





CU-DIN DIM 6-CH 0...10V KNX

EC10430329

MA00651401

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1 Description

The ESYLUX CU-DIN DIM 6-CH 0-10V KNX uses a KNX/EIB BUS to communicate with other KNX devices. The database must be downloaded to the dimmer actuator using ETS3.0E, ETS4 or ETS5, and this document describes how to use the product. Our products are manufactured according to EMC, electrical safety and environmental conditions.

Dimmer actuators are used to control loads, such as:

- Lighting
- Curtains
- Heating
- Other equipment

Note: Use this product only as intended (as described in the user instructions). Do not make any changes or alterations as this will render any warrantees null and void. You should check the device for damage immediately after unpacking it. If there is any damage, you should not install the device under any circumstances.

If you suspect that safe operation of the device cannot be guaranteed, you should turn the device off immediately and make sure that it cannot be operated unintentionally.

2 Safety Instructions

- Work on the 230 V power system must be carried out by authorized personnel only, with due regard to the applicable installation regulations.
- Switch off the power supply before installing the system.
- The 21 30 V_ KNX bus voltage cannot be used as 24 V operating or auxiliary voltage.
- Max. relay output: 10 A

3 Product Function

The dimmer actuator can dim 6 channels with independent AC loads. The control parameters are:

Each channel has a maximum output current of 10A for dimmer actuators 1-fold, and cannot exceed 10A in total.





The following functions can be set individually for each output channel:

1 A 2 3 A 4 5 A 6 7 A 8	9 Å 10 11 Å 12	
ESYLUX* Dimming Actuator		A B C KNX D E F
CU-DIN DIM 6-CH 010V KNX		Un: 230 V ~ In: 10 A
OUT (0-10 V) A B C D E F GND 24 V=		Prog / LED 30 V =

USER MANUAL

- Statistics total ON time
- Response status
- Recovery status
- Staircase light
- Flashing light
- Scene control
- Scene dimming
- Sequence control
- Threshold switch
- Heating actuator (PWM)

4 Hardware

Technical properties of the ESYLUX KNX/EIB The technical data of the dimmer actuator is as follows.

4.1 Technical data

Power supply		
•	Operating voltage (supply by the bus)	21-30 V 🔜
•	Current consumption EIB/KNX (operating)	< 15 mA
•	Current consumption EIB/KNX (standby)	< 5 mA
•	Power consumption EIB/KNX (operating)	< 450 mW
•	Power consumption EIB/KNX (standby)	< 150 mW
Output nomina	al values	
•	Number of contacts	6
•	Rated current	10 A
•	Power loss per device at max. load	2.7 W
•	Rated voltage	230V~

Output life expectancy

Mechanical Life	50 years
Electrical Life	20 years



Dimmer actuator output without additional DC power

Connections		
•	EIB / KNX	Bus Connection Terminal 0.8 mm Ø, single core
•	Load circuits	Screw terminal with slotted head 0.2-4 mm ² multi- core 0.4-6 mm ² single core
•	Cable shoe	12 mm
•	Tightening torque	Max. 0.4 Nm

Operation and display

• Red LED and EIB/KNX program button for assigning the physical address. Factory settings are 15.15.255

Temperature range

-	-	
•	Operation	0 °C ~ + 45 °C
•	Storage	– 25 °C ~ + 55 °C
•	Transport	– 25 °C ~ + 70 °C
Environment of	conditions	
•	Humidity	max. 95 % Non-condensing

Appearance design	
Modular	DIN-Rail Modular installation
 Dimensions (H x W x D) 	90 x 144 x 65
 Weight (unit kg) 	0.49
Installation	Use 35 mm mounting rail
Mounting position	Electric dimmer box
Material and colour	Plastic, White

CE Mark in accordance with

EMC Standard	2004/1008/EC
LVD Standard	2006/95/EC
RoHS	2011/65/EU



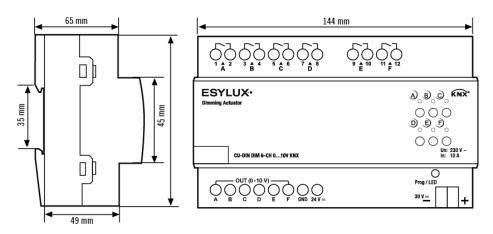


Note: All loads, at 230 V ~ Programming requires the EIB Software Tools ETS3.0E, ETS4 or ETS5.

