

0701 CO Light, HVAC, Monitoring, Brightness 804212

Using the application program

Product range: Phys. sensors
 Product type: presence detector
 Manufacturer: Siemens
 Name: UP 258/21 presence detector
 Order No.: 5WG1 258-2AB21

Functional description

- One or two light outputs as required
- Switching or constant light control
- Presence output for controlling HVAC
- Monitoring output with cyclic message object
- Brightness output with cyclical output of brightness value in Lux
- Parallel connection of master-slave, master-master for gap-free cover of large surfaces
- Separate disabling function for light and presence
- Scene control with two scenes per lighting group
- Service remote control QuickSet (optional, from HTS High Technology Systems AG)
- User remote control clic (optional, from HTS High Technology Systems AG)

Switching or controlling two lighting groups

The UP258/21 presence detector switches or controls one or two lighting groups. Switch actuators are controlled in switching mode (ON/OFF). An ON telegram is sent when it gets dark **and** people are present. An OFF telegram is sent when it is light again **or** no people are present. Switching/dimming actuators or dimming actuators are controlled in control mode (constant light control). When it is dark and when people are present, the artificial light is controlled at a constant brightness according to the amount of daylight available. The second lighting group can be switched or controlled with an adjustable brightness difference.

Please also pay attention to the notes regarding the correct configuration and linking of switching/dimming actuators at the end of this description!

Communication objects

Nummer	Name	Funktion	Länge
0	Output light A	Switching	1 bit
1	Output light A	Brighter / Darker	4 bit
2	Output light A	Setting value	1 Byte
3	Output light A	Status value	1 Byte
4	Output light B	Switching	1 bit
9	Output presence	Switching	1 bit
10	Output presence	Disable / enable	1 bit
11	Parallel circuit operation	Trigger in-/output	1 bit
12	Input scene	Scene 1 / 2	1 bit
14	IR external channel 1	Brighter / Darker	4 bit
15	IR external channel 2	Switching	1 bit
16	IR external channel 2	Brighter / Darker	4 bit
17	IR external channel 1	Shutter Up / Down	1 bit
18	IR external channel 1	Slats Open / Closed	1 bit
19	IR external channel 2	Shutter Up / Down	1 bit
20	IR external channel 2	Slats Open / Closed	1 bit
21	Monitoring	Message	1 bit
22	Monitoring	confirmation	1 bit
23	Monitoring	sabotage, cyclical	1 bit
24	Monitoring	Enable	1 bit
25	Output brightness	Send Lux value	2 Byte

Note:

The view of the objects can be arranged individually i.e. this view can vary.

Obj	Object name	Function	Type	Flag
0	Output light A	Switch	1 bit	KSÜ
1	Output light A	brighter/ darker	4 bit	KSÜ
2	Output light A	Setting value	1 byte	KSÜ
3	Output light A	Status value	1 byte	KSÜA

For communication objects 0-3

Switching (ON/OFF): Each light switching output sends an ON telegram on detection of motion and insufficient brightness and triggers an OFF telegram at the end of the switch-off delay time or when there is sufficient brightness.

Constant light control: On detection of motion and insufficient brightness, each light output starts according to the configuration directly by sending value telegrams or an initial ON telegram.

At the end of the switch-off delay time or when there is sufficient brightness (controller already on minimum), an OFF telegram is sent.

Please also pay attention to the notes regarding the correct configuration and linking of switching/dimming actuators at the end at the end of this description!

4	Output light B	Switch	1 bit	KSÜ
5	Output light B	brighter/ darker	4 bit	KSÜ
6	Output light B	Setting value	1 byte	KSÜ
7	Output light B	Status value	1 byte	KSÜA

