Movement controller, Flush-mounted (Up) 752611xx, 752612xx

Mounting height 1.10 m and 2.20 m

Order no.:

752611xx

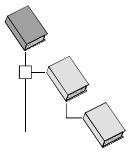
752612xx

The *instabus* 180° movement controller is conceived 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 switching telegrams in dependency on the preset parameters to the *instabus* EIB. The device's range can also be adapted to local requirements by means of a potentiometer. If more than one detector acts on a group of lights, extensions can be set up. The enclosed cover plate can be placed on the detector to restrict the recognition range to 90°.

General technical data

Supply:	through BCU (24V; +6V/-4V) from internal supply with 5 V
Protection class:	IP 20
Ambient temperature:	-5 °C - 45°C
Connection:	on BCU 2 x 5-pole user interface
Recognition range:	180°
Nominal range, side:	2 x 6 m (with installation height 1.10 m or 2.20 m)
Nominal range, frontal:	10 m (with installation height 1.10 m or 2.20 m)
No. of switching segments (lens)	28 on 2 levels

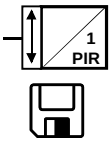
Product management:



Gebr. Berker

Physical sensors

Movement



Movement controller
Order no.: 752611xx, 752612xx

PIR single unit A00101
PIR master unit A00201
PIR extension unit A00301

Order data:

Design	Colour	Order no. **Installation height: 1.10 m**	Order no. **Installation height: 2.20 m**
Module 2*	**white**	75261**12**	75261**12**
	polar white	75261**19**	75261**19**
ARSYS*	**white**	75261**42**	75261**42**
	polar white	75261**49**	75261**49**
	light bronze, lacquered	75261**44**	75261**44**
	st. steel, lacquered	75261**43**	75261**43**
CLIPTEC*	**polar white**	75261**59**	75261**59**
	light grey	75261**50**	75261**50**
	deep black	75261**55**	75261**55**
	platinum, lacquered	75261**58**	75261**58**
Twinpoint	**polar white**	75261**69**	75261**69**
	red	75261**66**	75261**66**
	black	75261**65**	75261**65**
B1/B3	**polar white**	75261**89**	75261**89**
	alu	75261**83**	75261**83**
	anthracite	75261**85**	75261**85**

Application description:

Heat movements in the recognition range generate a switching telegram in dependence on the parameterizable brightness values. If recognition continues, transmission can be repeated cyclically. At the end of recognition a telegram is sent with a delay of min. 10 seconds. The delay time is variable.
A locking function deactivates the detector in dependence on an externally generated telegram with a corresponding group address.

PIR single unit A00101

Association, group addresses and objects Parameter window

No. of associations: 5
No. of group addresses: 5
No. of objects: 1 switch object, send (1 bit)
1 locking object, receive (1 bit)

Evaluation of recognition	
Telegram at beginning of the recognition	**ON**, OFF, no telegram
Switching depending on twilight value	No switching, 1, 2, 5, 10, **15**, 20, 50, 100, 200, 500, 1000 Lux, independent from brightness
Cyclic transmission ?	YES, **NO**
Cyclic transmission, base	**1,0**; 2,1; 4,2; 8,4; 17; 34s 1,1; 2,2; 4,5; 9; 18; 36 min, 1,2 h
Cyclic transmission, factor (10...127)	**10..**127
End of recognition	
Telegram at the end of the recognition (default delay time = 10 seconds)	ON **OFF** No telegram
Additional transmission delay, base	130; 260; **520 ms** 1.0; 2.1; 4.2; 8.4; 17; 34 min 1,2 h
Additional transmission delay, factor	**0**..127
Lock time after telegram transmission, base	0.5 ms; 8 ms; **130 ms**; 2.1 s; 33 s
Lock time after telegram transmission, factor (0...255)	0..**23**..255
Lock function	
Function of locking object	**0 = operations, 1 = locked** 1 = operations 0 = locked
Telegram at the beginning of lock op.	**ON**, OFF, no telegram
Telegram at the end of lock operation	ON, **OFF**, no telegram
Complete parameter list under user level	High

Telegram at beginning of the recognition: The application module works on the principle of PIR movement detectors. The physical properties "movement" **and** "heat" are used to develop a telegram. The start of recognition is the first transmission of a telegram after a pause. The value of the telegram can be set as an ON or an OFF switching command (1 or 0), or telegram transmission can be prevented for service purposes.

