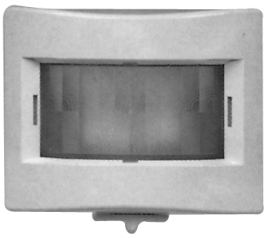
Movement controller comfort, Flush-mounted (Up) 752615xx, 752616xx

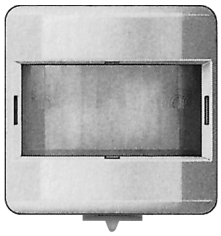
Mounting height 1.1 m and 2.2 m

Order no.:

752615xx

752616xx



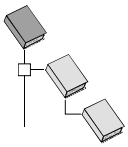


The *instabus* movement controller comfort is designed for internal use and is pushed onto a flush-mounted bus coupling unit (BCU). It reacts to heat movements triggered by persons, animals or objects and sends telegrams to the *instabus* EIB in dependence on the set mode. The operating modes are switching, value transmitter and light scene request, and also the "less sensitive" signalling mode. Here the monitor does not react until the movement signal has been queried several times. A slide switch enables manual mode of the movement controller comfort. The device can be adapted to the local situation by means of three potentiometers.

General technical data

Supply	via BCU (24V; +6V/-4V) from internal supply with 5 V
Protection class	IP 20
Connection:	on BCU 2 x 5-pole user interface

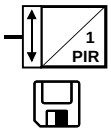
Product management:



Gebr. Berker

Physical sensors

Movement controller



Movement controller comfort
Order no.: 752615xx
752616xx

PIR Comfort A00802

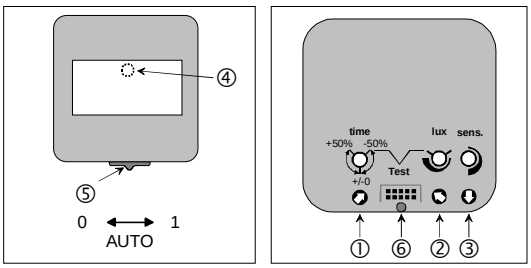
Order data

Design	Colour	Order no. **Installation height: 1.10 m**	Order no. **Installation height: 2.20 m**
Module 2*	**White**	75261**512**	75261**612**
	Polar white	75261**519**	75261**619**
ARSYS*	**White**	75261**542**	75261**642**
	Polar white	75261**549**	75261**649**
	Light bronze, lacquered	75261**544**	75261**644**
	Stainless steel, lacquered	75261**543**	75261**643**
CLIPTEC*	**Polar white**	75261**559**	75261**659**
	Light grey	75261**550**	75261**650**
	Deep black	75261**555**	75261**655**
	Platinum, lacquered	75261**558**	75261**658**
Twinpoint	**Polar white**	75261**569**	75261**669**
	Red	75261**566**	75261**666**
	Black	75261**565**	75261**665**
B1/B3/B7	**Polar white**	75261**589**	75261**689**
	Alu	75261**583**	75261**683**
	Anthracite	75261**585**	75261**685**

Movement controller comfort, Flush-mounted (Up) 752615xx, 752616xx

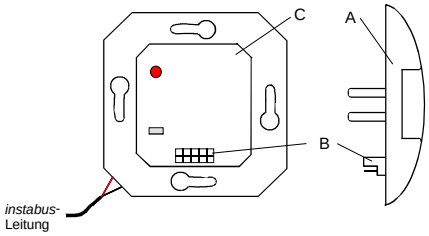
Mounting height 1.1 m and 2.2 m

Illustration of control elements:



1) Changes the default "additional transmission delay" by ± 50 % (this potentiometer has no function in extension mode).
2) Twilight level potentiometer: fine adjustment of the default twilight level.
3) Sensitivity potentiometer for stepless setting of the range between 100 % and 20 %
4) Diagnosis LED for walk test function and dismantling signal slide switch. (The slide switch has no function in message operating mode and in extension mode)
5) Locks the mode switch in the position AUTO

Wiring diagram: **Terminal assignment:**



A: Application module
B: Application interface (AST)
C: Bus coupling unit (BCU)

The application interface (B) of the application module must be underneath, otherwise the appliance will not function correctly.

Comments on the hardware

The optimum range is achieved when the sensor is mounted sideways to the direction of motion. If this is not done, the range will be restricted.

Make sure there is no interference (lamps, heaters, etc.) in the detection field (e.g. fit the adapter cover plates).

Do not align the sensors in the direction of the sun. The sun's heat can damage the sensors irreparably.

On reconnection of power (or after the application module is pushed on) there is an immunity period of approx. 80 seconds before the appliance is ready for operations again. The sensor will not detect any movement in this period.

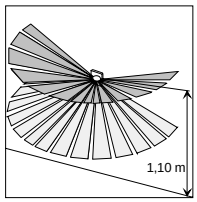
Movement controller comfort, Flush-mounted (Up) 752615xx, 752616xx

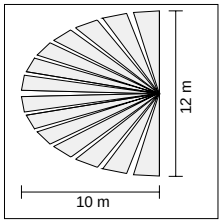
Mounting height 1.1 m and 2.2 m

Technical data			
Protection class:	IP 20		
Insulation voltage:	in accordance with VDE 0829 Part 230		
Test mark:	EIB		
Ambient temperature:	- 5 °C to + 45 °C		
Storage temperature:	- 25 °C to + 70 °C (storage at temp. over 45°C reducers the service life)		
Installation position:	The detection ranges indicated are reached with vertical installation of the FM bus coupling unit and the AST underneath.		
Fastening method:	Push onto BCU		
Supply *instabus* EIB			
Voltage:	24 V DC (+6 V / -4 V) via BCU		
Power consumption:	typ. 110 mW		
Terminal:	2 x 5-pole plug connector		
Behaviour on voltage failure			
Bus voltage only:	Light and signalling mode: no reaction		
Bus and mains voltage:	Light and signalling mode: no reaction		
Behaviour on voltage return:			
Bus voltage only:	Lighting mode:	Software-dependent (80 s immunity time)	
	Signalling mode:	No reaction (80 s immunity time)	
Bus and mains voltage:	Lighting mode:	Software-dependent (80 s immunity time)	
	Signalling mode:	No reaction (80 s immunity time)	
Input			
Adapter lens type:	for 1.10 m installation height		for 2.20 m installation height
Detection angle:	180°		180°
Nominal range, front:	10 m		12 m
Nominal range, side:	2 x 6 m		2 x 6 m
Installation height for nominal range	1.10 m		2.20 m
No. of lenses/lens levels:	18 / 2		18 / 2

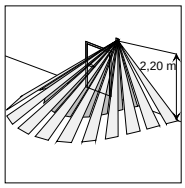
Detection field:

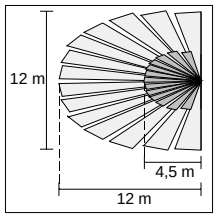
Adapter lens type for 1.10 m:



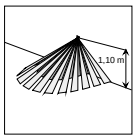


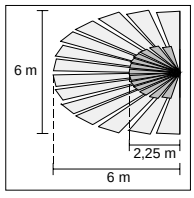
Adapter lens type for 2.20 m:



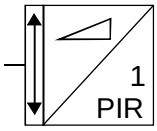


Adapter lens type for 2.20 m at installation height 1.10 m:





The enclosed adapter cover plates can be used to eliminate sources of interference through limiting the detection field. The cover plates can cover the left or right half of the detection field (90° in each case).

Software description	
ETS search path: Physical sensors, movement, movement controller comfort Up	**ETS symbol:** 

AST type	00 Hex	00 Dez	No adapter

Applications:

No.	Short description:	Name:	Version:
1	PIR comfort	A00802	1

Application description:	PIR comfort A00802
Runs from mask version:	1.1
No. of addresses (max):	28
No. of associations (max):	28
Communications objects:	max. 9 (dynamic)

Object		Function	Name	Type	Flag
	0	Switching (status)	Output	1 bit	C W T
	1	Value transmitter	Output	1 byte	C W T
	1	Light scene extension	Output	1 byte	C W T
	2	Locking	Input	1 bit	C W
	3	Recognition depend. on brightness	Twilight level	1 bit	C W T
	4	Motion	Message from extension unit	1 bit	C W T
	4	Motion	Message to master unit	1 bit	C W T
	5	Message	Message	1 bit	C W T
	6	Switch object / message op.	Switch object / message op.	1 bit	C T
	7	Operating mode	Input	1 bit	C W T
	8	Alarm	Output	1 bit	C W T

Extent of function

Detecting heat movements in dependence on the set twilight value
Sending switching, value transmitter or light scene request telegrams after a detected movement
Modes: switching mode (telegram after first movement impulse) and message operating mode (telegram after a configurable number of movement impulses) can be set
Changeover possible between switching mode and message operating mode via the object “Switch object / message op.”
Telegram at beginning and end of a detection or of locking mode can be set
Telegram on bus voltage return can be set
Application types single appliance, master station and extension unit can also be combined with standard monitors
Twilight value can be configured and varied using the twilight value potentiometer (2)
Cyclic transmission possible during detection
Walk test function for comfortable setting of sensitivity with the sensitivity potentiometer (3)
• Dismantling signal when appliance pulled off bus coupling unit is possible

Object description

Object 0: Switching
1 bit object for sending a switch telegram. With main/extension mode (switching) during a detected movement the twilight level is deactivated through a switching object = 1 and activated via a switching object = 0 (exception: twilight level object is set to detection independent of brightness). This ensures that movement can still be detected even if a light is switched on. The switching object is only visible with the modes “Switching mode" and “Message operating mode/switching mode" respectively.

Object 1: Value transmitter
1 byte object for sending a value telegram. With main/extension mode (value transmitter) during a detected movement the twilight level is deactivated by value object = 1-255, and activated by a value object = 0 (exception: twilight level object is set to detection independent of brightness). This ensures that movement can still be detected even if a light is switched on. The switching object is only visible with the modes “Value transmitter mode and "Message operating mode/value transmitter mode" respectively.

Object 1: Light scene extension
1 byte object for sending a light scene extension telegram. The light scene object is only visible with the modes “Light scene recall mode” and “Message operating mode/light scene recall mode” respectively.

Object 2: Locking

1 bit object for switching the locking mode On/Off. The locking object has a higher priority than the sliding switch. The locking object is only visible with the modes "Switching mode" and “Message operating mode/switching mode" respectively.