See communication objects 0-3

Application program description

March 2006

0701 CO Light, HVAC, Monitoring, Brightness 804212

Obj	Object name	Function	Type	Flag
8	Outputs light A,B	disable/ enable	1 bit	KS
The two light outputs are disabled together with an ON or OFF telegram. At the start of the disabling, the light outputs send any one of the following last telegrams: ON, OFF, no telegram. The light outputs are enabled using an ON or OFF telegram, analogous to the telegram for disabling. On enabling the detector always sends its current status or continues the constant light control.				
9	Output presence	Switch	1 bit	KÜ
If a presence is detected, the presence output sends (regardless of brightness, possibly after a delay as stipulated by parameterized ON delay) an ON or OFF telegram or no telegram at all. When using a delay time it is checked again before sending a telegram if presence is still detected. Otherwise the telegram will not be sent. At the end of the switch-off delay time, an ON or OFF telegram or no telegram at all is sent.				
10	Output presence	disable/ enable	1 bit	KS
The presence output is disabled with an ON or OFF telegram. At the start of the disabling, the presence output sends any one of the following last telegrams: ON, OFF, no telegram. The presence output is enabled with an ON or OFF telegram, analogous to the telegram for disabling. Once the enabling is complete, the detector sends its current status.				
11	Parallel circuit	Trigger in-/output	1 bit	KSÜ
(Only for master in parallel circuit and slave) The trigger in-/output is required for parallel connection of several presence detectors. Each detector sends a maximum of two ON telegrams per minutes as a trigger signal; these are evaluated by the masters. The interval between two telegrams can be set to up to 4 minutes. Note: It should be ensured that the selected interval between two trigger telegrams is always smaller than the switch-off delay times.				
12	Input scene	Scene 1,2	1 bit	KSÜ
Internal scenes: An OFF telegram to the scene input object displays scene 1, an ON telegram displays scene 2.				
12	Output scene	Scene 1,2	1 bit	KSÜ
Controlling a scene component: If scene key 1 on the user remote control clic is pressed, the scene output object sends an OFF telegram, while pressing scene key 2 triggers an ON telegram.				
13	IR external channel 1	Switch	1 bit	
Switching/dimming external: If the ▲/▼ keys on the user remote control clic are pressed briefly, an ON or OFF telegram is sent through the switching object.				
14	IR external channel 1	brighter/ darker	4 bit	
Switching/dimming external: If the ▲ key on the user remote control clic is held down, Dim brighter is sent, followed by Stop when the button is released. If the ▼ key is held down, Dim darker is sent, followed by Stop when the button is released.				

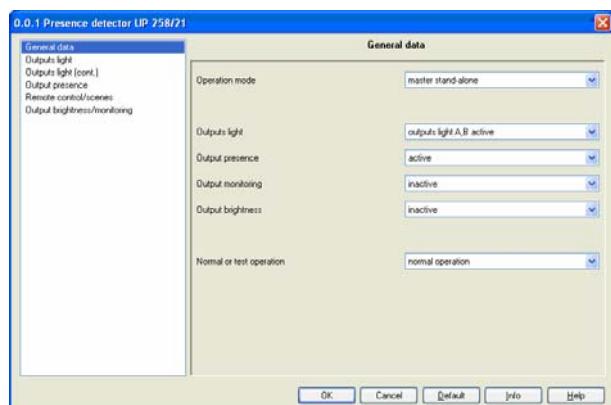
Obj	Object name	Function	Type	Flag
15	IR external channel 2	Switch	1 bit	
Switching/dimming external: If the ▲/▼ keys on the user remote control clic are pressed briefly, an ON or OFF telegram is sent through the switching object.				
16	IR external channel 2	brighter/ darker	4 bit	
Switching/dimming external: If the ▲ key on the user remote control clic is kept pressed, Dim brighter is sent, followed by Stop when the button is released. If the ▼ key is kept pressed, Dim darker is sent, followed by Stop when the button is released.				
17	IR external channel 1	Shutter Up/Down	1 bit	
Shutter external: If the ▲/▼ keys on the user remote control clic are held down, an ON or OFF telegram is sent through the Shutter Up/Down object.				
18	IR external channel 1	Slats Open/Closed	1 bit	
Shutter external: If the ▲/▼ keys on the user remote control clic are pressed briefly, an OFF or ON telegram is sent through the Slats Open / Closed objects.				
19	IR external channel 2	Shutter Up/Down	1 bit	
Shutter external: If the ▲/▼ keys on the user remote control clic are held down, an ON or OFF telegram is sent through the Shutter Up/Down object.				
20	IR external channel 2	Slats Open/Closed	1 bit	
Shutter external: If the ▲/▼ keys on the user remote control clic are pressed briefly, an OFF or ON telegram is sent through the Slats Open/Closed objects.				
21	Monitoring	Message	1 bit	KÜ
22	Monitoring	Confirmation	1 bit	KS
Message type: Cyclic with confirmation: The monitoring output sends an ON telegram when it detects motion. If the telegram is not confirmed within the parameterized "Waiting time for confirmation", the detector sends another ON telegram. This process is repeated until an ON or OFF telegram is received in the confirmation object. Note: Even disabling monitoring via object 24 will only be effective after confirming an active message. Until then telegrams will be sent cyclically.				
Message type: Switching (ON/OFF): The monitoring output sends an ON telegram when it detects motion, and an OFF telegram at the end of the switch-off delay time for monitoring.				
23	Monitoring	Sabotage, cyclical	1 bit	KÜ
To establish any deterioration of the detector, the sabotage object cyclically sends continuous OFF telegrams for as long as the detector is in operation.				
24	Monitoring	Enabling	1 bit	KS
With both message types, the monitoring output can be enabled with an ON telegram during operation or disabled with an OFF telegram.				