 Max. number of communication objects 	130
 Max. number of group addresses 	254
 Max. number of associations 	254

4.2 Dimming mode

4.2.1 Dimensional drawings

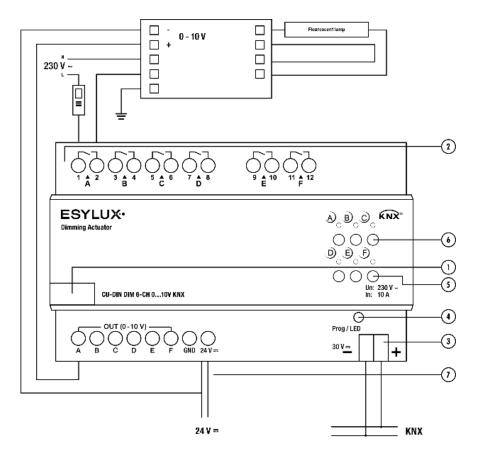






4.3 Wiring Diagram

Note: On the input side, the device is to be protected against short circuits with a 10 A circuit breaker.



1. Label area

2. Power input for load connection sequence

- 3. KNX/EIB connector
- 4. Programming
- button&programming LED

5. Contact position indication and manual operation

- 6. LED state
- 7. 24V <u>---</u> input

Note: a) Dimensions of the space to be provided for each dimmer.

b) Dimensions and position of the means for supporting and fixing the dimmer within this space.

c) Minimum clearance between the various parts of the dimmer and the surrounding parts where fitted.

d) Minimum dimensions of ventilation opening, if needed, and their correct arrangement.







e) Protective devices (e.g. fuses, automatic protective devices, etc.) to be connected to the load to avoid overloading.

4.4 Maintenance and warnings

- Please read this user manual carefully before any operation.
- Do not operate close to interfering devices.
- The site should be well ventilated with a good cooling environment.
- Pay attention to damp proofing, quakeproofing and dustproofing.
- Avoid contact with rain, other liquids or caustic gas.
- Please contact professional maintenance staff or the ESYLUX service centre for repairs.
- Remove dust regularly and do not wipe the unit with volatile liquids such as alcohol, petrol, etc.
- In case of contact with damp or liquid, turn off immediately.
- Check the circuitry and other related circuits or cables regularly, and replace inadequate circuitry promptly.
- For security, each circuit must be protected by an MCB or fuse
- The installation location should be well-ventilated, with no moisture, movement or dust.

5 Software

The ESYLUX 0-10V Dimmer Actuator hast to be used with ETS3E to perform the configuration. The device type is CU-DIN DIM 6-CH 0-10V KNX and the database name is "ec10430329_ CU-DIN DIM 6-CH 0-10V KNX.VD4". All interfaces and functions use specific parameters. Please see the overview below. Each output channel of the dimmer actuators is independent and the same. It is therefore sufficient to understand how one operates. The following paragraph describes the first output channel in detail.

5.1 Overview of database functions

The following table provides an overview of the functions and certain parameters of the switch actuator:

General				
	•	Cycle telegram (heartbeat)	X	
	•	System delay after recovery	X	
Sequence			X	
Channel				
	•	Statistics total ON time	X	
	•	Voltage Recovery state	X	



 Table 1: Database application overview.

5.2 Object/Association/Group address definition

The following table shows the max. number of communication objects, associations and group addresses. The object is assigned to certain functions of the channel output pages. If the functions are activated, the corresponding object will be available. One or more group addresses can be assigned to an object. The association will connect group addresses to the object.

Type VD4	Max. number of communication objects	Max. number of associations	Max. number of group addresses
ec10430329	130	254	254

Table 2: Overview the max. number of objects, max. number of associations and max. number of group addresses.

Note: At least ETS 3.0 E is required for use.



5.3 "General" function parameter

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ETS Edit Workplace Commissio	oning Diagnostics Extras Window				^ (2
🛛 👩 Close Project 🧳 Undo 🛝	Redo 🚔 Reports 📰 Workplace	e 🔻 🧾 Catalogs 🛛 🔤 Diagnostics			
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🕂 Add Devices 🔹 🗙 Delete 🛨 Do	ownload 🔻 🤌 Highlight Changes 🛛 Defa	ult Parameters		Search	P 1
 ☐ Buildings ▶ ☆ Trades 	1.1.1 M/DA6.10.1 > General				
Topology	General	System delay operation after recovery	2	* *	0
Group Addresses	Channel A	(2255s) Cycle send general telegram(165535s,0-	0	•	\$
Dynamic Folders	A>dimming config	invalid)	U	Ŧ	
 ▲ 1.1.1 M/DA6.10.1 ■2 0: General - Send cycles 	Channel B	Enable sequence 1	Oisable Enable		
■दे 10: Output A - Channel output ■दे 11: Output A - Relative dimmin	B>dimming config	Enable sequence 2	Disable		
■ 30: Output B - Channel output	Channel C	Enable sequence 3	Oisable Enable		
■之 31: Output B - Relative dimmin ■之 50: Output C - Channel output	C>dimming config	Enable sequence 4	Disable Enable		
■2 51: Output C - Relative dimmin ■2 70: Output D - Channel output	Channel D	Enable sequence 5	Disable Enable		
■\$ 71: Output D - Relative dimmi	D>dimming config	choic sequence s			
■2 90: Output E - Channel output ■2 91: Output E - Relative dimmin	Channel E				
■2 110: Output F - Channel output ■2 111: Output F - Relative dimmi	E>dimming config				
	Channel F				
	F>dimming config				
	Group Objects Parameter				
<no interface="" selected=""></no>	1.1 Neue Linie	1.1.1 M/DA6.10.1		Last used workspace	