Parameter description:

PIR single unit A00101

Switching depending on the twilight value: The electronics for the evaluation of the factors movement/heat follows a switch type for evaluation of the current ambient brightness. If the current value **is below** the parameter default, on recognition a telegram is sent in accordance with the parameter settings.

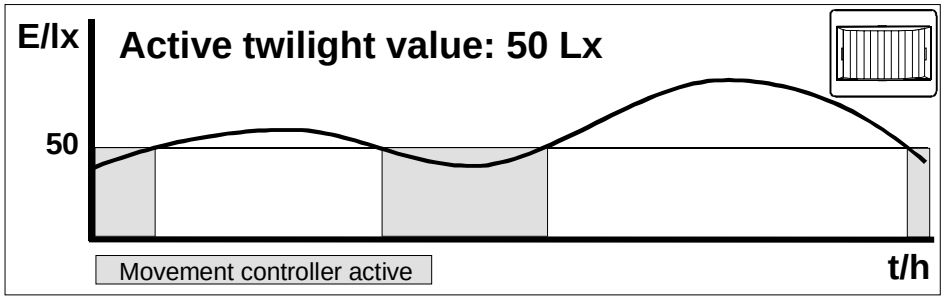


Fig.: Twilight value

The setting ***No switching*** prevents telegram triggering. In the setting ***Independent of brightness*** there is no internal link with the ambient brightness, the detector is constantly active. We recommend using DIN 5035, or Workshop Directive 7/3 for practical settings for the brightness:

Nominal illuminance	Room type
50 lx	Walkways for persons, store rooms similar and large-volume goods
100 lx	Walkways for persons, vehicle routes, stairs, reception rooms, sanitary areas and staff rooms, rooms for domestic engineering installations, store rooms with search tasks
200 lx	Rooms open to the public, canteens, working areas with approximate visual tasks
300 lx	Offices with daylight-oriented workplaces near windows, classrooms, discussion rooms, working areas with medium visual tasks
500 lx	Offices, workshops and hobby rooms, laboratories, working areas with increased visual tasks, such as repair workshops for small accessories
750 lx	Open-plan offices, working areas with high visual tasks such as technical drawing
1000 lx	Working areas with very high visual tasks such as jewellery manufacture, colour testing, etc.

Cyclic transmission: Recognition is active if heat movements are registered in the recognition range within the effective total delay time. The telegram (e.g. *ON*) can be repeated cyclically in this time.

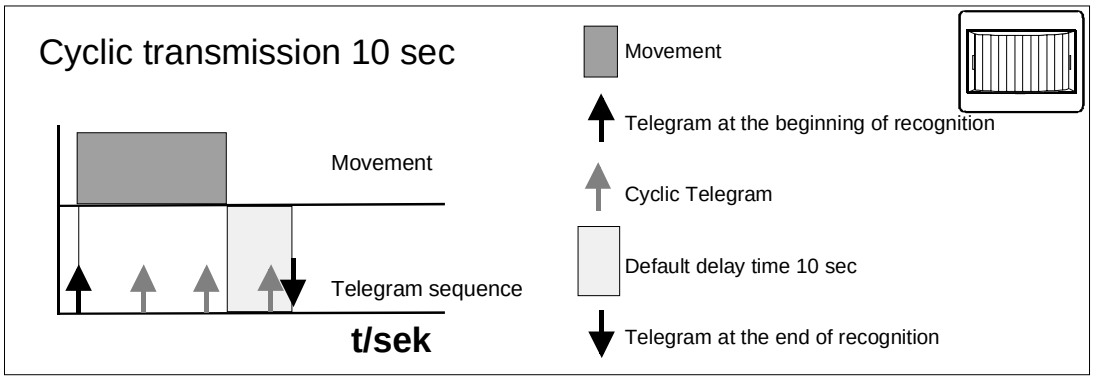
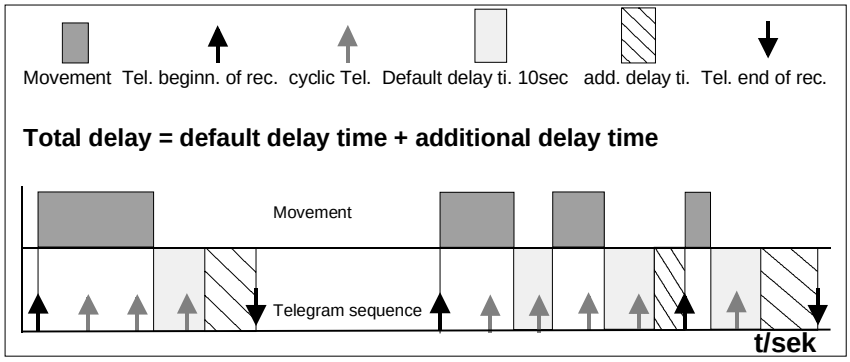


