20 A3 Switching / Dimming actuator 905303

Use of the application program

Product family:	Lighting
Product type:	Dimmer
Manufacturer:	Siemens
Name:	Switching/dimming actuator N 526/02
Order no.:	5WG1 526-1AB02

Functional description

Inputs/outputs

The switching/dimming actuator N 526/02 is a DIN rail mounted device in N-system dimensions which controls dimmable electronic ballasts (EVG Dynamic) for fluorescent lamps via three 1-10 V DC control outputs. It also has three switch contacts with a load of 6 A each for switching the AC 230 V supply for three (groups of) luminaires on and off directly.

Three brightness sensors can be directly connected to the switching/dimming actuator N 526/02 for measuring the brightness and for constant light control. The length of the installation cable between a brightness sensor and the N 526/02 may not exceed 100 m. The sensors are connected via three cores of an installation cable JY(St)Y 2x2x0.8, whereby one core is used as a power supply for the sensor electronics.

Operation modes of an actuator channel

The application program 20 A3 Switching / Dimming actuator 905303 should only be used on a switching/dimming actuator N 526/02. It enables an actuator channel to be used as a standard switching/dimming actuator for ON/OFF, dimming and setting values, as a "master" for constant light control or as a "slave" for constant light control. When the actuator channel is used as a master or slave for constant light control, the functions of ON/OFF, dimming and setting values are also available. A brightness sensor must be assigned to a master for constant light control. The master directly influences its allocated output and can transfer its "master dimming value" internally to a slave channel or send it to other actuators via the bus. A slave channel does not have a brightness controller. It only dims its connected luminaires to a value that can be adjusted by an offset value compared to the master dimming value.

Comfort mode on/off

The constant light control can be switched on or off separately for each channel via its object "Comfort mode On/Off". This should either be carried out via a presence switch (e.g. via the integrated presence switch in the EIB room thermostat UP 231/2) which is pressed each time someone enters and leaves the room or via a presence detector which has been installed in the room or via a gateway to the access control system. If a command "Comfort mode = ON" is received, the object "Automatic mode = ON" is automatically set for this actuator channel. If the room brightness level lies below the setpoint for constant light control, the relevant actuator channel is automatically switched on and the lighting is automatically dimmed. If it is sufficiently bright in the room, the lighting is only switched on automatically if the room brightness drops below the setpoint for constant light control. If a command "Comfort mode = OFF" is received (e.g. by pressing the presence switch when leaving the room), the automatic mode and the room lighting are also automatically switched off i.e. it is not necessary to press the light switch to switch the lighting off in the room.

Automatic mode on/off

The constant light control function is only active if it is switched on via the object "Comfort mode On/Off" **and** the object "Automatic mode = ON" has been set. If the comfort mode has been switched on but the automatic mode is disabled, the constant light control is not active. This operating mode ("Automatic mode = OFF" corresponds to "Manual mode = ON") enables the occupant of the room to override the constant light control over a certain period so that he can work at a higher or lower brightness level than the preselected setpoint for constant light control. It is therefore recommended to install a push button with an LED for status display in addition to the bus push button which is used for manual switching and dimming of the lighting at the workstation. This additional button is used specifically for switching the automatic mode on/off. Each time the lighting at the workstation is switched or dimmed manually via the push button installed in the room, the automatic mode is immediately switched off. If you wish to avoid using a special push button per channel to switch the automatic mode on/off, the object "Presence On/Off" of the presence switch should be linked with both the "Comfort mode" and "Automatic mode" objects of the N 526/02.

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Unused "Comfort mode" or "Automatic mode" objects

If the object "Comfort mode On/Off" of an actuator channel is not linked with a group address, the comfort mode is continually set to ON. The lighting in the room or at the workstation must then be switched on and off by the occupant via the corresponding bus push buttons, whereby the operating mode automatically switches to manual mode ("Automatic mode = OFF"). If you wish to activate the constant light control function, an additional push button is required for switching the automatic mode on and off.