Fig 1: "General" parameter window "7 parameters can be set in the General window "System delay operation after recovery", "Cycle send general telegram" and "Enable sequence 1-5".

• System delay operation after recovery (2-255 s)

The device will be delayed for 2-255 s after powering on. The default value is 2 seconds. The min. value is 2 seconds and the max. value is 255 seconds. Options: **2-255 s**

Power on, then start the timer, after setting the time, the dimming is operational. This function is selected by the user.

• Cycle send general telegram (1-65535 s, 0 - invalid)

The range of the parameter is 0 to 65535 s. Zero disables the function, other values enable the function

Options: **0-65535 s**

If the parameter is set to non-zero, the device will send telegram data cyclically when it times out. It sends the value alternately between 0 and 1.





• Enable sequence 1

Enable/disable the sequence. Options: **Disable** Enable

Disable: Disables the sequence function **Enable**: Enables the sequence function. Set as follows

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🔆 Trades	1.1.1 M/DA6.10.1 > G:sequence .	L				. 0
Topology +	General	Operaton mode of the sequence 1	Start with "1",Stop with "0"	•		ŏ
🖬 Group Addresses 🔸	c					1
E Devices •	G:sequence 1	Control mode of the sequence 1	FWD	•		
Dynamic Folders	Channel A					
4 🔲 1.1.1 M/DA6.10.1		Runing mode of the sequence 1	Single Ocycle			
■之 0: General - Send cycles	A>dimming config			*		
1: General - Sequence 1	Channel B	Runing time(0255 hours,0h&0m-unlimited)	0	Ŧ		
10: Output A - Channel output		Runing time(059 mins,0h&0m-unlimited)	0			
11: Output A - Relative dimmin	B>dimming config	rannig anelaiss millionadh annineay	•	v		
■2 30: Output B - Channel output ■2 31: Output B - Relative dimmin	Channel C	Position after running time out	Invalid	•		
2 50: Output C - Channel output						
2 51: Output C - Relative dimmin	C>dimming config	Total 24 steps, configuration as following:				
■	Channel D	>>Step 1 configuration	Invalid	*		
■ 2 71: Output D - Relative dimmi		Time for step 1 (065535s)	5	*		
■ズ 90: Output E - Channel output	D>dimming config	time for step 1 (0.000000)	2	Ŧ		
■2 91: Output E - Relative dimmin	Channel E	Time for step 1 (0999ms)	0	*		
110: Output F - Channel output						
111: Output F - Relative dimmi	E>dimming config	>>Step 2 configuration	Invalid	•		
	Channel F		-			
		Time for step 2 (065535s)	5	Ŧ		
	F>dimming config	Time for step 2 (0.999ms)	0	*		
			-	Ŧ		
		>>Step 3 configuration	Invalid	*		
	Group Objects Parameter					•
<no interface="" selected=""></no>	L1 Neue Linie	1.1.1 M/DA6.10.1			Last used workspace	.11

Fig:1.1: "G: sequence 1" parameter window It includes 24 steps.

• Operating mode of sequence 1

Set the operating mode.

Options: "1" to start, "0" to stop "0" to start, "1" to stop

"1/0" to start, cannot stop

1" to start, "O" to stop: When "1" is received, sequence 1 runs. When "0" is received, sequence 1 stops.

"O" to start, "1" to stop: When "O" is received, sequence 1 runs. When "1" is received, sequence 1 stops.

"1/0" to start, cannot stop: When "1" or "0" is received, sequence 1 runs.

• Control mode of sequence 1

Set the control mode. Options: **FWD** ESYLUX•





REW Random

FWD: Forward mode **REW**: Back/Rewind mode **RANDOM**: Random mode

• Running mode of sequence 1

Set the running mode Options: Single Cycle Single: Run only once.

Cycle: Cycle run.