Fig.: Cyclic trans-mission

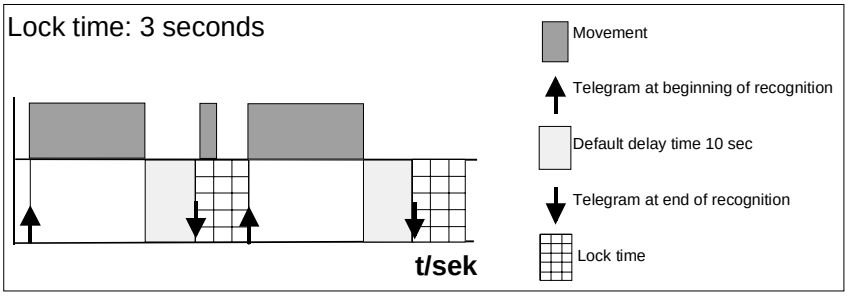
Parameter description:



Total delay and telegram cycle

Additional transmission delay: The standard time can be extended with the parameter ***Additional transmission delay "factor x base"*** to an effective total delay time.
If the detector registers heat movements after expiry of the standard delay of 10 seconds, a telegram is sent in accordance with the setting *Telegram at beginning of recognition* (e.g. *ON*). The counter is reset to the total delay time.

Lock time after telegram transmission: A telegram in accordance with the setting is sent at the end of recognition plus the optional transmission delay, and the consumers in general are switched off. The sudden cooling down causes heat movements that can lead to switching on again.
The locking time prevents this, and the detector is not ready for operations until after this forced pause.



Lock function: The automatic function can be deactivated with the help of the lock function. The lock function can be triggered by any sensor of data type 1 bit, so that the corridor lighting can be switched on for a defined period independently of through traffic.

Function of the locking object: Telegrams with the group addresses linked to object 1 are **received.**
Standard setting *0 = operations, 1= locked* :
Example: a timer switches the corridor lighting on for the period 5 p.m. - 9 p.m. independently of the traffic.

Setting *1 = operations, 0= locked* :
Example: the switching output (push to break) of an alarm is coupled with a binary input to switch the lighting in the object on completely if an alarm is activated (edge triggering 1 = close, 0 = open)

Telegram at beginning/end of locking: At the moment the locking function is activated/deactivated it is possible to deliberately trigger the bus devices combined in the function group switching object (object 0). The detector **receives** the lock activation and sends a telegram on the bus if the corresponding parameters are set (ON/OFF). Transmission of a subsequent telegram after activation of the lock function can be prevented by selecting the parameter *No telegram*.

Complete parameter list under user level: The currently selected ETS user level is shown in the

parameter window. Depending on the selected user level, critical parameters can be masked out. The user level can be set in the ETS under *Options*.