Object 3: Twilight level

The twilight level object is a 1 bit object for switching between movement detection dependent on brightness and movement detection independent of brightness. The object polarity is fixed and cannot be configured:

Twilight levels object value = 0 ⇨ twilight level in accordance with ETS parameter ”twilight level"
Twilight levels object value = 1 ⇨ movement detection independent of brightness

The twilight level object becomes active when an update for the object is received for the first time after bus voltage return. Up to this time, the value set by the ETS parameter and potentiometer applies for the twilight level (because all object values = 0 after microcontroller reset).

If the twilight level object is ”dependent on brightness” (object value = 0), the value set using the ETS parameter and twilight levels potentiometer applies. In contrast, the twilight level is always switched off when the twilight level object is set to "independent of brightness ” (object value = 1). ⇨ Object twilight level has a higher priority than parameter twilight level.

With main/extension mode with light scenes the twilight level is deactivated during movement detection and reactivated after expiry of the additional transmission delay (exception: twilight level object is set to detection independent of brightness).
The twilight level object is only visible in the modes “Switching mode” and “Message operating mode/switching mode" respectively.

Object 4: Motion (signal to master unit, signal from extension):

1 bit object for communication between master unit and extension unit. If a movement is detected by a master unit (extension), a 1 telegram is sent once (cyclically) through the movement object to inform the extension unit (master station) about the movement. Cyclical transmission ends with the detected movement. The movement object is only visible with the application types "Extension unit" and "Master unit".

Object 5: Message

1 bit object for sending out a signal telegram in message operating mode. The message object is only visible with the modes "Message operating mode" and "Message operating mode/switching mode" respectively.

Object 6: Switching object / message operation

1 bit object for sending out a signal telegram in signalling mode. The switching object/message operating mode is only visible in the modes "Signalling mode" and "Signalling mode/lighting mode" respectively.

Object 7: Operating mode

With this 1 bit object switching between message operating mode and switching mode is possible with the configured modes:

- message operating mode / switching mode
- message operating mode / value transmitter mode
- message operating mode / light scene recall mode.

Before the switchover to the newly set mode the previous mode is brought to its defined basic status with no movement.
If there is still a movement in the switching or message operating mode at the time of the switchover, the previous mode is initially retained, and using the mode object a negative acknowledgement is sent in the form of the object value of the previously set mode. The switchover request is stored by the detector. At the end of the recorded movement, and where applicable after the corresponding telegram is triggered at the end of the detection, the system switches to the new mode. This is done by sending a positive acknowledgement in the form of the object value of the newly set mode through the modes object.

The following applies in addition only where the switchover is from switching mode to message operating mode:
if there is an additional transmission delay at the time of the desired changeover, or if the detector is in locked mode by means of the locking object or through the switch position '0'/'1', first of all the switching/light scene or value telegram configured at the end of detection is sent before the switchover to the new mode.

The following applies in addition only where the switchover is from signalling to lighting mode:
if the detector was locked in switching mode by means of the locking object, the locking mode is reactivated on the transition from message operating mode to switching mode and the telegram that was configured at the begin of locking is triggered as well.
If the detector was locked in switching mode by means of the sliding switch (position '0'/'1') this locking mode is reactivated, and in addition the telegram is triggered that is appropriate to the switch position ('0'/'1') and dependent on the set mode (switching, value transmitter or light scene recall; cf. as well the function "Sliding switch").
If a brightness-independent operation was set through a twilight levels object value = 1, this is reactivated by the twilight level being switched off again.

The operating modes object is only visible with mixed operations (message operating mode/switrching mode).

Object 8: Alarm
1 bit object for transmitting an alarm signal in the form of an ON or OFF telegram.

When used in a lighting system the controller can be used as desired for sending messages on the bus for switching, reporting values or setting lighting levels.

The movement controller comfort can be used as a free-standing device, a master device or a slave device. Several comfort controllers can be installed in a room, to broaden the detection area. This is done by combining a master parameterised device with several slave parameterised devices. For this purpose the movement controller comfort is connected by concealed wiring to standard controllers for slave applications or to comfort intruder detectors as slaves.

The device is fitted with an alarm function which triggers if the bus connection is unplugged.

Application instructions:

- The greatest range is achieved for movements laterally across the detection field. For movements directly towards the controller the range is lessened and the triggering of movement detection is delayed.
- Do not install the controller directly adjacent to a source of heat, e.g. a lamp. The light bulb as it cools down after switching off can be interpreted by the PIR sensor as a change in temperature and trigger a repetition of the movement detection (if necessary, limit the detection area using a clip-on shield). Do not install close to fans, heaters or ventilation shafts. Movements of air (e.g. even through open windows) can be detected and trigger the switch. Select a suitable installation position. Fit the controller where it will not be subject to vibration, since sensor movement can also trigger the switch.
- The detection field should not be obstructed by furniture, pillars etc..
- To avoid undesirable effects due to external lighting, the controller should be mounted facing away from windows. Do not install the controller facing the sun. The high input of heat energy can damage the PIR sensor.
- When power is restored (e.g. after adding an application module), a immunity period of approx. 80 seconds must elapse before the device is ready to operate again. During this time the sensor will not detect any movements. The parameterised message reporting restoration of the bus power is however sent immediately.

Functional Description

Walk-past test

The walk-past test is for setting the sensitivity and checking the movement detection of the controller during commissioning. It is not an operating mode which should be activated once commissioning has been completed.

Features of an activated walk-past test:

- If a movement (movement impulse) is detected, the red LED behind the lens will come on. At the end of the movement impulse the LED will be switched off again. These responses disregard delay periods.
- With the exception of the disassembly message on unplugging an application module, no messages are transmitted on the bus.
- The movement detection is at all times independent of brightness.
- During the walk-past test application each master device and slave device operates as a free-standing device.
- The 80 second immunity period after restoration of the application module is disregarded whilst the walk-past test is activated, contrary to normal operation.
- The parameter “Behaviour on restoration of bus power” and the blocking function are not evaluated.
- No changeover of operating mode can be made during the walk-past test.

Activating the walk-past test:

The walk-past test function is activated after unplugging then plugging in the application module, or after a bus reset, if:

b) The ETS parameter “walk-past test can be activated” is set to “YES” and
c) the potentiometer for twilight level is set to maximum and
d) the potentiometer for additional transmission delay is set to “-50%” (zero).

Deactivating the walk-past tests:

The walk-past test function is permanently deactivated after unplugging then plugging in the application module, or after a bus reset, if:

1. the ETS parameter “walk-past test can be activated” is set to “NO” or
   e) the potentiometer for twilight level not set to the maximum or
   f) the potentiometer for additional transmission delay is not set to “-50%” (zero).

After completing commissioning of the controller it is recommended that the parameter “walk-past test can be activated” is set to “NO”, so that no subsequent changes to the potentiometer settings or plugging the application module in can inadvertently result in activation of the walk-past test.

Unplugging detection/alarm (disassembly) message

If the application module is unplugged from the bus link a message in the form of an ON or OFF message or a value message will be triggered by the alarm object. Alternatively this message trigger can be suppressed by means of the ETS parameter setting “Alarm function blocked” (default).

The time from unplugging the module until triggering the message can be set using the ETS parameters “time factor” and “time basis”. So as to exclude contact bounce effects, the set period should not be set to less than 1 second.

Data format: 1 bit

a) Automatic resetting on sabotage message = YES (default)

When an application module is plugged in again for the first time after programming by the ETS the object value of the alarm object will be given an inverted alarm value (no alarm active) and the alarm function will be enabled. During the period that no application module has been plugged in after programming, this condition can be detected on interrogating the object value, since in this case the alarm object value is loaded with the alarm value (alarm active).

On unplugging the application module after the transmission delay has elapsed, an alarm message will be sent with the parameterised alarm value (alarm active).

If bus power is lost and restored again no further alarm message will be sent.

After the application module is plugged back in again an inverted alarm message (no alarm active) will be sent and the device enabled (device is functionally capable).

b) Automatic resetting on sabotage message = NO

The first time an application module is plugged in again after programming by the ETS the object value of the alarm object will be given an inverted alarm value (no alarm active) and the alarm function will be enabled. During the period that no application module has been plugged in after programming, this condition can be detected on interrogating the object value, since in this case the alarm object value is loaded with the alarm value (alarm active).

On unplugging the application module after the transmission delay has elapsed, an alarm message will be sent with the parameterised alarm value (alarm active).

If bus power is lost and restored again no further alarm message will be sent.

After the application module is plugged back in again an inverted alarm message the device is blocked (device is not functionally capable). In this condition the red LED behind the lens flashes with a frequency of approx. 2 Hz (providing the parameter “Status LED always off?” is set to “NO”!).

Only on receipt of the inverted alarm value (enable message) is the device re-enabled.

On receipt of the enable message the application module must be plugged in. If the application module is not plugged in, the enable will not occur and the object value will remain set to the alarm value (alarm active).

A blocking function or an operating mode changeover cannot be performed when an alarm function is active!

Data format: 1 byte

a) Automatic resetting on sabotage message = YES (default)

The first time an application module is plugged in again after programming by the ETS the object value of the alarm object will be given the value = 0 (no alarm active) and the alarm function will be enabled. During the period that no application module has been plugged in after programming, this condition can be detected on interrogating the object value, since in this case the alarm object value is loaded with the alarm value (1 ... 255 = alarm active).

On unplugging the application module after the transmission delay has elapsed, an alarm message will be sent with the parameterised alarm value (1 ... 255 = alarm active).

If bus power is lost and restored again no further alarm message will be sent.

After the application module is plugged back in again a message with the value = 0 (no alarm active) will be sent by the alarm object and the device enabled (device is functionally capable).

b) Automatic resetting on sabotage message = NO

The first time an application module is plugged in again after programming by the ETS the object value of the alarm object will be given the value = 0 (no alarm active) and the alarm function will be enabled. During the period that no application module has been plugged in after programming, this condition can be detected on interrogating the object value, since in this case the alarm object value is loaded with the alarm value (1 ... 255 = alarm active).

On unplugging the application module after the transmission delay has elapsed, an alarm message will be sent with the parameterised alarm value (1 ... 255 = alarm active).

If bus power is lost and restored again no further alarm message will be sent.

After the application module is plugged back in again an inverted alarm message the device is blocked (device is not functionally capable). In this condition the red LED behind the lens flashes with a frequency of approx. 2 Hz (providing the parameter “Status LED always off?” is set to “NO”!).

Only on receipt of the inverted alarm value (enable message) is the device re-enabled.

On receipt of the enable message the application module must be plugged in. If the application module is not plugged in, the enable will not occur and the object value will remain set to the alarm value (alarm active).

A blocking function or an operating mode changeover cannot be performed when an alarm function is active!