• Running time (0-255 hours,0 hours & 0 mins - unlimited)

Set the sequence running time. Options: **0-255**

• Running time (0-59 mins, 0 hours & 0 mins - unlimited)

Set the sequence running time. The longest time is 59 mins. Options: **0-59**

Note: Unlimited when time set to 0 hours & 0 mins.

• Position after time-out

If the sequence is running in Cycle mode and the run time is greater than zero, the sequence will return to the set position after timing out.

Total 24 steps, configuration as follows:

• Step 1 configuration Options: invalid Scene No. 01 ... Scene No. 64

• Time for step 1 (0-65535 s)

Set the time for the step. The longest time is 65535 s.

• Time for step 1 (0-999 ms)

Set the time for the step. The longest time is 999 ms. Setting other steps is the same as for step 1.



5.4 Function parameter - Channel "N"

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🔲 Buildings 🔸	1.1.1 M/DA6.10.1 > Channel A				
💥 Trades	1.1.1 W/DA0.10.1 > Channel A				0
Topology	General	The response of channel state(1bit)	Invalid	-	0
Group Addresses	G:sequence 1				×
Devices 🔻	disequence 1	The response of channel state(1byte)	Invalid	-	
Dynamic Folders	Channel A				
1.1.1 M/DA6.10.1	A>dimming config	Statistics total ON time to allowed (065535h=7.4years)	Oisable Enable		
■之 0: General - Send cycles	A>aimming contig				
1: General - Sequence 1	Channel B	The status after bus voltage recovery	OFF	-	
■2 10: Output A - Channel output ■2 11: Output A - Relative dimmin		Maximum level	100%(255)		
2 30: Output B - Channel output	B>dimming config	Maximum level	100/6(233)	-	
■ 31: Output B - Relative dimmin	Channel C	Upper threshold level	100%(255)	•	
■	C>dimming config				
■之 51: Output C - Relative dimmin	C>dimming conlig	Lower threshold level	0%(0)	-	
■之 70: Output D - Channel output	Channel D	Dimming minimum level	0%(0)	•	
■‡ 71: Output D - Relative dimmi	D>dimming config	binning mining the	070(0)		
■ 90: Output E - Channel output	57 dimining coming	Show the function page ==>>	Disable Enable		
2 91: Output E - Relative dimmin	Channel E				
■2 110: Output F - Channel output ■2 111: Output F - Relative dimmi	E>dimming config				
• III: Output P - Kelative dimmi					
	Channel F				
	F>dimming config				
	Course Objects				
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<no interiace="" selected=""></no>	L.1 Neue Linie	1.1.1 M/DA6.10.1		Last used workspace	

Fig 2: "Channel A" parameter windows.

In the "Channel A" parameter windows, you can set some common functions. Select the function and download the database to the device; the device will work in accordance with the selected function.

• Channel response state (1 bit) Invalid

Options:

1 bit always response

1 bit only changed

Invalid: There is no response.

1 bit always response: It always responds

If the channel is ON, the response is 1

If the dimmer is OFF, the response is O

1 bit only changed: It will respond when the dimmer state is changed

• Channel response state (1 byte)

Invalid Options:

1 byte always response

1 byte only changed

Invalid: there is no response.

1 byte always response: It always responds with the light level value.





1 byte only changed: It will respond when the light value is changed.

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- Statistics total ON time to be allowed (0-65535 h = 7.4 years)

Fig. 2.1: "Statistics total ON time to be allowed"

This function is used to calculate the total ON time for the output channel. The maximum time is 65535 h. This function is very useful as you can find out the channel work status using this function. Options: **Disable**

Disable Enable

Disable: No statistic time. **Enable:** Statistics time.

• Alarm when times out (1-65535 h, 0 - invalid)

When the device's operating time reaches the set value the alarm will be triggered. The value range is 1-65535 h, 0 is invalid.

• Transmit telegram interval when alarm is triggered

Set the alarm time interval.



 Status after bus voltage recovery 	•	Status	after	bus	voltage	recovery
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Buildings +	1.1.1 M/DA6.10.1 > Channel A				
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Topology •	General	The response of channel state(1bit)	Invalid	-	
Group Addresses					
Devices •	G:sequence 1	The response of channel state(1byte)	Invalid	•	
Dynamic Folders	Channel A				
1.1.1 M/DA6.10.1		Statistics total ON time to allowed (065535h=7.4years)	Disable		
C: General - Send cycles	A>dimming config				
■‡ 1: General - Sequence 1	Channel B	The status after bus voltage recovery	Defined brightness value	•	
10: Output A - Channel output		-			
11: Output A - Relative dimmin	B>dimming config	Brightness value	0%(0)	•	
 ■之 30: Output B - Channel output ■之 31: Output B - Relative dimmin 	Channel C	Maximum level	100%(255)	-	
■ 2 31: Output B - Relative dimmin ■ 2 50: Output C - Channel output		_			
 50: Output C - Relative dimmin 	C>dimming config	Upper threshold level	100%(255)	•	
■ Z 70: Output D - Channel output	Channel D				
2 71: Output D - Relative dimmi		Lower threshold level	0%(0)	•	
2 90: Output E - Channel output	D>dimming config	Dimming minimum level	0%(0)	•	
■Z 91: Output E - Relative dimmin	Channel E	Dimming minimum level	0/6(0)		
110: Output F - Channel output		Show the function page ==>>	Oisable Enable		
■ズ 111: Output F - Relative dimmi	E>dimming config				
	Channel F				
	F>dimming config				
	Group Objects / Parameter /				