If the object "Automatic mode On/Off" of an actuator channel is not used, it is important to note that each time the room/workstation lighting is switched or dimmed manually, the operating mode of the respective channel automatically switches to "Automatic mode = OFF". If the occupant wishes to activate the constant light control again at a later date, he must first switch the comfort mode off via the presence switch and then switch it on again as the automatic mode is only activated by a transition from "Comfort mode = OFF" to "Comfort mode = ON". If the comfort mode is switched on and off via a presence detector or a gateway to an access control system, a bus push button or rocker of a multiple push button must be provided to switch the automatic mode on and off manually.

Night mode (cleaning light)

If "Night mode = ON", the room lighting can only be switched on for a limited period (cleaning light). It can thus be selected via a parameter whether it is possible to override the limited activation period for the room lighting while the setting remains at "Comfort mode = ON" (i.e. the lighting remains switched on and is not switched off once the set operating time has elapsed) or whether the time limit takes priority over the night mode. If the lighting is switched on when "Night mode = ON" via the push button for switching and dimming the room lighting, a time limit is always imposed.

At the end of the operating period, the room lighting is first set to 50% of the previous value and then dimmed down completely and switched off within a minute. The room occupant can thus switch the lighting on again with a time limit by pressing the light switch before the lighting is switched off again according to the set operating time.

Power supply of the actuator

The power supply for the electronics of the switching/dimming actuator is carried out independently of the EIB bus voltage via an integrated power supply unit (connected internally to terminals L3 and N). It is therefore possible to switch the fluorescent lamps on and off independently of the EIB via the buttons on the front plate of the actuator, if the EIB has not yet been installed.

Operation via local push buttons

The switching/dimming actuator N 526/02 has a push button and an LED per channel on its front plate. The relevant channel is switched on and off by pressing the push button briefly (TOGGLE function). The switching state of the respective actuator output is displayed via the relevant LED. The actuator channel is set to "Automatic mode = OFF" by pressing a local push button. All the status objects that have been modified by this change are updated and sent via the bus if required. Switching on/off locally functions even when no application programs have been loaded.

Behaviour on bus voltage failure and bus or mains voltage recovery

The behaviour on bus voltage failure can be set for all the actuator channels together via a parameter ("no action", "switching on", "switching off"). If "no action" is selected, the current operating state and status remain unchanged on bus voltage failure. If "switching on" or "switching off" have been set, all the channels are switched accordingly. In all three cases, the last operating state and status before voltage failure are stored in the actuator.

It is also possible to set the behaviour on bus or mains voltage recovery for all the actuator channels together via a further parameter ("as before power or bus voltage failure", "switching on" "switching off"). If "as before power or bus voltage failure" is set, the operating state and status of all the channels which has been stored in the actuator is restored on bus or mains voltage recovery.

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Calibration of a brightness sensor

The constant light control function operates on the basis of a precalibrated sensor. A brightness sensor can also be calibrated in order to achieve the most accurate constant light control possible or to adapt the measurement at a setpoint distance of 165 cm between the brightness sensor and the work surface. A lux meter is required for this which is positioned on the work surface underneath the brightness sensor. The blinds must then be closed and the room lighting dimmed so that the lux meter indicates a brightness value which corresponds to the set brightness setpoint value. Push button A (B,C) should be pressed > 6 seconds in order to calibrate brightness sensor A (B,C). The setpoint from master channel A (B,C) is thus used independently of the assignment of the brightness sensor to the individual actuator channels. If the master channel is not set to the master with the same name (the parameter "Setpoint in Lux (250-1200)" is inactive), the sensor is calibrated to 600 lux. If the calibration is successful, the lamp is switched off and switched on again after approx. 2 seconds. If the calibration cannot take place due to the environmental conditions, the lamp remains switched off and the LED for the channel which is to be calibrated flashes for approx. 5 seconds. In this case, the proportion of daylight or artificial light in the room lighting should be increased and the calibration should be restarted. If the calibration is rejected and the LED indicates by flashing that an invalid application program has been loaded, the sensor has either been set to "not active" in the parameters or the bus voltage is not available.