0701 CO Light, HVAC, Monitoring, Brightness 804212

Obj	Object name	Function	Type	Flag
25	Output brightness	Send Lux value	2 byte	KÜ
The brightness output sends the current brightness value excluding any reflection factor as an EIS5 telegram. The frequency of the telegrams is determined by the configured maximum cycle time and minimum change in brightness.				
26	Outputs light A/B	Switching brightness value	1 bit	KS
An ON telegram switches to the alternative brightness value, an OFF telegram uses the original brightness value as the setpoint value.				

Parameters

General information

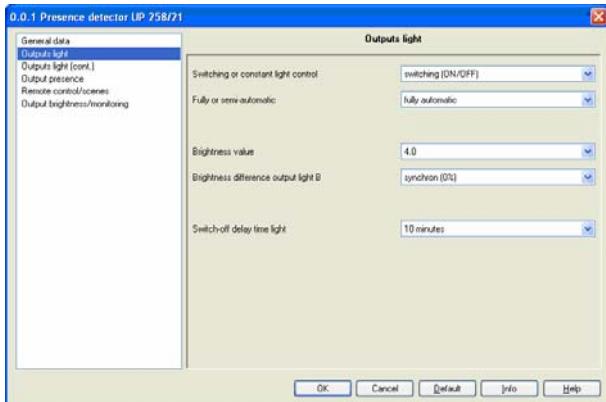


Parameters	Settings
Operating mode	Master in stand-alone circuit Master in parallel circuit Slave
Master in stand-alone circuit: presence detector works as autonomous device.	
Master in parallel circuit:	Additional detectors are connected to a "master in parallel circuit" as "slaves" as required to expand the sensing range, or several "masters in parallel circuit" are connected to each other.
Slave: Slaves are used to expand the sensing range. They only supply presence information to the master.	

Parameters	Settings
Cycle time parallel circuit operation	30 seconds 1 minute 2, 4 minutes
This parameter is only valid for a master in parallel circuit operation or in slave operation mode. In parallel operation mode every master and every slave sends 2 telegrams per minute (at the default setting of 30 seconds) as long as a person is within its detection area. The time span between two telegrams can be extended to up to 4 minutes.	
Outputs light	Inactive Output light A active Outputs light A, B active
Inactive: The presence detector is not used for the light controller. Output light A active: Presence detector switches or controls a lighting group according to the presence of persons and natural daylight. Output light A, B active: The presence detector switches or controls two lighting groups according to the presence of persons and natural daylight. A desired brightness value is defined, and the second lighting group is switched or controlled with a brightness difference to this.	
Output presence	Inactive Active
Inactive: The presence detector is not used to control HVAC applications. Active: Detector switches HVAC applications according to presence of persons and forwards the presence information to higher-level systems (regardless of brightness).	
Output monitoring	Inactive Active
Inactive: The presence detector is not used for room monitoring. Active: The presence detector supplies a presence signal with reduced sensitivity for room monitoring.	
Output brightness	Inactive Active
Inactive: The presence detector is not used as the brightness sensor. Active: Presence detector sends the measured room brightness (excluding reflection factor).	
Normal or test operation	Normal operation Test operation
Normal operation: The detector must be in normal operation for regular operation. Test operation: To check the sensing range and monitor the logic operations of the objects, the detector can be set to Test Operation. The switch-off delay times are shortened to 10 s. The detector switches independently of the daylight available. When switched to normal operation, the detector restarts.	