Function of the sliding switch

When in switching operating mode the following detailed functions will be carried out for the respective sliding switch settings, depending on the operating mode setting:

	New switch position '1'	New switch position '0'	New switch position 'AUTO'
Switching	ON message Controller is interlocked	OFF message Controller is interlocked	no message Controller in automatic operation
Value transmitter	Value message (255) Controller is interlocked	Value message (0) Controller is interlocked	no message Controller in automatic operation
Light scene	Scene 2 (sent value 1) Controller is interlocked	Scene 1 (sent value 0) Controller is interlocked	no telegram Controller in automatic operation

The sliding switch function can be parameterised in the ETS. This allows all the switch positions listed in the table to be either activated or individually deactivated.

A switch position parameterised as “--- ” means no response / the previously activated conditions remain in force.

Notes:

- The sliding switch is only effective in switching operating mode, and requires also that the blocking function (object 2) is inactive. When a blocking function is cleared in switching mode, and on triggering the “end of blocking” parameterised message, the switch position ('0' / '1') is re-evaluated. For this purpose the respective message for the current switch position ('0' / '1') under the prevailing operating mode (switching, value transmission or setting lighting levels) will be transmitted additionally.
- After restoration of bus power / after a bus reset (but not after plugging the application module back in again!) there is the option of outputting a message regarding the object “0” or “1”, so as to create clearly defined conditions. If a message after restoration of bus power is parameterised, the position of the sliding switch is irrelevant! In all cases the parameterised message will be transmitted. If however the parameter “message at restoration of bus power” is set to “no message”, the position ('1' / '0') of the sliding switch will be evaluated and a message corresponding to the switch position (see above table) will be transmitted on the bus.
- The sliding switch is inoperative if the device is configured as a slave or is set to message operating mode (controller exclusively in automatic mode)!

Blocking function

A blocking object (object 2, polarity can be parameterised) can be used to block the controller. Whilst a blocking function is active the controller will not respond to movements.

At the start and end of the blocking a message can be sent depending on the parameterised function (switching, value transmission, setting light scene levels). After the controller has been unblocked and the “message at end of blocking” sent, normal operation will be resumed, i.e. movements will again be evaluated and where necessary movement messages from the slaves processed.

Notes:

- Movement messages from slaves will be rejected by the master if blocking is activated. Where necessary all slaves should be blocked in common with the master (linked blocking objects).

- Blocking object updating (“1” after “1” /. “0” after “0”) in switching operating mode will have the effect every time of causing the transmission once again of the parameterised blocking message at the start or end of the blocking. Updates of “0” after “0” do not interrupt any movement evaluations that are in progress.
- A blocking initiated through the object 2 has a higher priority than the issuing of a value by the sliding switch. When a blocking function is cleared in switching operating mode, and on triggering the “end of blocking” parameterised message, the switch position ('0' / '1') is re-evaluated. For this purpose the respective message for the current switch position ('0' / '1') under the prevailing operating mode (switching, value transmission or setting light scene levels) will be transmitted additionally.
- The blocking function is unavailable during a message operating mode (see operating mode changeover)!
- All blocking functions are deactivated on restoration of bus power!

Modes

The movement controller comfort admits 2 operating modes:

- Switching operating mode and
- Message operating mode.

During parameterisation of the device in the ETS the executable operating modes (single operating mode or mixed operating mode) will be set. Under mixed operating mode it is possible by means of a changeover object to change the operating mode whilst operating (see operating mode changeover).

In switching operating mode the controller, depending on its parameterisation, can transmit switching, value transmission or light scene setting messages on the bus. This allows different messages to be sent at the start and at the end of a movement detection. In this operating mode delay times can be set for the “message at the end of detection”. Movements evaluation can be brightness-dependent. A combination of several controllers can be arranged using a master and several slaves.

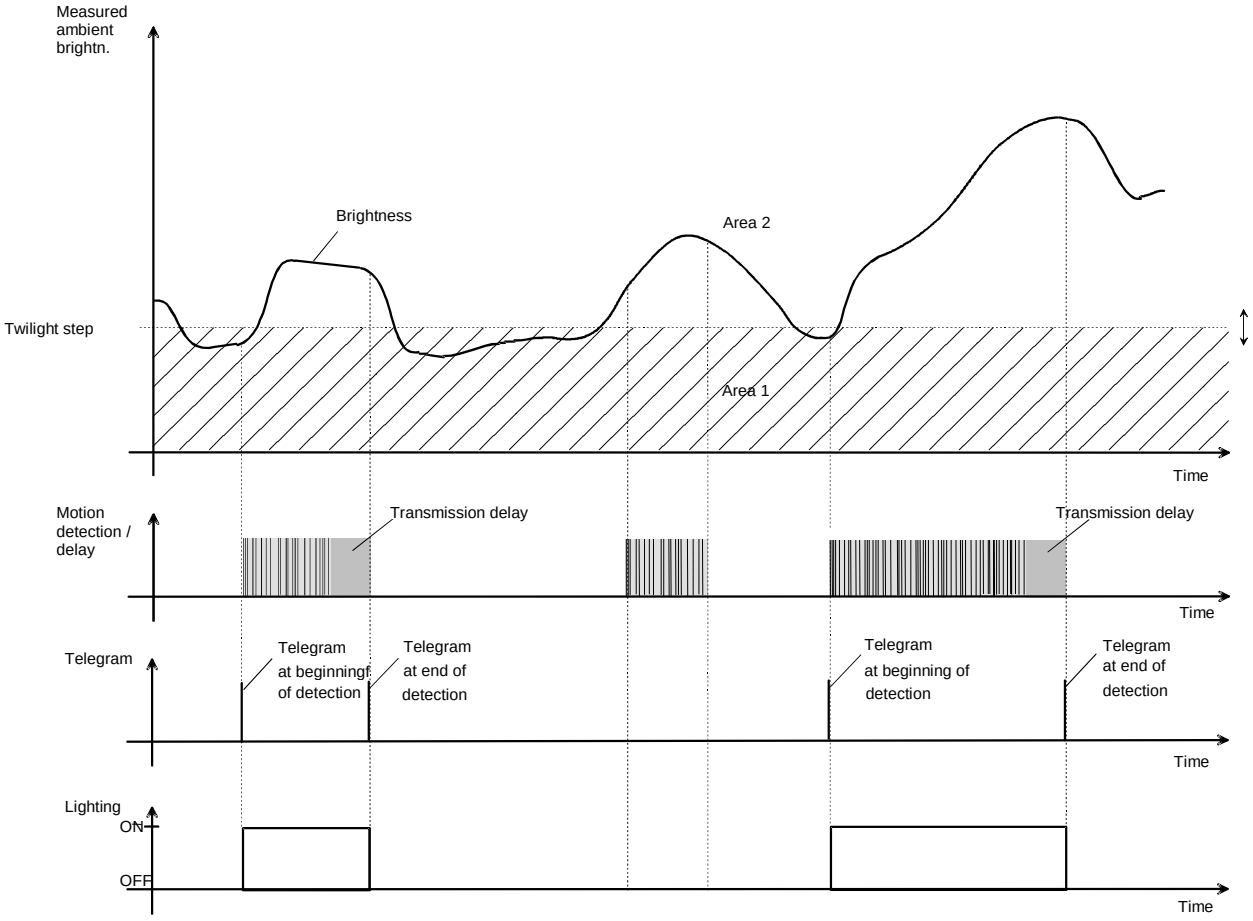
In message operating mode the device responds “insensibly” to detected movements, since only after multiple enquiries of the movement signals is a report message sent regarding the separate report object.

The criterion for the triggering a report message is the can be parameterised total X of movement impulses occurring within a selectable monitoring period. Brightness evaluation in message operating mode is always performed brightness-independently. The PIR sensor operates as in switching operating mode, i.e. the sensitivity is adjustable. In message operating mode there is no longer any assignment as master or slave, each device operates separately and sends a message to the exchange as necessary after detection and evaluation of a movement, based on the report object.

Operating mode “Switching operating mode”

In “switching operating mode” the device detects movements and sends the parameterised message for the start of a detection (free-standing device / master) and / or the movement message (master / slave), if the measured brightness value is less than the set sunset level. In master operation the brightness evaluation is performed in the master as well as in the slave. This means that a movement detection at the master or the slave will always control the load / the lighting depending on the twilight level in the controller. This is the case even if the ambient brightness at the master is not less than the twilight level set for it.

If the message to start a detection is transmitted, the device operates irrespective of the ambient brightness. If no further movement is detected, and the total transmission delay (standard delay (10 s) + additional transmission delay) has elapsed, the device sends the set parameterised message for the end of detection. Irrespective of detection of a movement, the light can be switched on or off on restoration of bus power or by moving the sliding switch, even if the controller is blocked.



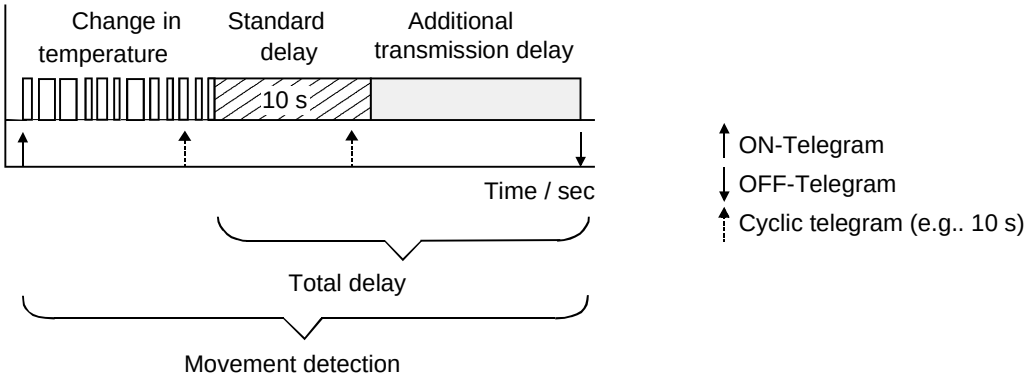
The brightness boundary between area 1 and area 2 is determined by the sunset level, which can be adjusted by sending parameters and if necessary by the twilight level potentiometer. If the measured ambient brightness is less than this value and a movement is detected, the controller switches the artificial lighting on. Range 2 characterizes the brightness in the room at which the room is sufficiently brightly lit and thus needs no further artificial light switching on. If the ambient brightness is in this range and the device detects a movement, no additional artificial light will be switched on.