Start-up

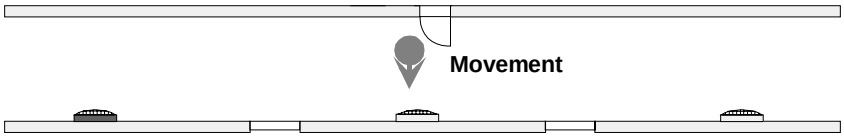
When the bus voltage is restored, and after an application is loaded, the detector remains inactive for a period of 80 seconds!
The safety function can be neutralised by activating and deactivating the locking object during the locking period.

Movement controller in master and extension operations

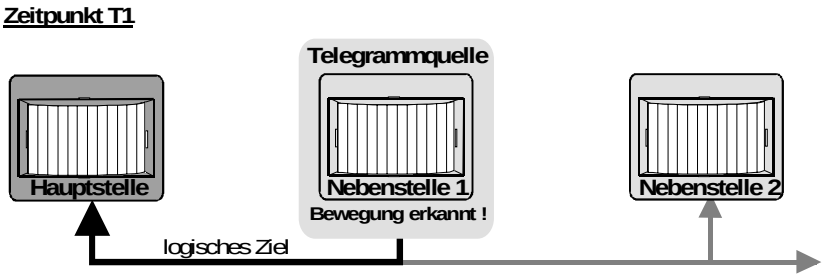
The application "PIR master unit and extension unit" enables the interplay of several detectors to extend the recognition field. To prevent malfunctions, the individual detectors are intelligently combined to form a function unit. Any number of extensions can be combined with a master.

Basic principle: the basic principle of the "master/extension" combination is formed from the separation of the information "*Movement registered*" and "*Switching*".
Sending switching telegrams (ON/OFF) into the system is solely under the control of the master station
The task of the extensions is to pass information about registered heat movements to the master station.

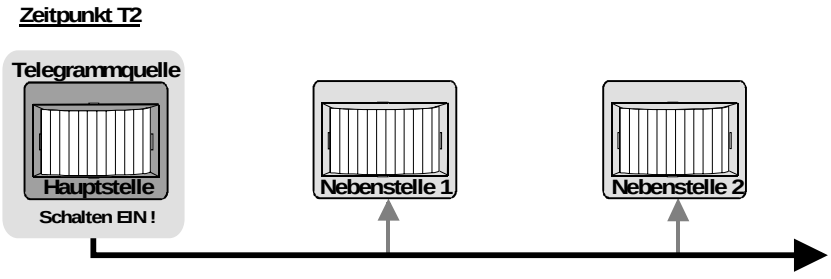
Room situation



Telegram: movement detected



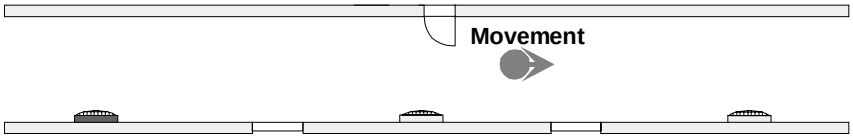
Telegram: switch ON



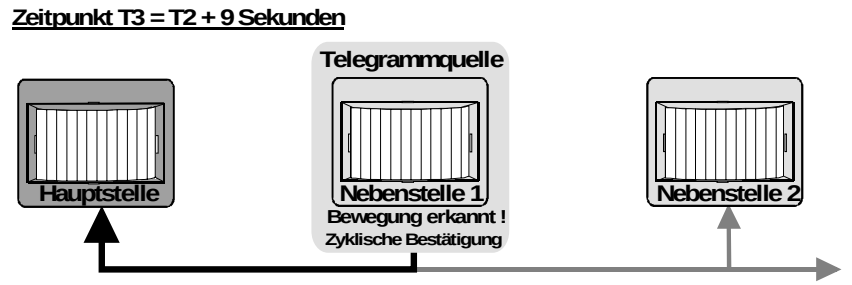
Detector in master and extension operations

If a heat movement is detected and the status continues, the extension sends confirmation telegrams within a fixed cycle time of 9 seconds. The master station checks these telegrams cyclically every 10 seconds. If the heat source leaves the recognition range of the currently active extension, or if it cannot be detected, transmission is discontinued. The operations mode *End of recognition* is set in the master station, so that an OFF telegram is sent to the appropriate group after the preset total delay time.