0701 CO Light, HVAC, Monitoring, Brightness 804212

Outputs light

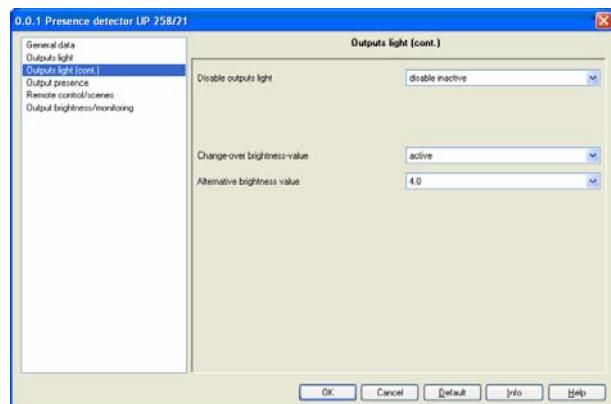


Parameters	Settings
Switching or constant light control	Switching (ON / OFF) Constant light control
Switching (ON / OFF): The light output sends ON telegram if motion is detected and the brightness is insufficient. An OFF telegram is sent at the end of the switch-off delay time or when the brightness is sufficient.	
Constant light control:	When motion is detected and the brightness is insufficient, the light output controls the lighting at the desired brightness value set and keeps it constant as the daylight fluctuates. At the end of the switch-off delay time (or when the brightness is sufficient, if the lighting has already been dimmed to the minimum), the lighting is turned off. A second light output can be controlled with a brightness offset.
If two outputs, light A, B, are active, both outputs are in controlling or switching operation together. A combination of controlling and switching operation is not possible.	
Fully or semi-automatic	Fully automatic Semi-automatic
Fully automatic: In "fully automatic" operating mode, the light output automatically switches or controls the lighting according to the presence of people and the ambient brightness.	
Semi-automatic: In "semi-automatic" operating mode, switching on must always be performed manually by means of pushbuttons or remote control. Turning off takes place automatically in both cases.	
<ul style="list-style-type: none"> • Switching: After manual switching on of the lighting, the user receives light for 30 minutes, at which point the detector checks the light requirement on the basis of the desired brightness value. • Constant light control: The detector adjusts the brightness to the set brightness value. 	

Parameters	Settings
Brightness value	1.0 ... 4.0 ... 8.0 none (only dependent on presence)
The brightness value can be adjusted within the range of 1.0 and 8.0. The value 4.0, which corresponds to a brightness of approx. 400 Lux, is preset, according to the reflection properties of the room (benchmarks, dependent on the room: 2 ~ 100 Lux, 3 ~ 200 Lux, 4 ~ 400 Lux, 5 ~ 800 Lux, 6 ~ 1600 Lux). In switching operation, the brightness value can be deactivated by means of the setting "none (only dependent on presence)". The service remote control QuickSet plus helps with setting the brightness value taking into account the reflection factor.	
Brightness difference	- 60 % ... synchronous 0 % ... +120 %
The brightness difference sets the different light requirement of the lighting group B compared to lighting group A:	
<ul style="list-style-type: none"> • A positive value means that less daylight is available in the area of lighting group B (more artificial light is required). • Synchronous means that the two lighting groups are switched or controlled uniformly. • A negative value means that more daylight is available in the area of lighting group B (less artificial light is required). 	
Switch-off delay time light	30 seconds ... 20 minutes
The switch-off delay time adapts itself to user behaviour with self-learning capacity. It can be autonomously increased to max. 15 min. or reduced back to the set minimum time. The switch-off delay time does not alter and learn itself if the setting is less than 2 min. or more than 15 min. The switch-off delay time applies to both light outputs together.	
Standby time	Inactive 30 seconds ... 60 minutes Continuously on
In controlling operation, an activated standby time has the effect of dimming both lighting groups to a minimum brightness at the end of the switch-off delay time. The standby time can be adjusted within a range of 30 s and 60 min.	
If standby is "continuously on", the lighting remains permanently on standby. If the room brightness increases above the setpoint value, the lighting switches off. If the room brightness falls below the setpoint value, the lighting automatically switches back to standby without the presence of any person. This ensures a minimum lighting during darkness.	