The potentiometer 'sensitivity' can be used to determine how strong the evaluated movement impulse must be in order for a movement to be detected. This allows spurious reports to be prevented by reducing the sensitivity of the PIR-sensor and thus the detection range.

If the twilight level is parameterised to “brightness-independent”, on detection of a movement the artificial light will always be switched on, without reference to the ambient brightness.

Movement detection in switching operating mode

By a movement is meant the period from the start of the first detection impulse plus the standard delay (10 s) which starts with the last leading edge of a change in temperature, plus the additional transmission delay.



Messages can be sent for the start and the end of a movement detection. During a movement detection the controller is always in brightness-independent mode, i.e. it will trigger the start of the total delay count-down at each new movement detection, irrespective of the ambient brightness.

If a follow-up triggering occurs during the additional transmission delay, depending on the parameter “Telegram transmission in case of triggering” in addition the message to start detection (in master mode a movement message also) will be transmitted on the bus (e.g. useful for follow-up triggering of timer functions in actuators). In addition to the message or as an alternative to it, at follow-up triggering the message for the start of detection can also be output cyclically. It should be noted that during the additional transmission delay no cyclical transmission is performed! At each follow-up triggering during the additional transmission delay the cycle time counter is however restarted. In master mode the movement message is not cyclically output.

Only if after the end of a detection an OFF message is sent by output object or a value message “0” is transmitted will the output start the interlock time and change to brightness-dependent operation, providing the twilight level is not set to brightness-independent.

If at the end of a detection neither an OFF message nor a value message “0” is sent, the output after a movement detection will remain in brightness-independent mode. In this state changes in temperature will be evaluated and if a movement is detected, a new movement detection will be started. In this case after the end of a detection on the output objects an OFF message or a value message “0” must be sent externally, so that the controller can be reset to brightness-dependent mode (e.g. by a revertive signal message from the actuators that are controlled).

External messages on the output object during an active movement evaluation do not affect the brightness control in the controller.

It should be noted that at the end of a detection the output always operates through a message setting lighting levels in brightness-dependent mode, if the twilight level is not set to brightness-independent! Thereafter particular care should be taken, since no further movement detection will occur if the ambient brightness after setting lighting levels is sustained above the twilight level.

On the other hand, it can lead to unwanted movement detections if the lighting level called up and the daylight-dependent ambient brightness are both less than the twilight level!

Even after restoration of bus power and during / after a blocking operation an output may be sent, depending on the messages to be sent in brightness-independent operation!

Operating mode “Message operating mode”

In message operating mode the device responds 'insensibly' to detected movements, since only after multiple enquiries of the movement signals is a report message sent regarding the separate report object.

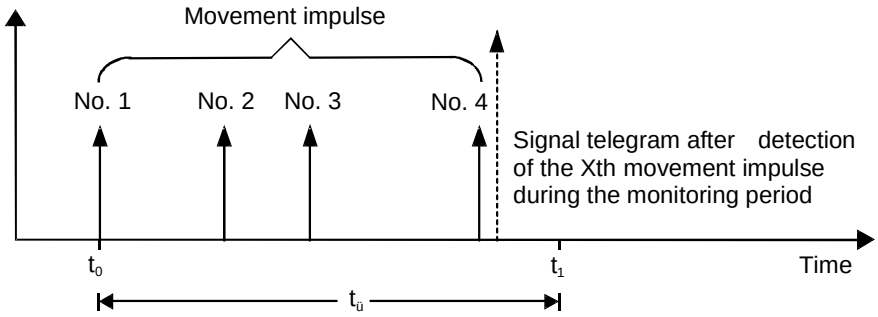
The criterion for the triggering a report message is the can be parameterised total X of movement impulses occurring within a selectable monitoring period. This means that at the start or at the end of a detection (of an identified movement) a report message will be output. The brightness evaluation in message operating mode is always performed brightness-independently. The PIR sensor operates as in switching operating mode, i.e. the sensitivity can be adjusted.

Note:

- In message operating mode there is no longer any assignment as master or slave, each device operates separately and sends a message to the exchange as necessary after detection and evaluation of a movement, based on the report object. In message operating mode the slave inputs and outputs are deactivated!

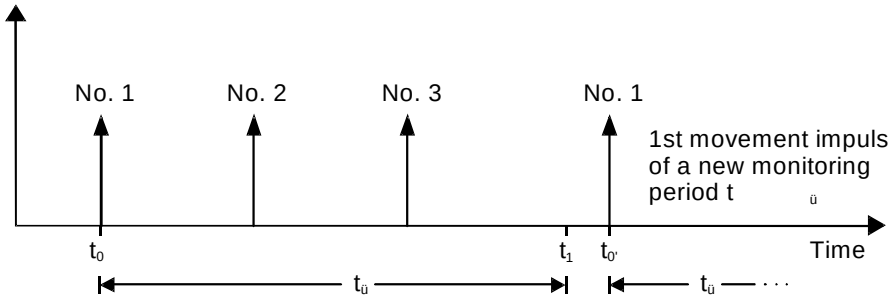
The following illustrations make clear the behaviour of the device under message operating mode and with X = 4 in the ETS parameterised number of movement impulses.

Case 1: x = 4 movement impulses are detected during the monitoring period $t_ü$.



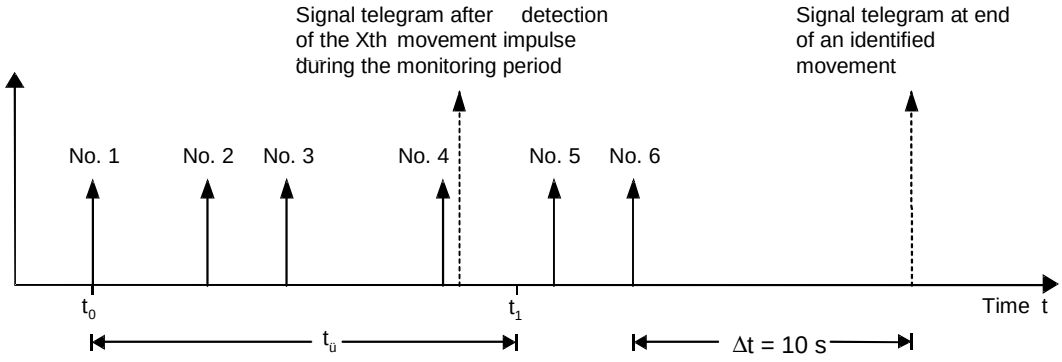
⇨ After detecting the 4th movement impulse (x = X) within the monitoring period $t_ü$, a "report message after detecting the Xth movement impulse" is sent in accordance with the parameterisation.

Case 2: x = 3 movement impulses are detected during the monitoring period $t_ü$.



⇨ In the first monitoring period only 3 movement impulses (x < X) were detected. It follows that no report message is triggered. After $t_{ü\ has\ elapsed}$ the next movement impulse will be the first of a new monitoring period $t_ü$.

Case 3: Report message at the end of a detection.



⇨ After detecting the 4th movement impulse (x = X) within the monitoring period $t_ü$, a "report message after detecting the Xth movement impulse" is sent in accordance with the parameterisation. At the end of the detection (the identified movement) the parameterised "report message at the end of an identified movement" will be output. A detection is regarded as ended if within 10 seconds after the "report message after detecting of the Xth movement impulse" no further movement impulses are detected, or if within 10 seconds after the last movement signal no further movement impulses are detected.

In addition to the report object a separate switch object can be activated in message operating mode, which optionally can send the value of the report message to this switch object (e.g. to a siren in a small system).

This additional switch object (object 6 “switch object / message operating mode”) is always active if message operating mode is parameterised and the object has been correctly linked in the ETS with a group address.

In message operating mode the following functions are fixed:

- twilight level:	brightness-independent,
- potentiometer twilight level:	blocked,
- cyclical sending during a detection:	inactive,
- message triggering if triggering repeated:	inoperative,
- additional transmission delay at end of a detection:	0 s,
- potentiometer 'additional transmission delay':	blocked,
- interlocking time at end of a detection:	0 s,
- blocking function:	inactive,
- sliding switch:	inactive
(automatic operation),	
- message on restoration of bus power:	no message (only if operating mode = message operating mode),
- slave inputs / outputs:	deactivated.

Message operating mode can be the sole operating mode or it can also run as a mixed operating mode together with switching operating mode. In the latter case the changeover between the two operating modes is by means of the operating modes object
(object 7). See the following page for a more detailed description of the operating mode changeover.

Operating mode changeover

During controller operation the operating modes object (object 7) can be used to change between the two operating modes. The pre-requirement is that the parameterised mixed mode is set. Before the changeover the previously active operating mode must be brought to a defined basic state (such as a state where no movements are being detected). Only one operating mode can be active at any one time! The polarity of the operating mode object can be parameterised.

If a changeover request is received by means of an object, the following cases need to be considered, depending on the parameterised changeover behaviour the following cases must be considered:

“Behaviour of change over” = “after end of a detection” (default):

Changeover switching operating mode → message operating mode

1. Case: The controllers is in the course of a movement detection. No delay time has yet been started. In this case when a changeover request is received over the bus, the previously prevailing operating mode will at first be maintained and the operating mode object response is to send a negative acknowledgement in the form of the object value for the previously prevailing operating mode (switching operating mode). The changeover request is stored by the controller. After detecting a movement, the controller starts the standard transmission delay. Even at this point in time the operating mode will not yet be changed over. Only when the standard transmission delay has elapsed will the controller, instead of starting the additional transmission delay, send the message for the end of detection and changeover to message operating mode. In addition the controller sends an operating mode object for a positive acknowledgement in the form of the object value for the newly set operating mode (report mode).

2. Case: The controller is counting down the standard delay (10 s after the last movement). Also in this case when a changeover request is received over the bus, the previously prevailing operating mode will at first be maintained and the operating mode object response is to send a negative acknowledgement in the form of the object value for the previously prevailing operating mode (switching operating mode). The changeover request is stored by the controller. Only when the standard transmission delay has elapsed will the controller instead of starting the additional transmission delay, send the message for the end of detection and changeover to message operating mode. In addition the controller sends a with an operating mode object a positive acknowledgement in the form of the object value for the new set operating mode (report mode).

3. Case: if at the point in time that the desired operating mode changeover is requested an additional transmission delay is counting down, then immediately at the end of the detection a parameterised switch / lighting level or value message will be sent, before then changing over into message operating mode.

4. Case: At the time of the operating mode changeover the controller is neither detecting movement, nor is a delay time active. In this case on receiving a changeover request the controller changes immediately into report mode.