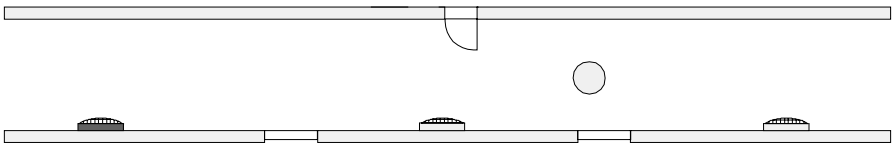
Recognition by extension 1



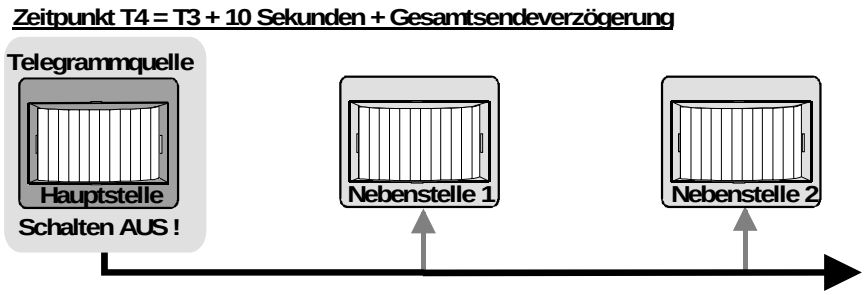
Telegram: cyclic confirmation



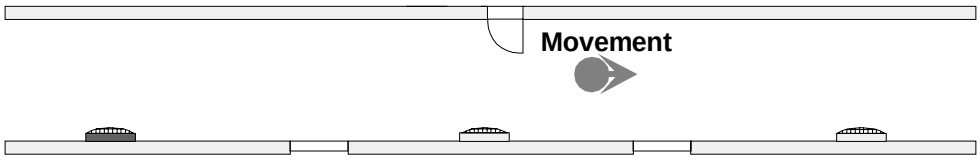
End of recognition



Telegram: switch OFF



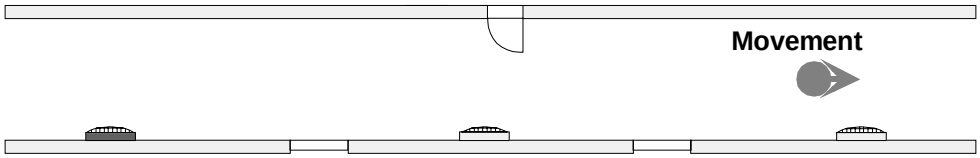
The heat source leaves the recognition range of extension 1. Extension 2 is installed in such a way that an enclosed recognition field is created and it can take over the function; it sends a telegram *Movement detected* to the master station.
This guarantees that in large recognition areas (e.g. long corridors) lighting is switched on in accordance with use. Without this takeover function constant illumination of the complete access area during the period of access cannot be guaranteed.



Recognition by extension 1

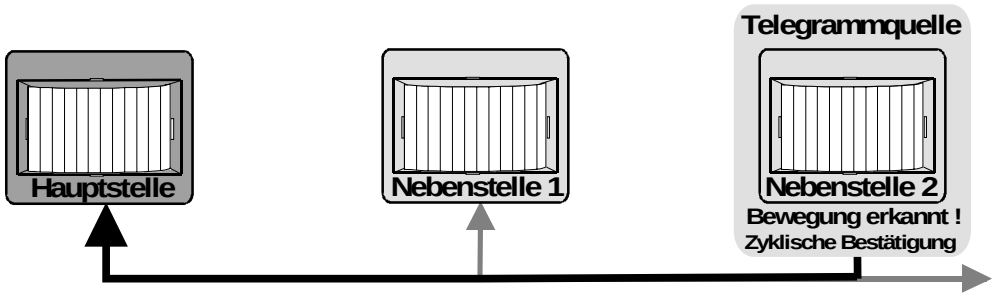
Zeitpunkt T3 = T2 + 9 Sekunden

Cyclic recognition confirmation extension 1



Recognition by extension 2

Zeitpunkt T4



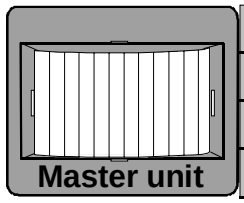
Takeover of recognition and cyclic recognition confirmation by extension 2

