Pause time	00:00:10 hh:mm:ss
Respond to Master/Slave signals	○ No ◉ Yes
Detector behaviour after bus voltage return	Switch ON ▾
Advanced Mode	○ Disable ◉ Enable
Lock mode	○ Disable ◉ Enable
> Lock time(00:00:00 manual unlock)	00:00:00 hh:mm:ss
> Lock object = 1(Lock)	Switch ON ▾
> Lock object = 0(Unlock)	Switch OFF ▾
Repeat last command every... (00:00:00=Disable)	00:00:00 hh:mm:ss
Central OFF	○ Disable ◉ Enable
> Delay time central off (0 = directly OFF)	00:00:10 hh:mm:ss

Fig.5.6 Parameter window "Channel A/B/C/D-HVAC"

Parameter "Operating mode"

It is used to allow the user to choose whether the channel will run in semi-automatic or fully automatic mode.

Options:

Auto

Semi auto

Auto mode: In this mode,the lighting switches on and off automatically, according to occupancy and dependent on pre-set Lux value and time settings.

Semi auto: In this mode, the load needs to be turned on by the external push button (External Object) connected to the bus, which improves the energy saving effect. When the load is turned on, if detector continues to receive signals from moving objects, the load will always be ON; when it receives the last signal from a moving object, the load will turn off automatically after the delay time expires, and it still needs to be turned on manually at the next time. After the load is turned on, it can also be turned off at any time via an external switch.

Parameter "Switch-on delay"

This parameter is used to set the detector to send an ON telegram after detecting the presence of a person for a period of time. For example, when motion is detected, the channel will not be activated immediately, and will only be activated when motion is still detected after the Switch-on delay expires. Example: If the channel is used to control the fans in the classroom, you can set a delay start time of 2 minutes. If the classroom is briefly occupied, the fan will not be switched on, and if motion is detected after 2 minutes later, the fan will be switched on.

Note: If the detector is activated manually by the external object, this parameter is disabled.

Options: **00:00:00...18:12:15**

Parameter "Delay time"

With this parameter, you can configure the delay off time of the light while there is no movement is detected and detector send an OFF signal.

Options: **00:00:00...18:12:15**

Parameter "Output Type"

This parameter is setting the output type.

Options:

> **Switch**
>
> **Value**
>
> **HVAC mode**

——Parameter "Telegram to send at switch-on"

This parameter is visible when parameter "output type" is selected "Switch". It is used to select the signal to be sent to the actuator when the motion is detected.

Options:

> **Switch ON**
>
> **Switch OFF**
>
> **Do nothing**

——Parameter "Telegram to send at switch-off"

⊥ This parameter is visible when parameter "output type" is selected "Switch". It is used for selecting the signal to be sent to actuator when no movement is detected and the pre-set Switch-off delay time has elapsed.

Options:

> **Switch ON**
>
> **Switch OFF**
>
> **Do nothing**

——Parameter "Value to send at switch-on"

This parameter is visible when parameter "output type" is selected "value". It is used for selecting the signal to be sent to the actuator when the motion is detected.

Options: **0...100%**

——Parameter "**Value to send at switch-off**"

This parameter is visible when parameter "output type" is selected "value". It is used for selecting the signal to be sent to the actuator when no movement is detected and the pre-set Switch-off delay time has elapsed.

Options: **0...100%**

——Parameter "**HVAC mode to send at switch-on**"

This parameter is visible when "Output type" is selected "HVAC mode". It is used for selecting the signal to be sent to the actuator when the motion is detected.

Options:

> **Auto**
>
> **Convenience**
>
> **Standby**
>
> **Economy**
>
> **Building Protection**

——Parameter "**HVAC mode send at switch-off**"

This parameter is visible when "Output type" is selected "HVAC mode". It is used for selecting the signal to be sent to the actuator when no movement is detected and the pre-set Switch-off delay time has elapsed.

Options:

> **Auto**
>
> **Convenience**
>
> **Standby**
>
> **Economy**
>
> **Building Protection**

This parameter is visible when "Operating mode" is selected "Auto".

Options:

No

Yes

——**Parameter "">Pause time"**

This parameter is visible when previous parameter is selected "Yes" or "Operating mode" is

selected "Semi auto".It is used for setting the idle time for switching the load on after it is manually

switched off. For example, after inputting "0" for object (Channel A External On/Off) to turn off the load

manually, if the "idle time after switch off" is preset to 7 seconds, once motion is detected, load will not

be turned on immediately, however, if motion is still detected after 7 seconds, the load will be switched

on.The preset time of "idle time after switch off" will not be reset due to detection.Typical application:

Turn off the lights and leave after get off work. If there is a trigger when you leave, the lights will not be

turned on immediately, but if there is a trigger when you return because you forgot to take the key after

leaving, the lights will be turned on

immediately.