Fig. 2.2: "Status after bus voltage recovery".

Set the status of restore mode after power on for each channel.

Options: Off

Defined brightness value Last brightness value

Off: After power on the channel's status is off.

Defined brightness value: After power on the channel's status is the defined brightness value. The range is 0% to 100%.

Last brightness value: After power on the channel's status is the last brightness value

• Maximum level

Set the maximum level. Options: **0%(0)-100%(255)**

• Upper threshold level

 Set the upper threshold level.

 Options:
 0%(0)-100%(255)

• Lower threshold level

Set the lower threshold level. Options: **0%(0)-100%(255)**





• Minimum dimming level Set the minimum dimming level. Options: 0%(0)-100%(255)

Brightness

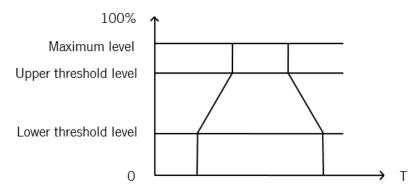


Fig. 2.3: Switch ON/OFF or Absolute dimming

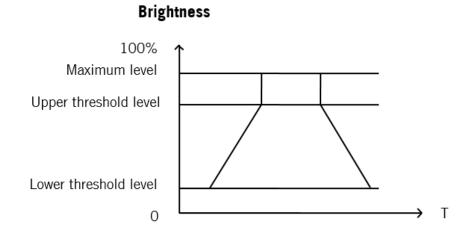


Fig. 2.4: Relative dimming

 Show the function page
 Set enable/disable and show the function page.
 Options: Disable Enable
 Disable: Don't show the dimmer function page.
 Enable: Show the function page for setting the dimmer function.



5.5 A>dimming configuration

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Buildings	1.1.1 M/DA6.10.1 > A>dimmine	config				
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Topology +	General	Switching ON fade time(0255s)	3	* *		
Group Addresses	G:sequence 1					1
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👕 Dynamic Folders	Channel A					
1.1.1 M/DA6.10.1		Enable relative dimming	Disable Inable			
2 0: General - Send cycles	A>dimming config	- Belative/Alaite) discussion field time	-	•		
2 1: General - Sequence 1	Channel B	 -Relative(4bits) dimming fade time (brightness0%100%/2255s) 	5	A		
10: Output A - Channel output						
■ 11: Output A - Relative dimmin	B>dimming config	-Relative dimming is saved as the brightness of the switch	NO O YES			
2 30: Output B - Channel output	Channel C					
31: Output B - Relative dimmin 50: Output C - Channel output		Enable absolute dimming	Disable			
S0: Output C - Channel output S1: Output C - Relative dimmin	C>dimming config					
 2 70: Output D - Channel output 	Channel D					
2 71: Output D - Relative dimmi						
2 90: Output E - Channel output	D>dimming config					
■之 91: Output E - Relative dimmin	Channel E					
I10: Output F - Channel output I11: Output F - Relative dimmi	E>dimming config					
	Channel F					
	5. F					
	F>dimming config					
	Group Objects Parameter					
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Fig. 3: A>dimming configuration.

• Switching ON fade time (0-255 s)

Set the time for switching ON. **Note:** brightness 0%-100%/0-255 s

• Switching OFF fade time (0-255 s) Set the time for switching OFF. Note: brightness0%...100%/0..255 s

Enable relative dimming
 Options: Disable
 Enable

Disable: Doesn't allow relative dimming **Enable:** Allow relative dimming

Note: Relative dimming fade time (brightness 0%-100%/0-255 s), the data length is 4 bits.





• Relative dimming is saved as the brightness of the switch Options: NO

YES

NO: the brightness value is not saved. **YES:** the brightness value is saved.

• Enable absolute dimming

Options: **Disable** Enable Disable: Don't allow absolute dimming Enable: Allow absolute dimming

Note: Absolute dimming fade time (brightness 0%-100%/0-255 s), the data length is 1 byte

• Absolute dimming is saved as the brightness of the switch Options: NO

YES

NO: the brightness value is not saved. **YES**: the brightness value is saved.