PIR master unit

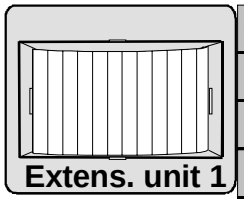
Extension

Detector in master and extension operations

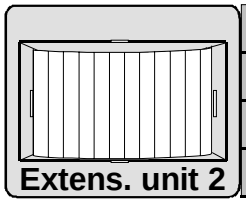
The illustration below shows the object link of the individual detectors in the system and the direction the telegram takes. The target address object 0 of the master station must be allocated to the actuators and to the extension objects 0. This means that the extensions are informed of the current switching status of the overall installation. This is necessary, because measuring the ambient brightness is only active with the object value switching = 0.



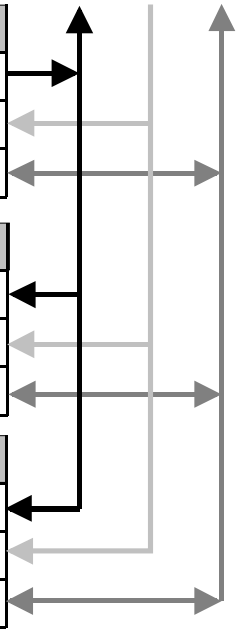
Obj	Function	Name	Groups
0	Switching	Output	1/1
1	Locking	Input	1/2 (1/6)
2	Mess. f. ext.	Input	1/3



Obj	Function	Name	Groups
0	Switching(st)	Output	1/1
1	Locking	Input	1/4 (1/6)
2	Mess.to.ma.	Output	1/3



Obj	Function	Name	Groups
0	Switching(st)	Output	1/1
1	Locking	Input	1/5 (1/6)
2	Mess.to ma.	Output	1/3



Locking objects: the locking objects 1 receive telegrams from the system. In the example, each detector can be locked separately, and all detectors can be locked jointly.

Movement objects: the movement objects of the individual detectors can both generate and receive telegrams. Movement telegrams from the extensions are received by the master station. If the master station is the first to detect a heat movement after the bus power is restored, a switching and a movement telegram are generated. The process is evaluated in the extensions as **Beginning of recognition** and serves to control the locking time.

Locking: we recommend that a locking time is only allocated to extensions if switched lights are installed in the recognition range. **Locking times should be avoided in master stations**, to guarantee delay-free evaluation of other extensions. Only if **all** extensions require delay times should the master station have a locking time set. The locking times of the extensions are then not required. On conclusion of the start-up, **we recommend that the corresponding line is reset**. This initialisation process prepares all sensors optimally for joint operations.

Application description:
The application "PIR master unit" enables several detectors to be combined to monitor extended recognition ranges. Heat movements in the recognition range of the master station and incoming movement messages from the extensions generate switching telegrams.
If recognition continues, transmission can be repeated cyclically. At the end of recognition a telegram is generated with a delay time of min. 10 seconds. An optional lock function deactivates the recognition function of the master station in dependence on an externally generated telegram.