Options: **00:00:00...18:12:15 hh:mm:ss**

This parameter is used to set whether the channel responds to the Master / Slave signal.

Options:

No

Yes

It is used for selecting the behavior output by the detector after a bus voltage failure.

When "Output type" is selected "Switch".Options: **Switch ON/Switch OFF/Do nothing**

When "Output type" is selected "Value".Options: **Defined dimming/Do nothing**

When "Output type" is selected "HVAC mode ".Options: **Defined HVAC mode/Do nothing**

——**Parameter "Defined dimming"**

This parameter is visible when "sensor behavior after bus voltage failure" is selected "Value". It is used for defining the brightness value output by the detector after a bus voltage failure.

Options: **0...100%**

——**Parameter "Defined HVAC mode"**

This parameter is visible when "sensor behavior after bus voltage failure" is selected "Defined HVAC mode". It is used for defining the HVAC mode output by the detector after a bus voltage failure.

Options:

Auto

Convenience

Standby

Economy

Building Protection

Parameter "Advanced Mode"

It is used to hide infrequently used function menus to simplify the display of ETS menus.Options:

Disable

Enable

Parameters as follow are visible when "Enable" is selected.

Parameter "Lock mode"

It is used to enable or disable the Lock mode. After enabling it, the status of the Channel can be locked by input "1" through the Lock mode object, which is equivalent to disabling the PIR detection function.Input "0" through the Lock mode object to unlock, which is equivalent to re-enabling the PIR detection function.

Options:

Disable

Enable

Note: Disabling channel A/B/C/D via the corresponding object under lock mode, the presence detector does not send telegrams via output object, even if the evaluation of motion and brightness continues.

Parameters as follow are visible when "Enable" is selected.

——Parameter ">Lock time(00:00:00 manual unlock)"

As a rule, the lock remains in place until it is removed by an unlocking telegram. There is the option to enter a duration for the lock using the parameter "Automatic unlock after lock delay", after which the lock is automatically removed.

Note: If it is set to "00:00:00", the automatic unlock function will be deactivated.

Options: **00:00:00...18:12:15 hh:mm:ss**

——Parameter ">Lock object = 1(Lock)"

This parameter is used to set the behavior that the controlled load needs to maintain when detector is locked.

Options:

Switch ON

Switch OFF

Do nothing

——Parameter ">Lock object = 0(Unlock)"

This parameter is used to set the behavior sent by the detector when unlocking.

Options:

Switch ON

Switch OFF

Do nothing

When this parameter is activated, the last status of the channel can be sent cyclically. If the last state of the channel is on, the telegram "1" will be sent until the state is changed. Therefore, the failure or loss of the detector can be monitored at any time.

Options: **00:00:00...18:12:15 hh:mm:ss**

This parameter is used to set whether to enable the central-OFF function.Options:

Disable

Enable

——**Parameter "> Delay time central off(0 = directly OFF)"**

This parameter is visible when previous parameter is selected "enable". This menu is used to set the delay time for executing the Central-OFF command

Options: **00:00:00...18:12:15 hh:mm:ss**

Chapter 6 Description of communication object

The communication object is the medium to communicate other device on the bus, namely only the communication object can communicate with the bus.

NOTE: "C" in "Flag" column in the below table means enable the communication function of the object; "W" means value of object can be written from the bus; "R" means the value of the object can be read by the other devices; "T" means the object has the transmission function; "U" means the value of the object can be updated.

6.1 Communication object of "General"

	Number ▲	Name	Object Function	Description	Group Addre	Length	C	R	W	T	U	Data Type	Priority
	1	Central-off function	Central command			1bit	C	-	W	-	-	switch	Low
	2	Parallel switching	Master/Slave & Master/Master			1bit	C	R	W	T	U	trigger	Low
	3	External LED command	On/Off			1bit	C	-	W	-	-	switch	Low
	4	Test mode	"1"Enable , "0"Disable			1bit	C	-	W	-	-	switch	Low
	5	Presence simulation	Presence simulation start/stop			1bit	C	-	W	-	-	start/stop	Low
	6	Software version	Send			2 bytes	C	R	W	T	U	DPT version	Low
	7	Measured lux value output	Current light value			2 bytes	C	R	-	T	-	lux (Lux)	Low
	8	External Light sensor input	Lux level			2 bytes	C	-	W	-	-	lux (Lux)	Low

Fig.6.1 Communication object of "General"

NO.	Object Function	Name	Data Type	Flag	DPT
1	**Central command**	**Central-OFF function**	**1bit**	**C,W**	**1.001 switch**
	This object is used for the central-off function. If the detector turns on the light due to the movement, the light can be switched off early by input "0" for the Central object.The central off command can be executed with a delay. During the delay period, the detector will check if motion is still occurring in the room. If movement is detected within the delay time, the Central-OFF function will be terminated.				
2	**Master/slave & Master/Master**	**Parallel switching**	**1bit**	**C,R,W ,T,U**	**1.017 trigger**
	This object is visible when the "Master operating mode" is selected as "Parallel switching" or the				

"Device function" is selected as "Slave". It is used for parallel control of Master and Master, Master and Slave.