The calibration process can also be started via the EIB. Communication objects 21 to 23 are used which normally transmit the measured brightness values. To start the calibration, the value "1" must first be sent in EIS 5 format (16 bit floating point value) via the EIB to the communication object which normally send the brightness value to the calibrated channel. The sending of the value "1" can be carried out in test mode with the help of ETS. In the same way that the start of the calibration is indicated via a local push button, the status LED of the respective actuator channel indicates whether the calibration has been carried out correctly.

Maximum number of group addresses: 35
Maximum number of associations: 47

Communication objects

Switching and dimming

Obj	Object name	Function	Type	Flags
3, 4, 5	Night mode, Channel A, B, C	On / Off	1 Bit	CW

The operating mode "Night mode" for the respective channel can be switched on or off with this object via the bus. It is possible to select via a parameter whether the night mode is switched via a 1 bit or a 1 byte object. The telegram can thus be sent for example by a push button, a timer or a higher-order building automation system. If a logical "1" is received at a 1 bit object or a third bit is set for a 1 byte object (0000 0100), the respective channel switches from day mode to night mode. It can be set via the parameter "Priority of night operation mode" whether the night mode is also active when the comfort mode has been switched on.

In the operating mode "Night mode", the lighting cannot be switched on continuously as it has a time limit (e.g. 30 minutes) (cleaning light). Once the set operating time has elapsed, the lighting is first set to 50% of the previous value for safety reasons and then dimmed down completely and switched off within a minute. The end of the operating time can thus be detected and the lighting can be switched on for a further 30 minutes for example by pressing the light switch again. If the object "Night mode" is not used, it is possible to switch the lighting on and off continuously outside the comfort mode.

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Obj	Object name	Function	Type	Flags
6, 7, 8	Dimming On / Off, Channel A, B, C	On / Off	1 Bit	CW
The switch outputs of channels A to C are addressed via these objects. A corresponding telegram is triggered for example by the activation of a bus push button. The switching state of a channel can also be queried via these objects. The transmit flag must be set to enable the object value to be sent. The read flag must be set to read out the object value. If the transmit flag has been set, the status is sent on the bus via this object. Caution: A unique address must be assigned in order to avoid any effects.				
9, 10, 11	Dimming, Channel A, B, C	Brighter / Darker	4 Bit	CW
The telegrams for the relative dimming of channels A to C are received via these objects. A corresponding telegram is triggered for example by pressing a bus push button.				
12, 13, 14	Value, Channel A, B, C	8-bit Value	1 Byte	CW
The telegrams with the dimming value for channels A to C are received via these objects. A corresponding telegram is triggered for example by pressing a bus or scene push button. If the received dimming value lies below the minimum dimming value, the current dimming value remains unchanged.				
18, 19, 20	Status, Channel A, B, C	8-bit Value	1 Byte	CRT
The current dimming value (actual dimming value) of the corresponding channel can be sent or queried via the group address that is linked to this object.				

Constant brightness adjustment, master

Phys.Addr. no.	Program Object name	Function	Type
01.01.001	20 A3 Switching / Dimming actuator 905303		
0	Comfort mode, Channel A	On / Off	1 Bit
1	Comfort mode, Channel B	On / Off	1 Bit
2	Comfort mode, Channel C	On / Off	1 Bit
3	Night mode, Channel A	On / Off	1 Bit
4	Night mode, Channel B	On / Off	1 Bit
5	Night mode, Channel C	On / Off	1 Bit
6	Dimming On / Off, Channel A	On / Off	1 Bit
7	Dimming On / Off, Channel B	On / Off	1 Bit
8	Dimming On / Off, Channel C	On / Off	1 Bit
9	Dimming, Channel A	Brighter / Darker	4 Bit
10	Dimming, Channel B	Brighter / Darker	4 Bit
11	Dimming, Channel C	Brighter / Darker	4 Bit
12	Value, Channel A	8-bit Value	1 Byte
13	Value, Channel B	8-bit Value	1 Byte
14	Value, Channel C	8-bit Value	1 Byte
15	Automatic mode, Channel A	On / Off	1 Bit
16	Automatic mode, Channel B	On / Off	1 Bit
17	Automatic mode, Channel C	On / Off	1 Bit
18	Status, Channel A	8-bit Value	1 Byte
19	Status, Channel B	8-bit Value	1 Byte
20	Status, Channel C	8-bit Value	1 Byte
21	Brightness, Channel A	Lux value	2 Byte
22	Brightness, Channel B	Lux value	2 Byte
23	Brightness, Channel C	Lux value	2 Byte
24	Master dimming value, Channel A	8-bit Value	1 Byte
25	Master dimming value, Channel B	8-bit Value	1 Byte
26	Master dimming value, Channel C	8-bit Value	1 Byte