0701 CO Light, HVAC, Monitoring, Brightness 804212

Outputs light (cont.)



Parameters	Settings
Switching brightness value	Inactive Active
Alternative brightness value	1.0 ... 4.0 ... 8.0 none [depending on presence only]

If switching of the brightness value is activated, it is possible to switch between two desired brightness values during operation by means of a telegram. An ON telegram to the relevant object switches to the alternative desired brightness value, an OFF telegram switches back to the original value. This applies both to switching and to constant light control. It is therefore possible to implement a day and night mode with two different brightness levels.

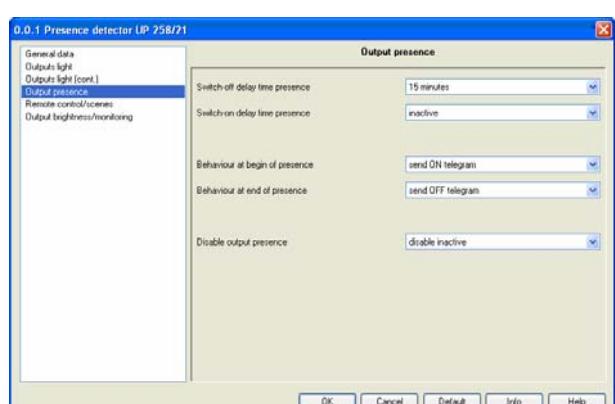
Parameters	Settings
Disable outputs light	Disable inactive Disable active with ON telegram Disable active with OFF telegram
Telegram at begin of disable	send ON telegram send OFF telegram do not send any telegrams
Behaviour of constant light control	Starting with value telegram start with ON telegram

The two light outputs are disabled together, either with an ON or OFF telegram as desired. At the start of the disabling, the light outputs can send one of the following last telegrams as required: ON, OFF, no telegram. All telegrams are suppressed for the duration of the disabling. The light outputs are enabled by means of an ON or OFF telegram, analogously to the telegram for disabling. After enabling, the detector sends the current status or continues with constant light control.

The presence output is not affected by the disabling of the light outputs. It has its own disabling function. The monitoring and brightness outputs are not affected by the disabling of the light outputs.

Parameters	Settings
Switch-off delay time presence	15 minutes
Switch-on delay time presence	inactive
Behaviour at begin of presence	send ON telegram
Behaviour at end of presence	send OFF telegram
Disable output presence	disable inactive

Output presence



The switching performance is only affected by the presence of a person. The presence output functions according to brightness.

If a person is present, an ON or OFF telegram or no telegram at all is sent as required. At the end of the switch-off delay time, an ON or OFF telegram or no telegram at all is sent as required.

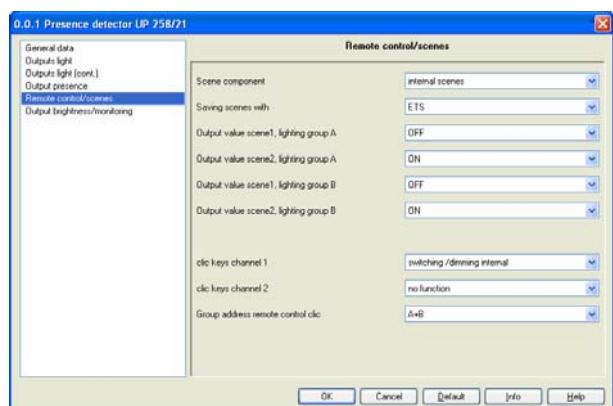
Parameters	Settings
Switch-off delay time presence	30 s ... 15 min. ... 120 min.
Switch-on delay time presence	Inactive 30 s ... 30 min.

The presence switch-off delay time can be adjusted between 30 s and 120 min. It is restarted following each motion. The presence switch-on delay time can be adjusted between 30 s and 30 min. When using a delay time it is checked again before sending a telegram if presence is still detected. Otherwise the telegram will not be sent.