Movement controller

PIR master unit A00201

Associations, group addresses and objects Parameter windows

No. of associations: 6
No. of group addresses: 6
No. of objects: 1 switch object, send (1 bit)
1 locking object, receive (1 bit)
1 movement object, receive (1 bit)

Evaluation of recognition	
Telegram at the beginning of the recognition	**ON**, OFF, no telegram
Switching depending on twilight value	No switching, 1, 2, 5, 10, **15**, 20, 50, 100, 200, 500, 1000 Lux, independent from brightness
Cyclic transmission?	YES, **NO**
Cyclic transmission, base	**1,0**; 2,1; 4,2; 8,4; 17; 34s 1,1; 2,2; 4,5; 9; 18; 36 min, 1,2 h
Cyclic transmission, factor	**10..**127
End of recognition	
Telegram at the end of recognition (default delay time = 10 seconds)	ON, **OFF,** No telegram
Additional transmission delay, base	130; 260; **520 ms** 1.0; 2.1; 4.2; 8.4; 17; 34 min 1,2 h
Additional transmission delay, factor	**0**..127
Lock time after telegram transmission, base	0.5 ms; 8 ms; **130 ms**; 2.1 s; 33 s
Lock time after telegram transmission, factor	0..**23**..255
Lock function	
Function of locking object	**0 = operation, 1 = locked** 1 = operation, 0 = locked
Telegram at the beginning of the lock operation	**ON**, OFF, no telegram
Telegram at the end of the lock operation	ON, **OFF**, no telegram
Complete parameter list under user level	High

Parameter description

Telegram at the beginning of the recognition: the application module works on the principle of PIR movement detectors. Along with the recognition of a heat movement by the master station, the reception of movement telegrams from any extension triggers a switching telegram. This is regarded as the **beginning of recognition**. The telegram value can be set to an ON (1) or OFF (0) switching command, or telegram transmission can be prevented for service purposes.

Switching depending on the twilight value: the electronics for the evaluation of the factors movement/heat follows a switch type for evaluation of the current ambient brightness. If the current value is **below** the parameter default, if movement is detected a telegram is sent in accordance with the parameter settings. Reception of movement telegrams from the extensions is processed independently of the master station's current status.

independently of the master station's current status.

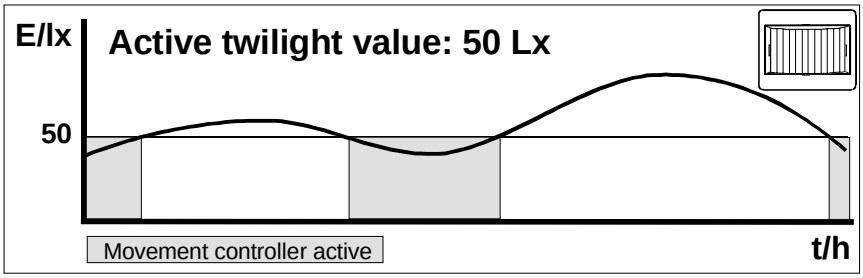


Fig.: Twilight value

The setting ***No switching*** prevents telegram triggering. In the setting ***Independent from brightness*** there is no internal link with the ambient brightness, the detector is constantly active. We recommend using DIN 5035, or Workshop Directive 7/3 for practical settings for the brightness. An extract from the directive can be seen under "Parameter description, single device".

Cyclic transmission: recognition is active if heat movements are registered in the total recognition range within the effective total delay time. The telegram (e.g. *ON*) can be repeated cyclically in this time (see fig. "Cyclical transmission" under "Single device").

Telegram at the end of the recognition: if heat movements in the total recognition range are no longer evaluated, on expiry of the standard time (10 seconds) the master station sends a telegram in accordance with the setting *Telegram at the end of the recognition* (e.g. *OFF*).
If a heat movement is detected within this period, or a movement telegram is received from any extension, the time function is reset and transmission (*OFF*) is postponed until after the end of recognition plus the delay time..

Additional transmission delay*:* the standard time can be extended with the parameter *Additional transmission delay "factor x base"* to an effective total delay time.
If the master station registers heat movements after expiry of the standard delay of 10 seconds, or if it receives a movement telegram from an extension in this time, it sends a telegram in accordance with the setting *Telegram at the start of the recognition* (e.g. *ON*). The counter is reset to the total delay time. (See fig. "Total delay and telegram cycle" under "Single unit")

Lock time after telegram transmission: a telegram in accordance with the setting is sent at the end of recognition plus the optional transmission delay, and the consumers in general are switched off. The sudden cooling down causes heat movements that can lead to switching on again.
The locking time prevents this, and the automatic function of the master station is not ready for operations until after this forced pause.
(See fig. " Example or locking time" under "Single device".)