Obj	Object name	Function	Type	Flags
0, 1, 2	Comfort mode, Channel A, B, C	On / Off	1 Bit	CW
The operating mode "Comfort mode" is switched on or off for the respective channel with this object via the bus. This is normally carried out when someone enters or leaves a room or building i.e. the comfort mode is switched on when people are present in the room. If the comfort mode of the respective channel is activated, the automatic mode is switched on as a result. If "Automatic mode = ON", the constant light control is activated and the lighting is automatically switched on if required. If the comfort mode is switched off because the room is now vacant, the automatic mode and thus the constant light control are switched off as well as the room lighting.				

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Obj	Object name	Function	Type	Flags
6, 7, 8	Dimming On / Off, Channel A, B, C	On / Off	1 Bit	CW

The switch outputs of channels A to C are addressed via these objects. A corresponding telegram is triggered for example by the activation of a bus push button. As the occupant of the room wishes to select a different light setting in this case than the setting currently selected by the constant light control function, the lighting control automatically switches from automatic to manual mode. The constant light control is thus disabled for the respective channel. The switching state of a channel can also be queried via these objects. The transmit flag must be set to enable the object value to be sent. If the transmit flag has been set, the status is sent on the bus via this object.

Caution: A unique address must be assigned in order to avoid any adverse effects.

The read flag must be set to read out the object value.

Obj	Object name	Function	Type	Flags
9, 10, 11	Dimming, Channel A, B, C	Brighter / Darker	4 Bit	CW

The telegrams for the relative dimming of channels A to C are received via these objects. A corresponding telegram is triggered for example by pressing a bus push button. As the occupant of the room wishes to dim the lighting differently in this case than the setting currently selected by the constant light control function, the lighting control automatically switches from automatic to manual mode. The constant light control is thus disabled for the respective channel.

Obj	Object name	Function	Type	Flags
12, 13, 14	Value, Channel A, B, C	8-bit Value	1 Byte	CWU

The telegrams with the dimming value for channels A to C are received via these objects. A corresponding telegram is triggered for example by pressing a bus or scene push button. As the occupant of the room wishes to dim the lighting differently in this case than the setting currently selected by the constant light control function, the lighting control automatically switches from automatic to manual mode. The constant light control is thus disabled for the respective channel. If the received dimming value lies below the minimum dimming value, the current dimming value remains unchanged. In this event, manual mode is not selected.

Obj	Object name	Function	Type	Flags
15, 16, 17	Automatic mode, Channel A, B, C	On / Off	1 Bit	CRW

The corresponding channel can switch between automatic and manual mode ("Automatic mode = OFF") via this object.

The object value of these objects is updated when the operating mode of the channel changes (automatic or manual mode) and can be sent or read out via the bus i.e. it can be used to display the current operating mode.

Object values: 0 = manual mode (without constant light control)
1 = automatic mode with activated constant light control.

If the transmit flag has been set, the status is sent on the bus via this object.

Caution: A unique group address must be assigned in order to avoid any adverse effects.

Obj	Object name	Function	Type	Flags
21, 22, 23	Brightness, Channel A, B, C	Lux value	2 Byte	CRW

The common brightness value can be sent or queried via the bus with the group address that is linked to this object. If the value "1" is received via this object (EIS 5), a calibration of the sensor channel is triggered.

Obj	Object name	Function	Type	Flags
24, 25, 26	Master dimming value, Channel A, B, C	8-bit Value	1 Byte	CRT

The master dimming value can be sent or queried via the bus with the group address that is linked to this object.