Note:

- If the controller on receiving a changeover request from switching operating mode to message operating mode is in a blocking operation based on the blocking object, or if the controller has been interlocked by placing the sliding switch to position '0' / '1', then immediately at the end of the detection (!) a parameterised switch / lighting level or value message will be sent, before then changing over into message operating mode.

Changeover message operating mode → switching operating mode

1. Case: The controller at the time of receipt of the changeover request is in a detected movement (i.e. the controller has detected movements, the report message after detection of the Xth movement impulses has however not yet been sent). In this case the movement evaluation will be immediately ended (no further movement impulses will be counted) and the controller will change to switching operating mode.

2. Case: The controller at the time of receipt of the changeover request is in an identified movement (i.e. the report message after detection of the Xth movement impulse has been transmitted and further movements have also been detected). In this case the previously prevailing operating mode will at first be maintained and the operating mode object response is to send a negative acknowledgement in the form of the object value for the previously prevailing operating mode (message operating mode). The changeover request is stored by the controller. Only when the 10 s delay time has elapsed and no further movements have been detected will the controller end the identified movement, send the report message for the end of an identified movement and change to switching operating mode. In addition the controller sends an operating mode object for a positive acknowledgement in the form of the object value for the new set operating mode (switching operating mode).

3. Case: The controller at the time of receipt of the changeover request is in the 10 s delay time (i.e. no further movement is detected). In this case also the previously prevailing operating mode will at first be maintained and the operating mode object response is to send a negative acknowledgement in the form of the object value for the previously prevailing operating mode (message operating mode). The changeover request is stored by the controller. Only when the 10 s delay time has elapsed will the controller end the identified movement, send the report message for the end of an identified movement and change to switching operating mode. In addition the Controller sends an operating mode object for a positive acknowledgement in the form of the object value for the new set operating mode (switching operating mode).

4. Case: At the time of the operating mode changeover the controller is neither in an identified movement, nor is the 10 s delay time active. In this case on receiving a changeover request the controller changes immediately into switching operating mode.

Notes:

- In the case of a changeover from message operating mode to the switching operating mode only, the following additional provisions apply:
- If the controller when last in switching operating mode had been blocked by means of the blocking object, then the blocking operation will be reactivated in the course of the changeover from message operating mode to the switching operating mode and in addition the parameterised message for the start of blocking will be triggered.
- If the controller when last in switching operating mode had been interlocked by means of the sliding switch (setting '0' / '1'), then this interlock will be reactivated and in addition the message appropriate to the switch position ('0' / '1') and the set operating mode (switching, value reporting or setting a lighting level) will be triggered (see also function of the sliding switches).
- An additional transmission delay that had been aborted by the changeover to message operating mode will not be reactivated in the course of the changeover back to switching operating mode.
- If a brightness-independent operation had been set by a twilight level object value = 1, this will be reactivated, so that the twilight level is once again switched off. If the additional switch message is parameterised in message operating mode, this will also be transmitted in the course of an operating mode changeover, together with the message after detecting the Xth movement impulse / with the message for the end of an identified movement.

"Behaviour of change over" = "Immediately":

After the changeover request has been received, the previously prevailing operating mode will be immediately ended, and where necessary any movement detection operations / delay time countdowns will be aborted, outputting the message for the end of detection. The changeover to the selected operating mode will be performed immediately.

Note:

- After restoration of bus power under parameterised mixed mode, switching operating mode is always activated. After a programming procedure using ETS, the operating mode that was active prior to the programming is reinstated.

Master and slave operation

As many slaves as desired can be controlled by one master. The master sends switching, value reporting or lighting level messages, and controls the load.

Movement evaluation:

The devices communicate with each other with the object 4 “movement”:

If the master directly detects a movement, it sends the parameterised message to start the detection and a movement message on the bus to inform the slaves of the movement. In so doing the master will take account of the locally set sunset level.

If the slave detects a movement, it will send the object value = 1 to the master cyclically (cycle time = 9 s) for the duration the movement, taking account of the twilight level set for the slave. The master in turn will check cyclically (cycle time = 10 s), whether any movement messages have been received.

The twilight level evaluation is performed both in the master and also in the slaves.

If the master receives a movement message from the slave(s), the master always starts a movement evaluation and sends the message to start detection, irrespective of the twilight level setting in the master.

If the master itself detects no further movement, or no further movement messages appear, i.e. the slave detects no further movements, the master ends the movement evaluation and send the message for end of detection.

Twilight level setting:

In addition to movement detection, the twilight level between the start of detection and the end of the additional transmission delay at the master and also at the slaves must be set to brightness-independent. This ensures that even when the lights are switched on, subsequent movements can be detected (follow-up triggering).

The changeover between brightness-dependent and brightness-independent operation is done depending on the parameterised function, either directly with an output object (object 0 or 1) or with the object “sunset level” (object 3). For this the master sends messages out and is therefore in the position to switch the slaves to brightness-independent operation if a movement is detected.

The polarity of the twilight level object is fixed and cannot be parameterised:

Object “twilight level” = “0”	⇨	*twilight level according to parameter “Sunset level”*
Object “twilight level” = “1” movement detection	⇨	*brightness-independent*

A twilight level message can still be sent even if the twilight level in the master is parameterised to brightness-independent. When changing over the operating mode by means of the object “operating mode changeover” or after restoration of bus power, the ETS setting of parameterised brightness evaluation will be enabled.

The object “sunset level” is available even in free-standing operation, and permits the twilight level to be activated / deactivated at any time. The object has a higher priority than the parameters.

Blocking function:

At the start and at the end of a detection, the slave(s) interlock for the duration of the parameterised interlock times (movement controller comfort as slave)! It follows that

the interlock times for the slaves should not be set to too great a value (< 3 s). The slaves detect the start / the end of a movement detection by receipt of a switch, value report or lighting level slave message from the master. Certain functions are implemented in the master but not in the slave (e.g. “setting lighting levels”), the detection of a movement is performed by the twilight level object.

The master always interlocks only at the end of a detection. Even slaves of other types (“standard controller” / “comfort intruder detector”) will interlock only at the end of a detection in which they evaluate a movement message from the master.

Note:

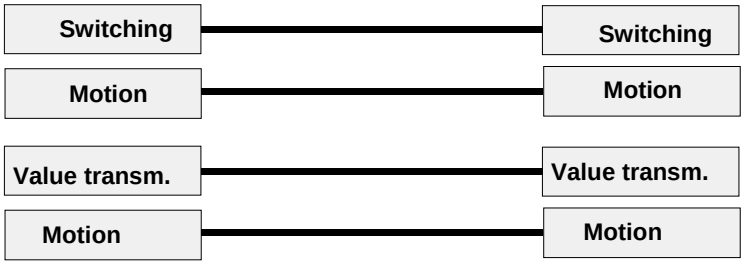
- **So as to avoid malfunctions, in switching operating mode if the slaves are of type “comfort controller” then on sending object 4 (message to master) the “W” flags should remain cleared down (default)!**

So as to avoid malfunctions, in master / slave operation the objects “output”, “movement” and “twilight level” should be sent exclusively between master and slave(s) or between master and load, and not linked to other bus participants!

A master / slave operation can also run in combination with standard microprocessor controllers / with comfort intruder detectors. Since in that circumstance different conditions apply for the various functions (switching, value transmission, light scene control), the individual cases are detailed in the following pages.

1. - Master: movement controller comfort **- Slave: movement controller comfort**

Function: Switching / Value transmission



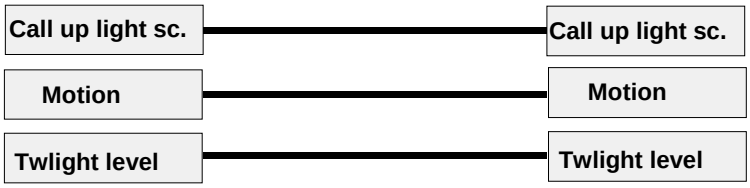
Switching the twilight level of the slaves on and off, where not parameterised to brightness-independent, is done by linking the output objects (object 0 or 1). An object value > 0 at the start of the detection causes the twilight level (brightness-independent) to be deactivated, and an object value = 0 after the additional transmission delay has elapsed causes the twilight level (brightness-dependent) to be activated.

Exception case: if at the start of the detection an object value = 0 is transmitted, the twilight level-object should be sent in addition, to deactivate the twilight level in the slave. Only by this means can a brightness-independent movement evaluation be achieved during a movement detection.

It follows that the sending of the twilight level with the twilight level object at the start of the movement / after the additional transmission delay has elapsed is not absolutely necessary, so that the twilight level object transmit flag in the master can be cleared down.

The set interlock time is started in the slave on receipt of the messages at the start and end of a detection event.

Function: Call up light scenes

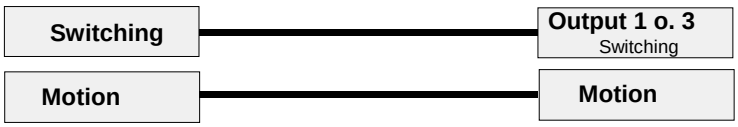


Switching the twilight level of the slaves on and off, where not parameterised to brightness-independent, is done by linking the twilight level objects since the light scene number that is sent does not permit any feedback regarding the brightness of the lights that are controlled. At the start of detection the master sends a twilight level value = 1 for brightness-independent detection. Once the additional transmission delay has elapsed, the twilight level value = 0 causes the slave to revert to a brightness-dependent movement evaluation. If once the additional transmission delay has elapsed a light setting is called up which the raises the current lighting conditions in a room above the set twilight level of the controller, the controller cannot detect any new movements. Because of this fact, particular care is needed when setting the function setting lighting levels and setting brightness-dependent movement detection (⇨ twilight level not parameterised to be independent of brightness), to avoid such projection errors.

The set interlock time is started in the slave on receipt of the messages at the start and end of a detection event.

2. - Master: movement controller comfort **- Slave: presence detector comfort**

Function: Switching / Value transmission

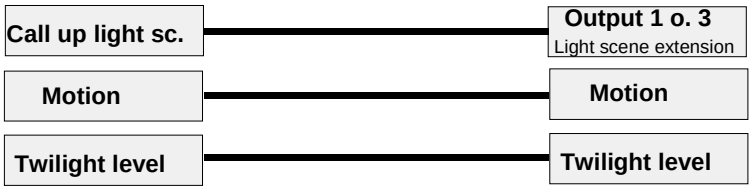


Switching the twilight level of the slaves on and off, where not parameterised to brightness-independent, is done by linking the output objects. An object value > 0 at the start of the detection causes the twilight level (brightness-independent) to be deactivated, and an object value = 0 after the additional transmission delay has elapsed causes the twilight level (brightness-dependent) to be activated.