3	On/Off	External LED command	1bit	C,W	1.001 switch

This communication object is used to to activate / deactivate the LED indication function.Since the LED integrated in the detector will be considered as a source of interference in some applications, it can be turned off after programming with ETS.

Telegram:

0: switch off

1: switch on

4	"1" Enable, "0" Disable	Test mode	1bit	C,W	1.001 switch

This communication object is used to to activate/deactivate the Test mode.

Enters "1" for the object to activate the Test mode and enters "0" to deactivate the Test mode.

5	Presence simulation start/stop	Presence simulation	1bit	C,W	1.010 start/stop

This object is visible when "Presence simulation" selects "Enable".It is used to started / stopped the presence simulation mode .

Telegram:

1: start the presence simulation mode

0: end the presence simulation mode

6	Send	Software version	2bytes	C,R,W ,T,U	217.001 DPT version

This communication object is used to queried the software version of the KNX Dual Presence Sensor, PIR&Ultrasonic. The format of the queried software version corresponds to data type 217.001.

7	Current light value	Measured lux value output	2bytes	C,R,T	9.004 lux (Lux)

This communication object is used to send the brightness value detected by the Light-sensor in the detector to the bus.

8	Lux level	External Light sensor input	2bytes	C,W	9.004 lux (Lux)

This object is visible when the Brightness measurement source is selected as "external". It is used to set replacing the measured Lux value of the Light-sensor in the detector by the Lux value of the external device.

Table.6.1 Communication object of"General"

6.2 Communication object of "Channel A/B/C/D-Light Control"

9	CH_A Change operat. mode	Auto mode=0, Semi auto mode=1	1 bit	C - W - -	boolean	Low
10	CH_A Change switch on Lux threshold	Set Lux value	2 bytes	C - W - -	lux (Lux)	Low
11	CH_A Change switch-off delay time	Set delay time (sec)	2 bytes	C - W - -	time (s)	Low
15	CH_A External dimming level	Dimming level	1 byte	C - W -	percentage (0..100%)	Low
16	CH_A Standby mode	"1"Enable , "0"Disable	1 bit	C - W -	switch	Low
17	CH_A Lock mode	"1' lock; "0"unlock	1 bit	C - W -	switch	Low
19	CH_A Value output	Value	1 byte	C R - T -	percentage (0..100%)	Low

Fig.6.2 Communication object of"Channel A/B/C/D-Light Control"

NO.	Object Function	Name	Data Type	Flag	DPT
9	Auto mode=0, Semi auto mode=1	CH_A Change Operat. mode	1 bit	C,W	1.002 boolean
This communication object is used to change the detector operation mode. Telegram: 0:fully automatic mode 1:semi-automatic mode					
10	Set Lux value	CH_A Change switch on Lux threshold	2 Bytes	C,W	9.004 lux(Lux)
This communication object is used to receive a new setpoint or switching value.					
11	Set delay time (sec)	CH_A Change switch-off delay time	2 Bytes	C,W	7.005 time(s)
This communication object is used to receive a new switch-off delay time.					
15	Dimming level	CH_A	1 Byte	CW	5.001 percentage(0...100%)

		External dimming level			
This communication object is used to receive a dimming value telegram from an external device.					
16	" 1 " Enable, "0" Disable	CH_A Standby mode	1 bit	C,W	1.001 switch
This communication object is used to deactivated or reactivated standby function. 1=Reactivate the standby mode 0=Deactivate the standby mode					
17	"1' lock; "0" unlock	CH_A Lock mode	1 bit	C,W	1.001 switch
When inputs "1" for the object, it locks the state of CH_A, which is equivalent to disabling the PIR detection function. When "0" is input to unlock the state of CH_A, it is equivalent to enabling the PIR detection function. When the detector is locked, the locked state can be set through the following "Lock object = 1(Lock)" menu, and the unlocked state can be set through "Lock object = 0(Unlock)" when the detector is unlocked.					
19	Value	CH_A Value output	1 byte	C,R,T	5.001 percentage(0...100%)
This communication object is used to send a dimming value telegram to an actuator.					