Lock function: the automatic function of the detector can be deactivated with the help of the lock function. The lock function can be triggered by any sensor of data type 1 bit (e.g. timer), so that the corridor lighting can be switched on for a defined period independently of through traffic, for example.

Function of locking object:
telegrams with the group addresses linked to object 1 (lock) are **received.**
Standard setting *0 = operations, 1= locked* :

Example:
Locking the automatic function of the master station by activating the top rocker of a push button in the application "switching".
Setting *1 = operations, 0 = locked* :

Example:
Locking the automatic function of the master station by opening a reed contact in combination with a binary input (edge triggering 1 = close, 0 = open)

Telegram at the beginning/end of the lock operation: at the moment the lock function is

activated/deactivated it is possible to deliberately trigger the bus devices combined in the function group switching object (object 0). The main station **receives** the lock activation and sends a telegram on the bus if the corresponding parameters are set (ON/OFF).
Transmission of a subsequent telegram after activation of the lock function can be prevented by selecting the parameter *No telegram***.**

Complete parameter list under user level: the currently selected ETS user level is shown in the parameter window. Depending on the selected user level, critical parameters can be masked out. The user level can be set in the ETS under *Options*.

Start-up: when the bus voltage is restored, and after an application is loaded, the detector remains inactive for a period of 80 seconds!
The safety function can be neutralised by activating and deactivating the locking object during the locking period.

The application of the master and extensions function only functions with a complete master station (bus coupling unit and application module).

Application description: The application "PIR extension unit" enables several detectors to be combined to extend a recognition range. Extensions can only function in combination with a master station. Heat movements in the recognition range of an extension generate switching telegrams to the master station. If recognition continues, transmission is repeated cyclically every 9 seconds. The automatic function of extensions can be switched off through a specially configured locking object. Lock function and setting of the twilight value variable for each individual extension.

Associations, group addresses and objects Parameter window

No. of associations/group addresses: 6 / 6
No. of objects: 1 switch status object, send (1 bit)
1 locking object, receive (1 bit)
1 movement object, receive (1 bit)

Evaluation of recognition	
Switching depending on the twilight value	No switching, 1, 2, 5, 10, **15**, 20, 50, 100, 200, 500, 1000 Lux, independent from brightness
End of recognition	
Lock time after telegram transmission, base	0,5 ms; 8 ms; **130 ms**; 2,1 s; 33s
Lock time after telegram transmission, factor	0..**23**..255
Lock function	
Function of locking object	**0 = operations, 1 = locked,** 1 = operations, 0 = locked
Complete parameter list under user level	high

Switching depending on the twilight value: the electronics for evaluation of the factors "movement/heat" follow a switch type for the evaluation of the current ambient brightness. If the current value is **below** the parameter default, if movement is detected a telegram is sent and processed further independent of the status of the master station. The extension receives information on the current lighting situation through object 0 switching status. If the value of this object = 1, measuring the brightness is not activated. This prevents a negative effect of the switched lighting on he measured value. The setting ***No message*** prevents a telegram being triggered. In the setting ***Independent from brightness*** there is no internal link with the ambient brightness, the detector is always active.

Switching depending of brightness: we recommend using DIN 5035, or Workshop Directive 7/3 for practical settings for the brightness. An extract from the directive can be seen under "Parameter description, single device".

Lock time after telegram transmission: locking times prevent switching errors through thermodynamic processes during the cooling own phase of lights. Locking times must be set if the lights for switching are in the recognition range. If this is the case for all sensors, we recommend setting the locking time in the master station only. However, of the setting is not necessary for all sensors, the master station should not have a locking time. This enables telegram processing by sensors without a locking time to be carried out without delay. A switching telegram from the master station with the value 0 (OFF) starts the set locking time for all extensions linked in the system.

Lock function: the automatic function of the detector can be deactivated with the help of the lock function. The lock function can be triggered by any sensor of data type 1 bit (e.g. timer)..