5.6 A: Function

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Buildings	1.1.1 M/DA6.10.1 > A:function				1
🔆 Trades	1.1.1 W/DA0.10.1 > Allunction				
Topology	General	Enable function "staircase light"	Disable Enable		Ì
📰 Group Addresses 🔸		chable function stancase light			4
Devices •	G:sequence 1	Enable function "flashing"	Disable Enable		
Dynamic Folders	Channel A				
▲ 🔲 1.1.1 M/DA6.10.1		Enable function "scene"	Disable Inable		
■之 0: General - Send cycles	A>dimming config				
■2 1: General - Sequence 1	A:function	Enable function "threshold"	Oisable Schubble		
10: Output A - Channel output		1			
11: Output A - Relative dimmin	A:staircase light	Enable function "heating"	Disable Inable		
19: Output A - Staircase light	A:flashing	NOTE:Recommend to only use a function	on for a channel		
22: Output A - Flashing	Anoshing	No restecton menta to only use a ranea	on for a channel.		
23: Output A - Scene(8bit)	A:scene				
	A:threshold				
28: Output A - Heat with 1bit c	Athreshold				
20: Output B - Channel output	A:heating				
■ 31: Output B - Relative dimmin	Channel B				
■	Channel B				
■ \$ 51: Output C - Relative dimmin	B>dimming config				
170: Output D - Channel output					
2 71: Output D - Relative dimmi	Channel C				
90: Output E - Channel output	C>dimming config				
■					
📫 110: Output F - Channel output	Channel D				
■‡ 111: Output F - Relative dimmi	D>dimming config				
	Group Objects Parameter				
<no interface="" selected=""></no>	Neue Linie	1.1.1 M/DA6.10.1		Last used workspace	

Fig. 4: Function window.

The window for enabling/disabling the functions below.

- Enable "staircase light" function
- Enable "flashing" function
- Enable "scene" function
- Enable "threshold" function
- Enable "heating" function





5.6.1 A: "Staircase light" function

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🔲 Buildings 🔸	1.1.1 M/DA6.10.1 > A:staircase li	aht			
💥 Trades	1111 My Drio12012 - 7 Abdan cabe h	9.12			0
Topology •	General	Staircase light operation	Start with "1",Stop with "0"	•	0
Group Addresses	G:sequence 1				\$
Devices •	obequence 1	Brightness value	100%(255)	•	
Dynamic Folders	Channel A		-	*	
▲	A>dimming config	Fade time of brighter(0255s)	3	*	
■2 0: General - Send cycles ■2 1: General - Sequence 1	AF dimining coming	Fade time of darker(0255s)	3	<u>*</u>	
10: Output A - Channel output	A:function			•	
■ 11: Output A - Relative dimmin	A:staircase light	Duration time for brightness(0255min)	0	* *	
■‡ 19: Output A - Staircase light		Duration time for brightness(059sec)	5	*	
■2 22: Output A - Flashing	A:flashing	build of the for bright cost of soco	5	¥	
23: Output A - Scene(8bit)	A:scene	Change staircase light time via bus	Oisable Enable		
24: Output A - Scene dimming					
25: Output A - Threshold input	A:threshold	Warning staircase light via bus	Oisable Enable		
■2 28: Output A - Heat with 1bit c ■2 30: Output B - Channel output	A:heating				
■2 31: Output B - Relative dimmin	Channel B				
2 50: Output C - Channel output					
51: Output C - Relative dimmin	B>dimming config				
 70: Output D - Channel output 71: Output D - Relative dimmi 	Channel C				
■2 90: Output E - Channel output	C>dimming config				
■之 91: Output E - Relative dimmin					
110: Output F - Channel output	Channel D				
■ 111: Output F - Relative dimmi	D>dimming config				
	Group Objects Parameter				
<no interface="" selected=""></no>	.1 Neue Linie	1.1.1 M/DA6.10.1		Last used workspace	

Fig. 4.1: "Staircase light" window. For staircase applications

• Staircase lighting operation

Options: "1" to start, "0" to stop "1" to start, "0" invalid "1/0" to start, cannot stop

"1" to start, "0" to stop: When "1" is received the staircase light starts running automatically, stop with time-out or stop with "0".

"1" to start, "0" invalid: When "1" is received the staircase light starts running automatically, 0 is invalid.

"1/0" to start, cannot stop: When data "1" or "0" is received the staircase light starts running automatically, cannot stop.

• Brightness value

Set the brightness value of the staircase light.

• Brighter fade time: (0-255 s)

Fade time from dark to bright in seconds.