Exception case: if at the start of the detection an object value = 0 is transmitted, the twilight level-object should be sent in addition, to deactivate the twilight level in the slave. Only by this means can a brightness-independent movement evaluation be achieved during a movement detection.

It follows that the sending of the twilight level with the twilight level object at the start of the movement / after the additional transmission delay has elapsed is not absolutely necessary, so that the twilight level object transmit flag in the master can be cleared down. After the total delay has elapsed, the set interlock time will be started in the slave by the receipt of the message at the end of a detection in the absence of a movement message.

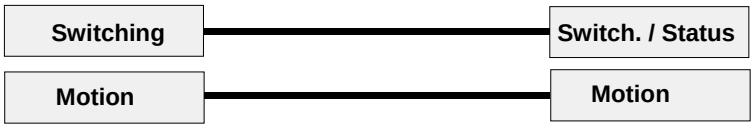
Function: Call up light scenes



Switching the twilight level of the slaves on and off, where not parameterised to brightness-independent, is done by linking the twilight level objects since the light scene number that is sent does not permit any feedback regarding the brightness of the lights that are controlled. At the start of detection the master sends a twilight level value = 1 for brightness-independent detection. Once the additional transmission delay has elapsed, the twilight level value = 0 causes the slave to revert to a brightness-dependent movement evaluation. If once the additional transmission delay has elapsed a light setting is called up which the raises the current lighting conditions in a room above the set twilight level of the controller, the controller cannot detect any new movements. Because of this fact, particular care is needed when setting the function calling up light setting and setting brightness-dependent movement detection (⇨ twilight level not parameterised to be independent of brightness), to avoid such projection errors. After the total delay has elapsed, the set interlock time will be started in the slave by the receipt of the message at the end of a detection in the absence of a movement message.

3. - Master: movement controller comfort **- Slave: movement controller standard**

Function: Switching



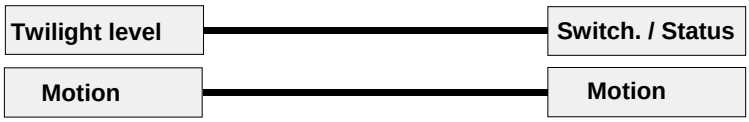
Switching the twilight level of the slaves on and off, where not parameterised to brightness-independent, is done by linking the switched objects. An object value > 1 at the start of the detection causes the twilight level (brightness-independent) to be deactivated, and an object value = 0 after the additional transmission delay has elapsed causes the twilight level (brightness-dependent) to be activated.

Exception case: if at the start of the detection an object value = 0 is transmitted, the twilight level object should be linked with the object “switching/status” in the slave, to deactivate the twilight level in the slave. Only by this means can a brightness-independent movement evaluation be achieved during a movement detection.

It follows that the sending of the twilight level with the twilight level object at the start of the movement / after the additional transmission delay has elapsed is not absolutely necessary, so that the twilight level object transmit flag in the master can be cleared down.

After the total delay has elapsed, the set interlock time will be started in the slave by the receipt of the message at the end of a detection in the absence of a movement message.

Function: Value transmission / call up light scenes

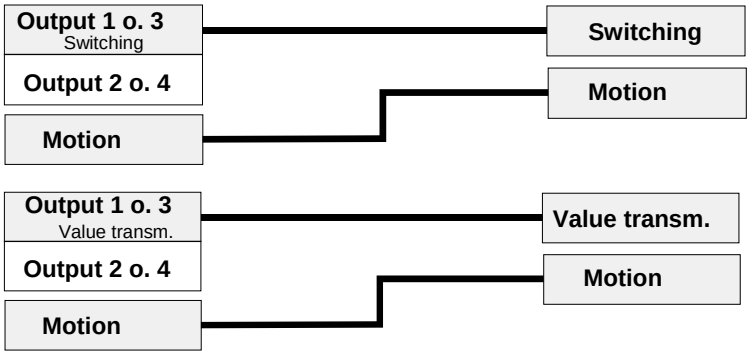


Switching the twilight level of the slaves on and off, where not parameterised to brightness-independent, is done by linking the twilight level object of the master with the object “switching/status” of the slave. At the start of detection the master sends a twilight level value = 1 for brightness-independent detection. Once the additional transmission delay has elapsed, the twilight level value = 0 causes the slave to revert to a brightness-dependent movement evaluation. If once the additional transmission delay has elapsed a light setting is called up which the raises the current lighting conditions in a room above the set twilight level of the controller, the controller cannot detect any new movements. Because of this fact, particular care is needed when setting the function setting lighting levels and setting brightness-dependent movement detection (⇨ twilight level not parameterised to be independent of brightness), to avoid such projection errors.

The set interlock time will be started in the slave after the total delay for activation of the twilight level (“0” message) has elapsed in the absence of a movement message.

4. - Master: presence detector comfort - Slave: movement controller comfort

Function: Switching / Value transmission

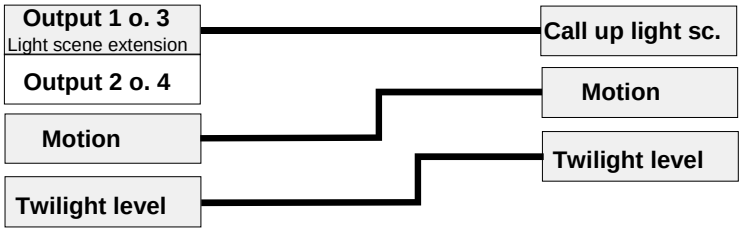


Switching the twilight level of the slaves on and off, where not parameterised to brightness-independent, is done by linking the output objects. An object value > 0 at the start of the detection causes the twilight level (brightness-independent) to be deactivated, and an object value = 0 after the additional transmission delay has elapsed causes the twilight level (brightness-dependent) to be activated.

Exception case: if at the start of the detection an object value = 0 is transmitted, the twilight level-object should be sent in addition, to deactivate the twilight level in the slave. Only by this means can a brightness-independent movement evaluation be achieved during a movement detection.

It follows that the sending of the twilight level with the twilight level object at the start of the movement / after the additional transmission delay has elapsed is not absolutely necessary, so that the twilight level object transmit flag in the master can be cleared down. The set interlock time is started in the slave on receipt of the messages at the start and end of a detection event.

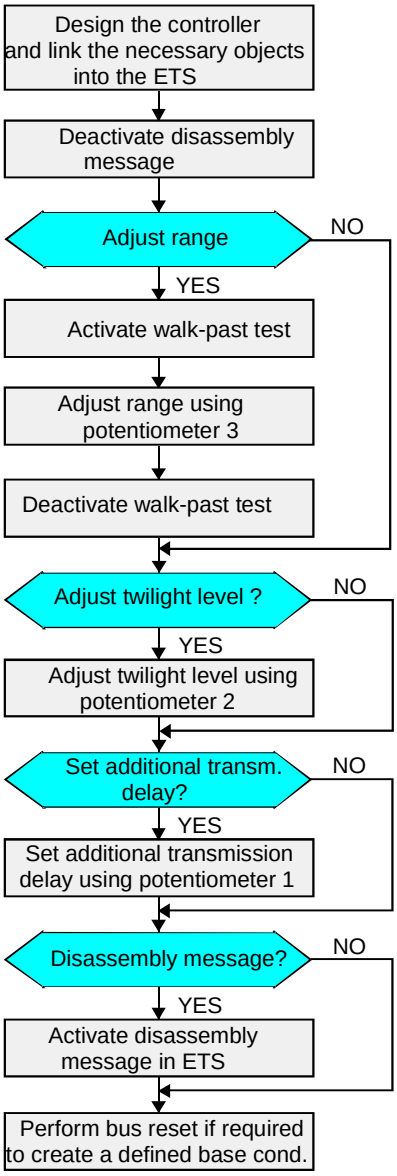
Function: Call up light scenes



Switching the twilight level of the slaves on and off, where not parameterised to brightness-independent, is done by linking the twilight level objects since the light setting level number that is sent does not permit any feedback regarding the brightness of the lights that are controlled. At the start of detection the master sends a twilight level value = 1 for brightness-independent detection. Once the additional transmission delay has elapsed, the twilight level value = 0 causes the slave to revert to a brightness-dependent movement evaluation. If once the additional transmission delay has elapsed a light setting is called up which the raises the current lighting conditions in a room above the set twilight level of the controller, the controller cannot detect any new movements. Because of this fact, particular care is needed when setting the function calling up light setting and setting brightness-dependent movement detection (⇨ twilight level not paramterised to be independent of brightness), to avoid such projection errors. The set interlock time is started in the slave on receipt of the messages at the start and end of a detection event.

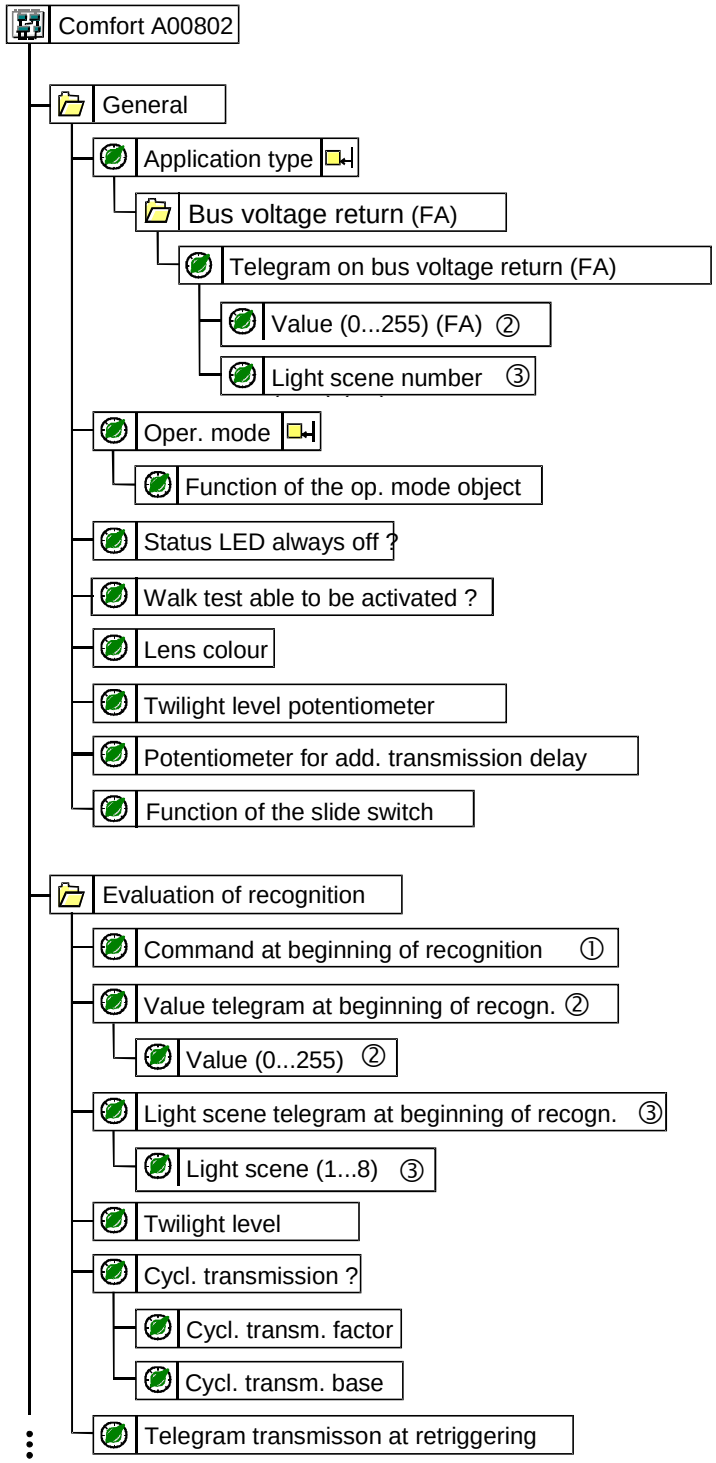
Procedure: Commissioning the movement controller comfort