Note:
See the explanations for the "Switching and dimming" communication objects for more information about any of the objects that are not listed above.

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Constant brightness adjustment, slave

Phys.Addr.		Program		
	no.	Object name	Function	Type
01.01.001		20 A3 Switching / Dimming actuator 905303		
	0	Comfort mode, Channel A	On / Off	1 Bit
	1	Comfort mode, Channel B	On / Off	1 Bit
	2	Comfort mode, Channel C	On / Off	1 Bit
	3	Night mode, Channel A	On / Off	1 Bit
	4	Night mode, Channel B	On / Off	1 Bit
	5	Night mode, Channel C	On / Off	1 Bit
	6	Dimming On / Off, Channel A	On / Off	1 Bit
	7	Dimming On / Off, Channel B	On / Off	1 Bit
	8	Dimming On / Off, Channel C	On / Off	1 Bit
	9	Dimming, Channel A	Brighter / Darker	4 Bit
	10	Dimming, Channel B	Brighter / Darker	4 Bit
	11	Dimming, Channel C	Brighter / Darker	4 Bit
	12	Value, Channel A	8-bit Value	1 Byte
	13	Value, Channel B	8-bit Value	1 Byte
	14	Value, Channel C	8-bit Value	1 Byte
	15	Automatic mode, Channel A	On / Off	1 Bit
	16	Automatic mode, Channel B	On / Off	1 Bit
	17	Automatic mode, Channel C	On / Off	1 Bit
	18	Status, Channel A	8-bit Value	1 Byte
	19	Status, Channel B	8-bit Value	1 Byte
	20	Status, Channel C	8-bit Value	1 Byte
	21	Brightness, Channel A	Lux value	2 Byte
	22	Brightness, Channel B	Lux value	2 Byte
	23	Brightness, Channel C	Lux value	2 Byte
	24	Value slave operation mode, Channel A	8-bit Value	1 Byte
	25	Value slave operation mode, Channel B	8-bit Value	1 Byte
	26	Value slave operation mode, Channel C	8-bit Value	1 Byte

Obj	Object name	Function	Type	Flags
24, 25, 26,	Value slave operation mode, Channel A, B, C	8-bit Value	1 Byte	CW Receive
The dimming value sent by the master is received by the slave via the group address that is linked to this object. The object is not displayed if the master dimming value is only transferred to the slave internally.				

Note:
See the explanations for the "Constant brightness adjustment master" or "Switching and dimming" communication objects for more information about any of the objects that are not listed above.

Parameters: General

Note:
The settings written in **bold** correspond to the factory settings (default values).

Parameters	Settings
Type (device dependent offset down/up)	-A - (0/0) -B - (0/1) **-C - (1/0) Siemens EVG** -D - (0/3) -E - (0/4)
This parameter is used to adapt the output voltage of the switching/dimming actuator to the control range of the connected electronic ballasts (offset). The Siemens EVG has for example a control range of 1-10 V (-C- (1/0)). This range of 9 V is subdivided into 255 brightness values. The lighting can now be dimmed within this range from 0 to 100%. This produces the following: Type -A- Send "1": 0 V output voltage = min. brightness Send "255": 10 V output voltage = max. brightness Type -B- Send "1": 0 V output voltage = min. brightness Send "255": 9 V output voltage = max. brightness Type -C- Send "1": 1 V output voltage = min. brightness Send "255": 10 V output voltage = max. brightness Type -D- Send "1": 0 V output voltage = min. brightness Send "255": 7 V output voltage = max. brightness Type -E- Send "1": 0 V output voltage = min. brightness Send "255": 6 V output voltage = max. brightness **Note:** This parameter thus specifies the conversion of the setpoint values (0-255) to the usable output voltage range of the EVG types. The minimum output voltage is approx. 0.7 V dependent on the circuit.	