• Darker fade time: (0-255 s)

Fade time from bright to dark in seconds.

• Brightness duration: (0-255 mins)

Duration in the bright state in minutes.

• Duration for brightness: (0-59 s)

Duration in the brightness state in seconds.

• Change staircase lighting time via bus

Options: Disable Enable

Disable: Cannot modify staircase lighting delay off time via the bus, can only be set via the database.

Enable: Allow user to modify staircase lighting delay off time via the bus.

• Warning staircase lighting

Options: Disable Enable

Disable: Disable alarm.

Enable: Allow sending out warning state using warning data point for staircase light ON/OFF.



5.6.2 A: "Flashing" function

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🔲 Buildings 🕨 🕨	1.1.1 M/DA6.10.1 > A:flashing				
🔆 Trades					Q
Topology +	General	Flashing operation	Start with "1",Stop with "0"	-	C
Group Addresses	G:sequence 1				*
Devices •	Gisequence 1	Brightness value	100%(255)	-	
Dynamic Folders	Channel A			•	
4 🔳 1.1.1 M/DA6.10.1		Fade time of brighter(0255s)	3	÷	
■2 0: General - Send cycles	A>dimming config				
I: General - Sequence 1	A:function	Fade time of darker(0255s)	3	.	
10: Output A - Channel output		Duration time for brightness(0255min)	0	*	
■2 11: Output A - Relative dimmin	A:staircase light		-	Ť	
■⊉ 19: Output A - Staircase light	A:flashing	Duration time for brightness(059sec)	5	* *	
22: Output A - Flashing					
■2 23: Output A - Scene(8bit)	A:scene	Duration time for darkness(0255min)	0	* *	
 ■2 24: Output A - Scene dimming ■2 25: Output A - Threshold input 	A:threshold				
■ 25: Output A - Infeshold input ■ 28: Output A - Heat with 1bit c	Attrieshold	Duration time for darkness(059sec)	5	Ŧ	
20: Output A - Heat with 1bit C 30: Output B - Channel output	A:heating	Flashing number(1255,0-Unlimited)	0	*	
■		hasting humber(1.255,0-0himited)	0	Ŧ	
■	Channel B	Brightness after achieves the flashing	Invalid	-	
■	B>dimming config	number			
■ 70: Output D - Channel output					
■	Channel C				
2 90: Output E - Channel output	C>dimming config				
■Z 91: Output E - Relative dimmin					
■2 110: Output F - Channel output	Channel D				
111: Output F - Relative dimmi	D>dimming config				
	Group Objects Parameter				
<no interface="" selected=""></no>	1.1 Neue Linie	1.1.1 M/DA6.10.1		Last used work	space

Fig. 4.2: "Flashing" window.

Flashing between ON and OFF in this mode.

• Flashing operation

Options:

Three control modes for this function.

"1" to start, "0" to stop "1" to start, "0" invalid "1/0" to start, connet stop

"1/0" to start, cannot stop

"1" to start, "0" to stop: Start flashing with 1 and stop flashing with 0. **"1" to start, "0" invalid:** Start flashing with 1 and invalid with 0.

"1/0" to start, cannot stop: Start flashing with 1 or 0, cannot stop.

• Brightness value

Set the brightness value flashing mode.

• Brighter fade time: (0-255 s)

Fade time from dark to bright in seconds.

• Darker fade time: (0-255 s)

Fade time from bright to dark in seconds.

• Brightness duration: (0-255 mins)

Duration in the bright state in minutes.





• Duration for brightness: (0-59 s)

Duration in the bright state in seconds.

• Darkness duration: (0-255 mins)

Duration in the dark state in minutes.

• Duration for darkness: (0-59 s)

Duration in the darkness state in seconds.

• Flashing number (0-255, 0 - Unlimited)

Flashing, range between 0 and 255. 0 is unlimited.

• Brightness once flashing number achieved

Brightness once flashing stopped by overflow counter, the range is 0% (0)-100% (255) or invalid.