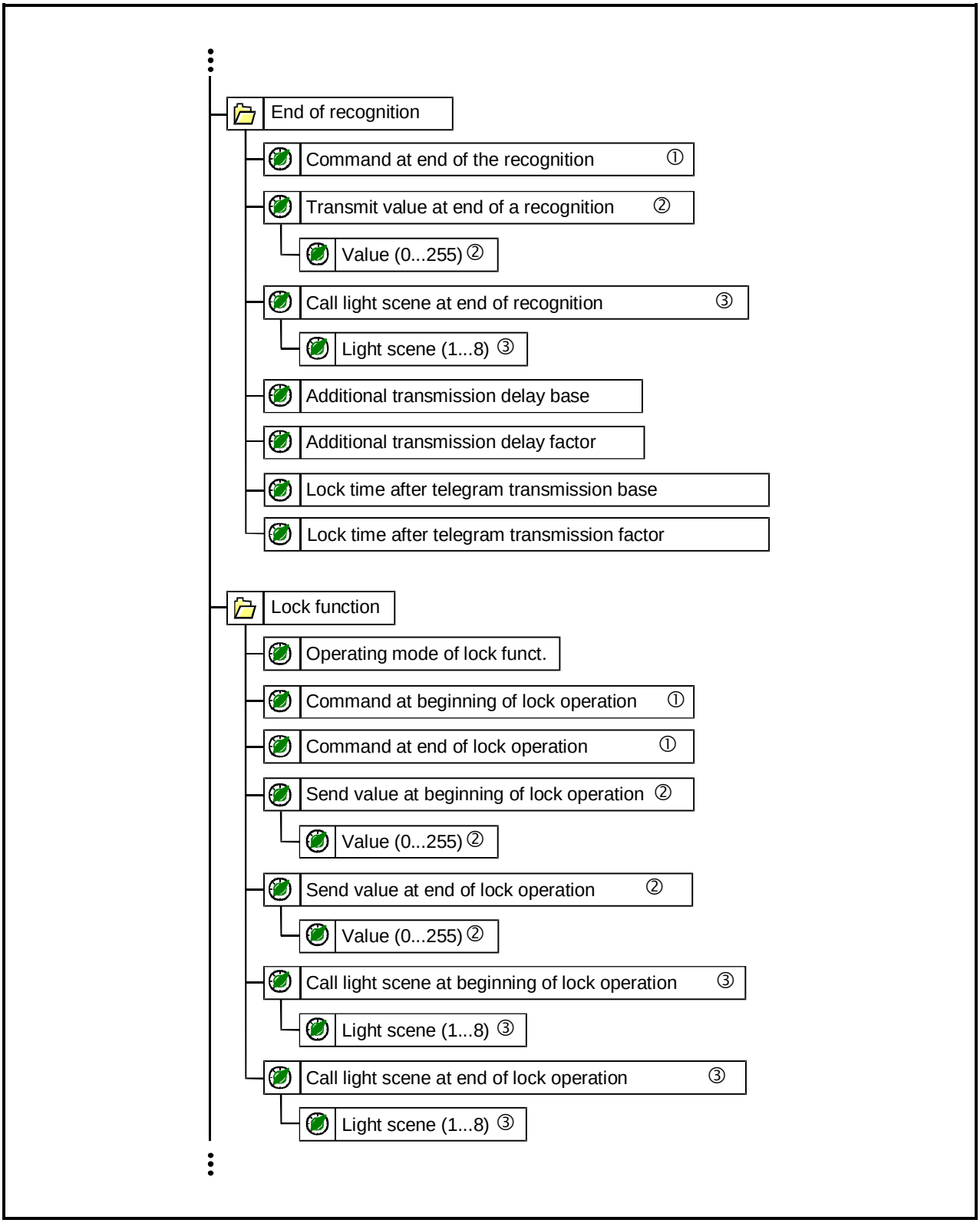
To ensure problem-free commissioning, the following procedure should be adopted:

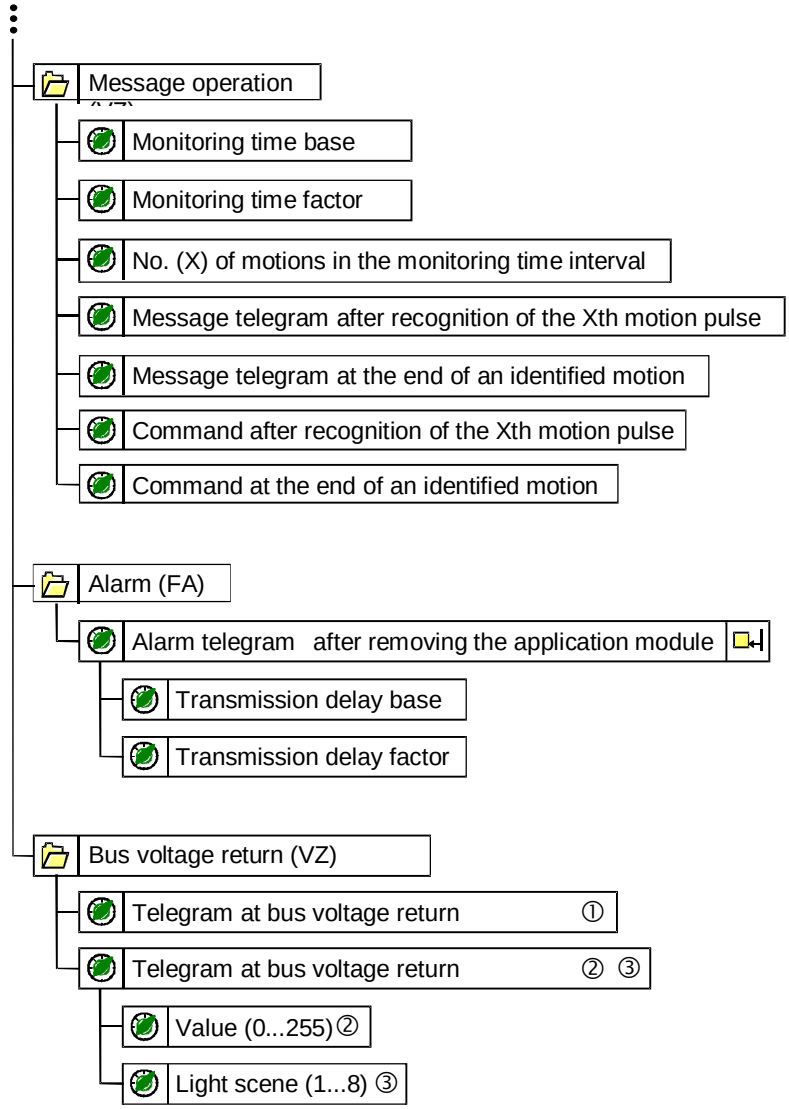


Once all devices (for instance masters and slaves in a project) have been configured and individually commissioned, it is recommended that a bus reset is performed, to create a defined base condition.

Parameter tree




End of recognition
Command at end of the recognition ①
Transmit value at end of a recognition ②
Value (0...255) ②
Call light scene at end of recognition ③
Light scene (1...8) ③
Additional transmission delay base
Additional transmission delay factor
Lock time after telegram transmission base
Lock time after telegram transmission factor
Lock function
Operating mode of lock funct.
Command at beginning of lock operation ①
Command at end of lock operation ①
Send value at beginning of lock operation ②
Value (0...255) ②
Send value at end of lock operation ②
Value (0...255) ②
Call light scene at beginning of lock operation ③
Light scene (1...8) ③
Call light scene at end of lock operation ③
Light scene (1...8) ③



FA = Full access

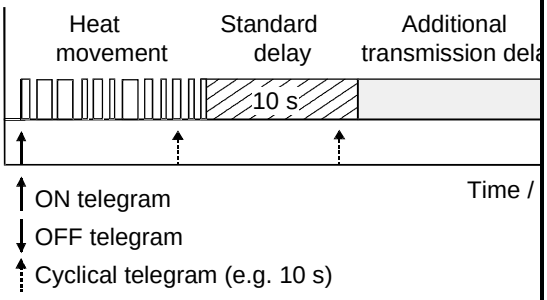
① = These parameters apply to the operating modes "switching mode" and "message operating mode/switching mode" respectively.

② = These parameters apply to the operating modes "value transmitter mode" and "message operating mode/value transmitter mode" respectively.

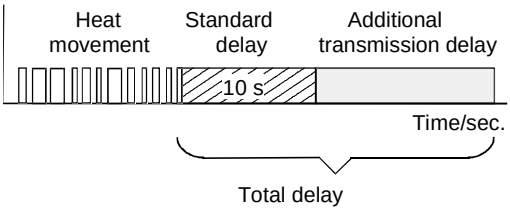
③ = These parameters apply to the operating modes "light scene mode" and "message operating mode/light scene mode" respectively.