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Parameters	Settings
Behaviour on bus voltage failure	**no action** switching on switching off
The common behaviour of all the actuator outputs (relay contacts and control voltage) on bus voltage failure can be set via this parameter. "no action": On bus voltage failure, all the switch outputs maintain their current switching state and the control voltage outputs retain their current voltage value. "switching on": On bus voltage failure, the outputs (relay contacts) are closed and the control voltage is set to 100% (dependent on the EVG type). "switching off": On bus voltage failure, the outputs (relay contacts) are opened and the control voltage is set to "Control voltage in Off state". After a mains or bus voltage failure, the last operating states and dimming values of the channels are stored. It is thus possible to restore the states after mains or bus voltage recovery. It is only possible to store the operating states and dimming values if a valid application program has been loaded.	
Behaviour on power or bus voltage recovery	**as before power or bus voltage failure** switching on switching off
The common behaviour of all the actuator outputs (relay contacts and control voltage) on mains or bus voltage recovery can be set via this parameter. "as before power or bus voltage failure": The final operating state before the mains or bus voltage failure is restored. "switching on": On mains/bus voltage recovery, the lighting is switched on (100%). "switching off": On mains/bus voltage recovery, the lighting is switched off (OFF state, 0%).	
Control voltage in Off state	0% 100% **background brightness**
The OFF state for the control voltage can be defined via this parameter. Depending on the type of electronic ballast, various settings for the control voltage are available. The following applies: "0%": The control voltage is 0% in the OFF state "100%": The control voltage is 100% in the OFF state "background brightness": Switches off with the minimum brightness (dependent on the EVG type selected).	
Switch-on time during night mode in minutes (5-60)	**30**
If the lighting is switched on while the night mode is active, the lighting is first dimmed to 50% of the previous value once the period set here has elapsed. It is then dimmed down completely and switched off within a minute (cleaning light).	

Parameters	Settings
Switching On/Off of operation mode via	**1 Bit Object** 8 Bit Object
This parameter determines whether the night mode is switched on and off via a 1 bit object or via an 8 bit object. This object is also used to change the operating mode of the room thermostat. In the case of the 8 bit object, the bit 2^2 is checked. If this bit is set to the value "1", the night mode is activated. It is possible to override the activation of the night mode with other operating modes depending on the setting in the parameter "Priority of night operation mode".	
Priority of night operation mode	**comfort mode overrides night mode** night mode overrides comfort mode
It is possible to set via this parameter whether the comfort mode takes priority over the night mode which has a time limit for the operating period of the lighting. The state (active or inactive) of a status with priority is also stored via the override function.	
Sending of dimming status object	**using read request only** cyclic on change of dimming value on change of dimming value & cyclic
This parameter determines whether the status of the dimming value is sent on the bus. "using read request only": The status of the dimming value is not sent automatically on the bus but it can be read out. "cyclic": The status of the dimming value is sent automatically on the bus after the set cyclic interval. "on change of dimming value": The status of the dimming value is sent immediately after a change in the value. If the output changes continuously, the telegram rate on the bus is reduced via the adjustable time period whereby the value is only sent every x seconds. "on change of dimming value & cyclic": The status of the dimming value is sent on the bus when the value at the output changes and also once the set cyclic period has elapsed.	
On continuous change of dimming value send dimming status object every	**2 seconds** 1 second – 15 minutes
If the dimming value changes continuously, a new status value is only sent on the bus if the set period has elapsed in order to reduce the bus load.	
Cycle time	**1 minute** 10 seconds – 60 minutes
Once the set cyclic period has elapsed, the status of the dimming value is sent again on the bus. The cyclic period is reset <u>each</u> time the status of the dimming value has been sent.	