Table 6.2 Communication object of "Channel A/B/C/D-Light Control"

6.3 Communication object of "Channel A/B/C/D-Constant Light Control"

11	CH_A Change switch-off delay time	Set delay time (sec)	2 bytes	C - W - -	time (s)	Low
13	CH_A External On/Off input	On/Off	1 bit	C - W - -	switch	Low
14	CH_A External dimming steps	Dimming steps	4 bit	C - W - -	dimming control	Low
15	CH_A External dimming level	Dimming level	1 byte	C - W - -	percentage (0..100%)	Low
16	CH_A Standby mode	"1"Enable , "0"Disable	1 bit	C - W - -	switch	Low
17	CH_A Lock mode	"1' lock; "0"unlock	1 bit	C - W - -	switch	Low
19	CH_A Value output	Value	1 byte	C R - T -	percentage (0..100%)	Low
20	CH_A Constant light control	Relative dimming	4 bit	C R - T -	dimming control	Low

Fig.6.3 Communication object of "Channel A/B/C/D-Constant Light Control"

Note: Communication objects 10-19 are similar to the objects in Section 6.2 and are not repeated here.

NO.	Object Function	Name	Data Type	Flag	DPT
13	On/Off	CH_A External On/Off input	1 bit	C,W	1.001 switch
This communication object is used to send on/off signals to the bus. Telegram: 0: off 1: on					
14	Dimming steps	CH_A External dimming steps	4 bit	CW	3.007 dimming control
This communication object is used to receive a dimming steps telegram from an external device.					
20	Relative dimming	CH_A Constant light control	4 bit	CRT	3.007 dimming control
This communication object is used to send a dimming steps telegram to an actuator.					

Table 6.3 Communication object of "Channel A/B/C/D-Constant Light Control"

6.4 Communication object of "Channel A/B/C/D-Twilight Switch"

⬛↯	10	CH_A Change switch on Lux threshold	Set Lux value	2 bytes	C	-	W	-	-	lux (Lux)	Low
⬛↯	11	CH_A Change switch-off delay time	Set delay time (sec)	2 bytes	C	-	W	-	-	time (s)	Low
⬛↯	18	CH_A Switch On/Off output	Switching	1 bit	C	R	-	T	-	switch	Low
⬛↯	19	CH_A Value output	Value	1 byte	C	R	-	T	-	percentage (0..100%)	Low
⬛↯	21	CH_A Scene recall output	Send scene	1 byte	C	R	-	T	-	scene number	Low

Fig.6.4 Communication object of "Channel A/B/C/D-Twilight Switch"

Note: Communication objects 10、11、19 are similar to the objects in Section 6.2 and are not repeated here.

NO.	Object Function	Name	Data Type	Flag	DPT
18	Switching	CH_A Switch On/Off output	1 bit	C,R,T	1.001 switch
	This communication object is used to send an on/off telegram to an actuator when motion is detected.				
21	Send scene	CH_A Scene recall output	1 byte	C,R,T	17.001 scene number
	This communication object is used to when the motion is detected or the set delay off time is reached, the preset scene number will be sent to the actuator.				

Table 6.4 Communication object of "Channel A/B/C/D-Twilight Switch"

6.5 Communication object of "Channel A/B/C/D-HVAC"

9	CH_A Change operat. mode	Auto mode=0, Semi auto mode=1	1 bit	C - W - -	boolean	Low
10	CH_A Change switch on Lux threshold	Set Lux value	2 bytes	C - W - -	lux (Lux)	Low
11	CH_A Change switch-off delay time	Set delay time (sec)	2 bytes	C - W - -	time (s)	Low
12	CH_A Change HVAC swith-on delay time	Set delay time (sec)	2 bytes	C - W - -	time (s)	Low
13	CH_A External On/Off input	On/Off	1 bit	C - W - -	switch	Low
17	CH_A Lock mode	"1' lock; "0"unlock	1 bit	C - W - -	switch	Low
18	CH_A Switch On/Off output	Switching	1 bit	C R - T -	switch	Low
15	CH_A External dimming level	Dimming level	1 byte	C - W - -	percentage (0..100%)	Low
19	CH_A Value output	Value	1 byte	C R - T -	percentage (0..100%)	Low
22	CH_A HVAC mode output	0~4	1 byte	C R - T -	HVAC mode	Low

Fig.6.5 Communication object of "Channel A/B/C/D-HVAC"

Note: Communication objects 9、10、11、13、17、19 are similar to the objects in Section 6.2 , objects 18 are similar to the objects in Section 6.4, and are not repeated here.

NO.	Object Function	Name	Data Type	Flag	DPT
12	Set delay time (sec)	CH_A Change HVAC switch-on delay time	2 bytes	C,W	7.005 time(s)
	This communication object is used to receive a new switch-on delay time.				
22	0~4	CH_A HVAC mode output	1 byte	C,R,T	20.102 HVAC mode
	This communication object is used to set the CH_A HVAC signal output object. Telegram: 0=Auto 1=Comfort 2=Standby 3=Economy 4=Building Protection				

Table 6.5 Communication object of "Channel A/B/C/D-HVAC"