Parameters		
Description:	**Values:**	**Comments:**
General		
Type of application	**Single unit** Master unit Extension unit	The detector works as a single device or in master unit/extension unit mode.
Operating mode	**Switching operating mode** Value transmitter operating mode Light scene operating mode	The detector works in switching mode and sends corresponding switching, value, and light scene telegrams.
	Message operation	The detector works in message operating mode “less sensitively" to detected movements, i.e. a telegram is not sent until after several queries of the movement signal (cf. functions description).
	Message operation/switching mode Message operation/value transmitter mode Message operation/light scene mode	The detector works in mixed operations, i.e. switchover is possible between message operating mode and switching mode (switching, value transmitter, lighting arrangement) through the operating mode object.
Function of the operating mode object	**0 = lighting op., 1 = message op.** 1 = lighting op., 0 = message op.	*Only relevant with mixed operating modes.* Telegram allocation to switching mode and message operating mode. The operating modes object can be used to switch between these two operating modes.
Status LED always off?	**NO**	The status LED can be activated for the walk test and the alarm function.
	YES	The status LED is always off.
Activation of test operation possible?	**NO** YES	The walk test is used to set the detector's sensitivity during commissioning. When the walk test is activated, the LED switches on if a movement is detected. At the end of detection the LED switches off again (see "Functions description" as well).
Colour of lens	**Bright lens**	The detector works with a clear lens.
	Dark lens	The detector works with a dark lens.
Potentiometer “Twilight level”	**enabled** disabled	The twilight level potentiometer is released (or locked respectively)
Potentiometer "Additional transmission delay”	**enabled** disabled	The potentiometer for the additional transmission delay is released (or locked respectively)
Function of slide switch	**Slide switch: 1 / AUTO / 0** Slide switch: 1 / AUTO / -- Slide switch: -- / AUTO / 0 Slide switch: -- / AUTO / --	Allocation of the functions to the slide switch. In message operating mode the slide switch has no function.

Parameters		
Description:	**Values:**	**Comments:**
Evaluation of detection		
Switch telegram at beginning of detection	**ON** OFF No telegram	*Only relevant with: switching in switching mode (single device or main station).* An ON, OFF or no telegram is sent at start of detection.
Value telegram at beginning of detection	**YES** NO	*Only relevant with: value transmitter in switching mode (single device or main station.* A value telegram or no telegram is sent at beginning of recognition
Value 1 Byte (0...255)	0...255; **255**	Defines the value of the telegram to be sent.
Light scene telegram at beginning of detection	**YES** NO	*Only relevant with: light scene in switching mode (single device or main station.* A light scene telegram or no telegram is sent at start of detection.
Light scene number (1...8)	1...8; **1**	Defines the number of the light scene to be sent.
Twilight level	No switching / value recall / message	Telegram triggering is suppressed.
	Independent of brightness	Telegram triggering is independent of brightness.
	Range 3-10 Lux **Range 10-30 Lux** Range 30-60 Lux Range 60-100 Lux	With the lighting switched off telegrams are only triggered is the brightness is below the set value. This value results from the range set with ETS and from the released twilight levels potentiometer as follows: Central potentiometer setting = middle value of the range set with ETS Zero potentiometer setting = lower limit value of the range set with ETS Max. potentiometer setting = upper limit value of the range set with ETS

Cyclic transmission?	**NO** YES	Cyclic transmission during a detected movement can be activated or deactivated. A movement is understood as the period from the start of the first detection impulse plus the standard delay (10 sec) which starts with the last rising edge of the heat movement. 
Cyclic transmission base	**1.0 s** 34 s 9 min 2.1 s 1.1 min 18 min 4.2 s 2.2 min 36 min 8.4 s 4.5 min 1.2 h 17 s	Base for cyclic transmission. Cyclic transmission = Base x Factor
Cyclic transmission factor (10...255)	10...255; **10**	Factor for cyclic transmission. Cyclic transmission = Base x Factor
Telegram transmission in case of retriggering?	**NO** YES	Retriggering during the additional transmission delay period can be triggered with or without a telegram.

Parameters		
Description:	**Values:**	**Comments:**
End of detetcion		
Switch telegram at end of detection (standard delay time = 10 sec)	ON **OFF** No telegram	*Only relevant with: switching in switching mode (single device or main station).* An ON, OFF or no telegram is sent at end of detection.
Value telegram at end of detection (standard delay time = 10 sec)	**YES** NO	*Only relevant with: value transmitter in switching mode (single device or main station.* A value telegram or no telegram is sent at end of detection
Value 1 Byte (0...255)	0...255; **0**	Defines the value of the telegram to be sent.
Light scene telegram at end of detection (standard delay time = 10 sec)	**YES** NO	*Only relevant with: light scene in switching mode (single device or main station.* A light scene telegram or no telegram is sent at end of detection.
Light scene number (1...8)	1...8; **2**	Defines the number of the light scene to be sent.

Additional transmission delay , base	130 ms 260 ms 520 ms **1.0 s** 2.1 s 4.2 s	8.4 s 17 s 34 s 1.1 min 2.2 min 4.5 min	9 min 18 min 36 min 1.2 h	The total delay time results from the addition of the standard delay (10 s) and the additional transmission delay.  Additional transmission delay = Base x Factor
Additional transmission delay, factor (0...255)	0...255; **10**			Definition of the time factor for the additional transmission delay. Additional transmission delay = Base x Factor
Interlock time after telegram transmission , base	8 ms **130 ms** 2.1 s 33 s			On expiry of the total delay a locking time can be activated which prevents the consumers being switched on again through cooling processes. The detector is not ready to receive again until expiry of the locking time. Locking time = Basis · Factor
Interlock time after telegram transmission, factor (0...255)	0...255; **23**			Definition of the time factor for the locking time. Lock time = Base x Factor

Parameters		
Description:	**Values:**	**Comments:**
Blocking function		
Operating mode of the blocking object		*Only relevant in lighting mode.*
	0 = operation; 1 = locked	The lock object is activated if lock object value = 1.
	1 = operation; 0 = locked	The lock object is activated if lock object value = 0.
Switch telegram at beginning of blocking	**ON** OFF No telegram	Defines whether ON, OFF or no telegram sent at start of lock operation.
Switch telegram at end of blocking	ON **OFF** No telegram	Defines whether ON, OFF or no telegram sent at end of lock operation
Value telegram at beginning of blocking	**YES** NO	Defines whether value telegram sent at start of lock operation.
Value 1Byte (0...255)	0...255; **255**	Defines the value of the value telegram to be sent at the start of lock operation.
Value telegram at end of blocking	**YES** NO	Defines whether a value telegram is sent at end of lock operation.

Value 1 Byte (0...255)	0...255; **0**	Defines the value of the value telegram to be sent at end of lock operation.
Light scene telegram at beginning of blocking	**YES** NO	Defines whether a lighting arrangements telegram is sent at start of lock operation.
Light scene number (1...8)	1...8; **3**	Defines the value of the light scene telegram to be sent at start of lock operation.
Light scene telegram at end of blocking	**YES** NO	Defines whether a lighting arrangements telegram is sent at end of lock operation.
Light scene number (1…8)	1…8; **4**	Defines the value of the light scene telegram to be sent at end of lock operation.

Parameters				
Description:	**Values:**			**Comments:**
Message operating mode				
Monitoring time, base (FA)	130 ms 260 ms 520 ms **1.0 s** 2.1 s 4.2 s	8.4 s 17 s 34 s 1.1 min 2.2 min 4.5 min	9 min 18 min 36 min 1.2 h	A signal telegram is triggered if there is a number N of movement impulses within a set monitoring time. Monitoring time = Base x Factor
Monitoring time, factor (1...255) (FA)	1...255; **10**			A signal telegram is triggered if there is a number N of movement impulses within a set monitoring time. Monitoring time = base x Factor
Number (X) of motions during monitoring time (1...255) (FA)	1...255; **4**			A signal telegram is triggered if there is a number N of movement impulses within a set monitoring time.
Message telegram after detection of Xth motion pulse (FA)	ON OFF **No telegram**			Defines whether an ON, OFF or no telegram is sent after detection of the Nth movement impulse.
Message telegram at end of an identified motion (FA)	ON OFF **No telegram**			Defines whether an ON, OFF or no telegram is sent at end of an identified movement. The end of a movement is detected after the absence of movement impulses for 10 seconds.
Switch telegram after detection of Xth motion pulse (FA)	**ON** OFF No telegram			In addition to the signal telegram a switch telegram (ON, OFF or No telegram) can be generated for the option of sending the value after detection of the Nth movement impulse e.g. to a siren.
Switch telegram at end of an identified motion (FA)	**ON** OFF No telegram			In addition to the signal telegram a switch telegram can be generated for the option of sending the value after detection of the Nth movement impulse e.g. to a siren. The end of a movement is detected after the absence of movement impulses for 10 seconds.

Parameters		
Description:	**Values:**	**Comments:**
Alarm function (FA)		
Alarm function	**enabled** disabled	The alarm function is released (or locked respectively)
Format of data of alarm objects	1 Bit 1 Byte	Format of the alarm object
Command after taking off the movement detector (FA)	**ON telegram** OFF telegram	When the user module is pulled off the bus coupling unit an ON or OFF alarm telegram can be triggered through the alarm object with a time delay.
Transmission delay, base (FA)	0.5 ms 2.1 s 8 ms 33 s 130 ms	The time after the application module is pulled off until the alarm telegram is triggered (transmission delay) results from: Transmission delay = Base x Factor
Transmission delay, factor (0...255) (FA)	0...255; **5**	The time after the application module is pulled off until the alarm telegram is triggered (transmission delay) results from: Transmission delay = Basis x Factor

Parameters		
Description:	**Values:**	**Comments:**
Bus voltage return (FA)		
Telegram in case of bus voltage return (will be sent by object 0) (FA)	ON OFF **No telegram**	*Only relevant with: switching in switching mode (single device or main station).* An ON, OFF or no telegram is sent on bus voltage reconnection.
Telegram in case of bus voltage return (will be sent by object 1) (FA)	YES **NO**	*Only relevant with: value transmitter in switching mode (single device or main station.* A value telegram can be sent on bus voltage reconnection.
Value 1 Byte (0...255) (FA)	0...255; **0**	Defines the value of the value telegram to be sent.
Telegram in case of bus voltage return (will be sent by object 0) (FA)	YES **NO**	*Only relevant with: light scene in switching mode (single device or main station.* A light scene telegram can be sent at end of detection.
Light scene number (1...8) (FA	1...8; **8**	Defines the number of the light scene to be sent.

Notes on the software
To enable all parameters to be processed, parameter processing must be set to "Full access" (FA).