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Channel A

Parameters	Settings
Operating mode	**Switching & dimming** Constant brightness adjustment master Constant brightness adjustment slave
The operating mode of the actuator can be set via this parameter. Switching & dimming: The actuator channels functions like a standard switching/dimming actuator. Constant light control is not possible. The communication objects "Comfort mode" and "Automatic mode" are greyed out. The night mode and the time-limited lighting (cleaning light) which is linked to it can continue to be used. Constant brightness adjustment master: The actuator channel is able to manage the automatic and comfort modes as well as the functions of a switching/dimming actuator. The constant light control is active in automatic mode and is taken over by the actuator channel. Depending on the parameter settings, the actuator channel issues the "Master dimming values" internally and on the bus in order to trigger the slave devices. Constant brightness adjustment slave: In this mode, the actuator channel receives dimming values which are generated either internally or by another master actuator channels via the "Value slave operation mode" object, depending on the parameter settings. The actual constant light control does not take place in the actuator channel.	
Switching on possible via dimming	disabled **enabled**
It can be set with this parameter whether it is possible to switch on the lighting via the "Dimming" communication object. The threshold is set with the parameter "Minimum dimming value (ON/OFF threshold)". This parameter <u>only</u> influences the behaviour of the "Dimming" object.	
Switching off possible via dimming	**disabled** enabled
It is possible to set with this parameter whether it is possible to switch the lighting off via the "Dimming" communication object. The threshold is set with the parameter "Minimum dimming value (ON/OFF threshold)" as a percentage. The parameter only influences the behaviour of the "Dimming" object.	

Parameters	Settings
On value when manually switching on	last value background brightness 5%-100% **100%**
If the light has been switched on manually, the lighting is set to the value selected here. In the setting "last value", the lighting is dimmed to the final dimming value before "OFF". If the starting value lies below the value set in the parameter "Minimum dimming value (ON/OFF threshold)", the light is dimmed to the minimum dimming value when it is switched on manually. **Note:** If the setting "only accept on On" is selected in the parameter "8-bit dimming value", the value transferred via the communication object "Value" is dimmed or set when the lighting is switched on manually.	
Minimum dimming value (ON/OFF threshold)	**0,5% (background brightness)** 5 – 70%
The minimum dimming value describes the smallest possible dimming value of the channel. If the value falls below the set minimum dimming value by dimming down via the "Dimming" object, the lighting is switched off depending on the parameter settings, provided that the parameter "Switching off possible via dimming" is enabled. If the parameter "Switching off possible via dimming" is disabled, the lighting remains switched on with the minimum dimming value. If the lighting is switched on via the "Dimming" object, the dimming process is started with the minimum dimming value. Dimming values which are transferred via the "Value" communication object are ignored if the value lies below the minimum dimming value. The exception is the dimming value "0". If this value is set, the lighting is switched off. In the operating mode "Constant brightness adjustment", the lighting is switched on or off by the controller by the minimum dimming value.	
8-bit dimming value	**accept immediately** only accept on On
This parameter determines whether channel A, when it is in the OFF state, carries out a dimming value telegram which it has received via the bus immediately (the channel switches to ON) or whether it stores the dimming value and only dims or jumps to this value after the next "ON" telegram via the "Dimming On/Off" object.	
8-bit dimming value	**jump** dimming
This parameter determines whether a new dimming value should be set immediately (jump) or the lighting should be slowly dimmed to this value (dimming).	
Dimming time from 0% to 100%	**8 seconds** 1 second – 10 minutes
The dimming time from 0% to 100% is set via this parameter. This time applies in connection with dimming telegrams (and value telegrams if the lighting has been dimmed to the 8 bit dimming value). A gradual transition from one brightness state to another is thereby possible.	

See channel A for explanations and settings of the parameters for channels B and C.

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20 A3 Switching / Dimming actuator 905303

Channel A, Constant brightness Master

Parameters	Settings
Corresponding sensor	**not yet associated** Sensor A Sensor B Sensor C
This parameter specifies which of the connected sensors should be used for constant light control.	
Setpoint in Lux (250 – 1200)	**600** 250 - 1200
A brightness setpoint for constant light control can be set via this parameter. This value is also used as a setpoint for the calibration. **Note:** The setpoint from the same master channel should be used to calibrate a sensor channel. If the channel is not selected as a master (the parameter "Setpoint in Lux" is not displayed), the calibration is carried out at 600 lux.	
Maximum difference to setpoint	15 Lux **30 Lux** 45 Lux 60 Lux
This parameter determines the accuracy of the required setpoint. This is necessary as the control is carried out in dimming steps. If there is a small maximum deviation from the setpoint, it can occur that the setpoint is already exceeded after a further adjustment step for "Brighter" or the value can already fall below the setpoint after a further adjustment step for "Darker". This leads to a continuous dimming up and down process (=continuous fluctuations in the brightness). If this is the case, the permitted deviation from the setpoint should be increased or the setpoint for dimming should be reduced.	