0701 CO Light, HVAC, Monitoring, Brightness 804212

Parameters	Settings
Behaviour at begin of presence	send ON telegram send OFF telegram do not send any telegrams
	When presence is detected an ON or an OFF telegram or alternatively no telegram can be sent.
Behaviour at end of presence	send ON telegram send OFF telegram do not send any telegrams
	At the end of the switch-off delay time an ON or an OFF telegram or alternatively no telegram can be sent.
Disable output presence	Disable inactive Disable active with ON telegram Disable active with OFF telegram
Telegram at begin of disable	send ON telegram send OFF telegram do not send any telegrams
	The presence output is disabled with an ON or OFF telegram as required. At the start of the disabling, the presence output can send one of the following last telegrams as required: ON, OFF, no telegram. All telegrams are suppressed for the duration of the disabling. The light outputs are enabled by means of an ON or OFF telegram, analogously to the telegram for disabling. After enabling, the detector sends the current status. The light, monitoring and brightness outputs are not affected by the disabling of the presence output.

Remote control/scenes



Parameters	Settings
Scene component	Controlling a scene component Internal scenes
	It is possible to specify for both lighting groups individually the values to which they dim when scene 1 or scene 2 is selected. In addition, the scenes can be recalled using the user remote control clic (optional). The scenes are saved using the ETS or with clic.
	Instead of the internal scene component, an external scene module can be controlled. The user remote control clic (optional) is required for this. If scene key 1 on the clic is pressed an OFF telegram is send, an ON telegram is triggered if scene key 2 is pressed.
Saving scenes with	ETS clic remote control
	This parameter specifies how the scenes are saved.
Output value scene 1, lighting group A	Off 10 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100%
Output value scene 2, lighting group A	Off 10 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100%
Output value scene 1, lighting group B	Off 10 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100%
Output value scene 2, lighting group B	Off 10 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100%

These parameters are only visible if the scenes are saved with the ETS. The values which are sent on the bus when the scene is recalled are input here.

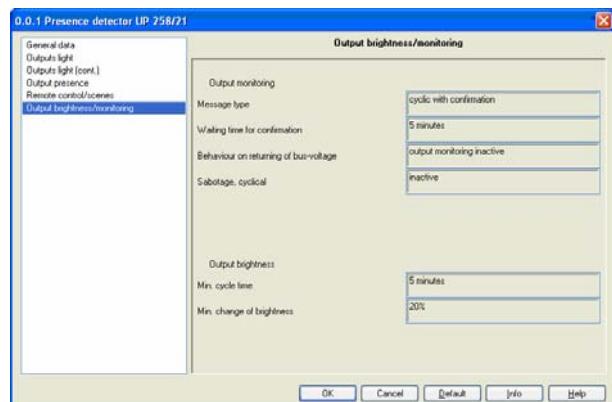
clic keys channel 1	No function Switching/dimming internal Switching/dimming external Shutter external
clic keys channel 2	No function Switching/dimming internal Switching/dimming external Shutter external
	Switching/dimming internal: Pressing briefly on the left-hand row of clic keys switches the output for light A on or off. If the key is kept pressed, the lighting dims for as long as the key is kept pressed. If both light outputs A and B are active, the right-hand row of keys sets the output for light B analogously. Switching/dimming external: Pressing briefly on the respective row of clic keys switches external consumers on or off (channel 1 or 2). If the key is kept pressed, external consumers are dimmed for as long as the key is pressed. Shutter external: Pressing briefly on the respective row of clic keys moves shutters up or down. If the key is kept pressed, the slats are opened or closed.

0701 CO Light, HVAC, Monitoring, Brightness 804212

Parameters	Settings
Group address remote control clic	A + B A B C + D C D E
By choosing the group address (setting of channel selector switch on the remote control clic), adjacent detectors which are controlled with the user remote control clic can be separated from each other.	

Output brightness / monitoring

The switching behaviour depends on presence and detects reliably the presence of persons. The output monitoring works independent of brightness.



Output monitoring

Parameters	Settings
Message type	cyclic with confirmation switching (ON/OFF)
Cyclic with confirmation: The monitoring output sends ON telegram when it detects motion. It repeats the ON telegram cyclically until confirmation is received.	
switching (ON/OFF): The output monitoring sends an ON telegram when detecting a movement, at the end of switch-off delay time monitoring an OFF telegram. The OFF telegram can be suppressed by parameter.	

Waiting time for confirmation	30 seconds 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 12 / 15 / 20 / 25 / 30 minutes
This parameter defines the time between cyclically sending the ON telegram until confirmation is received.	

Parameters	Settings
Behaviour at start / end of presence	send ON and OFF telegrams send ON telegram only
This parameter defines whether the output monitoring shall send an OFF telegram at the end of presence.	
Switch-off delay time monitoring	30 seconds 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 12 / 15 / 20 / 25 / 30 minutes
This parameter defines the time between the last detection of movement and the sending of the OFF telegram.	
Behaviour on returning of bus-voltage	output monitoring inactive output monitoring active
The behaviour on returning of bus-voltage defines whether the monitoring output is enabled or disabled on a restart following a bus voltage failure.	
Sabotage, cyclical	inactive active
The monitoring output cyclically sends OFF telegrams to display an impermissible deterioration of the detector or a bus voltage interruption.	
Cycle time sabotage	30 seconds 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 12 / 15 / 20 / 25 / 30 minutes
This parameter defines the time between two cyclically sent OFF telegrams.	

Output brightness

Parameters	Settings
Max. cycle time	30 seconds 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 12 / 15 / 20 / 25 / 30 minutes
The maximum interval between two telegrams can be adjusted within a range of 30 s and 30 min. The minimum interval is 15 s	
Min. change of brightness	10 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90%
The minimum change of brightness before a telegram is sent can be adjusted within a range of 10% and 90%.	

0701 CO Light, HVAC, Monitoring, Brightness 804212**Recommended parameter settings for switching/dimming actuators:**

Parameters	Settings
Duration for sweeping the dimming range (0%-100%) when setting value	10 seconds
Jump or dimm to 8-bit dimming value	Dimm
Accept dimm value immediately or only on On	Accept immediately
Switching off possible via dimming	No
Switching on possible via dimming	Yes
Minimum dimming value	Minimum value possible
Maximum dimming value	Maximum value possible
Jump or dimm to off (1 bit)	Jump
Sending of dimming status object	Using read request only

Notes:

- The parameter names may vary depending of the model of the dimming actuator or switching/dimming actuator.
- It is not necessary for the actuator to automatically send the dimming value object. The presence detector UP 258/21 requests this information itself.

Example for connection of communication objects of switching/dimming actuators and presence detector UP 258/21:

a) For switching/dimming actuators without separate dimming status object:

switching/dimming actuator		
object	group address	object flags
Switch On/Off / Status	10/0/1	C W T U
Dimm brighter/darker	10/0/2	C W T U
8-bit dimm value	10/0/3	C W T U
	10/0/7	C R T U

Presence detector UP 258/21	
object	group address
Output light A/B switch	10/0/1
Output light A/B brighter/darker	10/0/2
Output light A/B setting value	10/0/3
Output light A/B status value	10/0/7

Notes:

- The object "8-bit dimm value" must be readable, possibly the read flag must be set manually.

- The object via which the presence detectors requests the 8-bit status has to be set as sending in the actuator.
- If more than one actuator is connected to the output light of the presence detector all actuators have to be configured identically
exception: The read flag must only be set in one actuator per lighting group (group speaker)

b) For switching/dimming actuators with separate dimming status object:

switching/dimming actuator		
object	group address	object flags
Switch On/Off / Status	10/0/1	C W T U
Dimm brighter/darker	10/0/2	C W T U
8-bit dimm value	10/0/3	C W T U
8-bit dimm status	10/0/7	C R T U

Presence detector UP 258/21

object	group address
Output light A/B switch	10/0/1
Output light A/B brighter/darker	10/0/2
Output light A/B setting value	10/0/3
Output light A/B status value	10/0/7

Note:

- If more than one actuator is connected to the output light of the presence detector all actuators have to be configured identically
exception: The Output light A/B status value object is only connected with one actuator per lighting group (group speaker)