Parameters	Settings
Value of dimming steps	1% **1.5%** 2 % 3%
This parameter determines the step width of a dimming command which is used to change the EVG control voltage for constant light control. "1%" The EVG control voltage is modified per positioning command by 1% of the maximum possible range (note the "Type" parameter). "1.5%" The EVG control voltage is modifed per positioning command by 1.5% of the maximum possible range (note the "Type" parameter). "2%" The EVG control voltage is modifed per positioning command by 2% of the maximum possible range (note the "Type" parameter). "3%" The EVG control voltage is modifed per positioning command by 3% of the maximum possible range (note the "Type" parameter).	
Transmit next dimming value after	0.5 seconds **1 second** 2 seconds 3 seconds
This parameter is used to set the delay period after which the next dimming step can be carried out in constant light control and sent during operation of the master. It is thereby ensured that no abrupt changes in brightness occur during constant light control which the occupant of the room may find unpleasant. Possible time lags may occur in the controlled system (e.g. due to the inertia of the electronic ballasts).	
Transmission of master dimming value	**disabled** enabled
It can be set via this parameter whether the master dimming value of channel A should also be sent via the bus (object 24). The associated communication object is only displayed if the sending is enabled.	

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20 A3 Switching / Dimming actuator 905303

Channel A, Constant brightness Slave

General, Channel A-C	Channel A	Channel B	Channel C
Channel C, Constant brightness Slave	Sensor A	Sensor B	Sensor C
Channel A, Constant brightness Slave		Channel B, Constant brightness Slave	

Receiving of master dimming values	external via communication object ▼
Offset to received dimming value in percent [-100...+100]	0

Parameters	Settings
Receiving of master dimming values	**external via communication object** internal from channel A internal from channel B internal from channel C
It is set via this parameter whether the master dimming value is received via the bus or whether it is transferred internally by a channel which has been selected as the master. If the setting "external via communication object" is selected, the communication object "Value slave operation mode" is displayed which then must be linked with the "Master dimming value" object of a master channel from another device.	
Offset to received dimming value in percent (-100...+100)	**0**
An individual offset is assigned to the selected actuator channel via this parameter. This value is added to or subtracted from the master dimming value which is received via the bus or transmitted internally. The result is routed to the dimming output. The slave mode enables different lamps to be controlled via **one** brightness sensor at the same or different brightness levels.	

Sensor A

General, Channel A-C	Channel A	Channel B	Channel C	**Sensor A**	Sensor B	Sensor C

Brightness sensor	active ▼
Send brightness value	on change in brighness value & cyclic ▼
Minimal change of brightness to transmit a new value	30 Lux ▼
Cycle time	1 minute ▼

Parameters	Settings
Brightness sensor	**not active** active
A connected brightness sensor must first be activated via this parameter to enable the constant light controller to function.	
Send brightness value	**using read request only** cyclic on change in brightness value on change in brightness value & cyclic
This parameter defines whether the status of the brightness value is sent on the bus. "using read request only": The status of the brightness value is not sent automatically on the bus but it can be read out. "cyclic": The status of the brightness value is sent automatically on the bus after the set cyclic period. "on change in brightness value": The status of the brightness value is sent after an adjustable change in the value. "on change in brightness value & cyclic": The status of the brightness value is sent after a change in the value and also once the set cyclic period has elapsed.	
Minimal change of brightness to transmit a new value	15 Lux **30 Lux** 45 Lux 60 Lux
The minimum brightness change for sending a new measured brightness value automatically is specified in this parameter.	
Cycle time	**1 minute** 10 seconds – 60 minutes
If the cyclical sending of the brightness value has been enabled, the cyclic sending period is set via this parameter.	

See sensor A for explanations about the parameters for sensors B and C.

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