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Buildings •	1.1.1 M/DA6.10.1 > A:scene				
💥 Trades	1.1.1 W/DA0.10.1 > A.scene				. 0
Topology •	General	Fade time of scene dimming(2255s)	5	*	0
Group Addresses	G:sequence 1				1
Devices •		Total 10 scenes, configuration as following:			
Dynamic Folders 1.1.1 M/DA6.10.1	Channel A	>>Output assigned to(scene 164)	Not allocate	*	
■ 2 0: General - Send cycles	A>dimming config	Output brightness value	100%(255)	•	
1: General - Sequence 1					
■2 10: Output A - Channel output	Afunction	Fade time for brighter/darker(0255s)	3	÷	
■式 11: Output A - Relative dimmin	A:staircase light				
■≵ 19: Output A - Staircase light	A.0. 11	>>Output assigned to(scene 164)	Not allocate	•	
■之 22: Output A - Flashing	A:flashing	Output brightness value	100%(255)	*	
23: Output A - Scene(8bit)	A:scene				
24: Output A - Scene dimming 24: Output A - Threshold input	Athreshold	Fade time for brighter/darker(0255s)	3	× v	
28: Output A - Heat with 1bit c	, ten estora	>>Output assigned to(scene 164)	Not allocate		
■ 30: Output B - Channel output	A:heating	>>Output assigned to(scene 104)	Not allocate	•	
21: Output B - Relative dimmin	Channel B	Output brightness value	100%(255)	•	
■式 50: Output C - Channel output					
2 51: Output C - Relative dimmin	B>dimming config	Fade time for brighter/darker(0255s)	3	* *	
■之 70: Output D - Channel output	Channel C	>>Output assigned to(scene 164)	Not allocate	•	
71: Output D - Relative dimmi 190: Output E - Channel output					
I 90: Output E - Channel Output I 91: Output E - Relative dimmin	C>dimming config	Output brightness value	100%(255)	•	
110: Output F - Channel output	Channel D	Fodo tino foo brinktor (dodor (C. 255.)	3		
2 111: Output F - Relative dimmi	D>dimming config	Fade time for brighter/darker(0255s)	2	Ŧ	
					-
	Group Objects Parameter				
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5.6.3 A: "Scene" function

Fig. 4.3: "Scene" window.

• Scene dimming fade time: (0-255 s)

Fade time in the scene mode in seconds.





Total 10 scenes, configuration as follows, with the setting as per below. Each scene is the same as the following:

• Output assigned to (scene 1-64)

Allocate the scene.

- Output brightness value
- Set the output brightness value 0%-100%
- Brighter/darker fade time (0-255 s)

Set the brighter or darker time.

5.6.4 A: "Threshold" function

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🔲 Buildings 🕨	1.1.1 M/DA6.10.1 > A:threshold				ρ Ξ
🔆 Trades					0
Topology •	General	Brightness value for switch ON of threshold	100%(255)	•	0
Group Addresses	G:sequence 1				*
Devices 🔻	osciación 2	Fade time for switch ON of threshold(0255s)	3	* *	
Dynamic Folders	Channel A	Fade time for switch OFF of threshold	-	*	
▲ 🔲 1.1.1 M/DA6.10.1	A>dimming config	(0255s)	3	Ŧ	
■ C: General - Send cycles	A2dimming conlig			*	
■2 1: General - Sequence 1	Afunction	Threshold 1 value is(0255)	80	Ť	
■2 10: Output A - Channel output ■2 11: Output A - Relative dimmin		Threshold 2 value is(0255)	180		
II: Output A - Relative dimmin II: Output A - Staircase light	A:staircase light	Infestold 2 value is(0255)	180	T	
22: Output A - Flashing	A:flashing	Input value <lower td="" threshold<=""><td>OFF</td><td>*</td><td></td></lower>	OFF	*	
23: Output A - Scene(8bit)	A:scene				
■ズ 24: Output A - Scene dimming	Ascene	Lower threshold <= Input value <= Upper threshold	ON	•	
25: Output A - Threshold input	A:threshold				
28: Output A - Heat with 1bit c	A:heating	Input value>Upper threshold	OFF	•	
■ズ 30: Output B - Channel output	Aneating	Change threshold 1 via bus	Disable Enable		
31: Output B - Relative dimmin	Channel B	Change threshold I via bus	Ulsable Enable		
50: Output C - Channel output	B>dimming config	Change threshold 2 via bus	Disable Enable		
2 51: Output C - Relative dimmin	6>dimming config	5			
 ■2 70: Output D - Channel output ■2 71: Output D - Relative dimmi 	Channel C				
2 90: Output E - Channel output	C>dimming config				
■‡ 91: Output E - Relative dimmin					
110: Output F - Channel output	Channel D				
■‡ 111: Output F - Relative dimmi	D>dimming config				
	Group Objects Parameter				
<no interface="" selected=""></no>	.1 Neue Linie	1.1.1 M/DA6.10.1		Last used workspace	

Fig. 4.4: "Threshold" window.

• **Brightness value for switching threshold ON** Configure the brightness for switching ON

• Fade time for switching threshold ON (0-255 s)

Configure the time for switching ON in seconds

• Fade time for switching threshold OFF (0-255 s) Configure the time for switching OFF in seconds





• Threshold 1 value is (0-255)

Set threshold 1 value between 0 and 255. Default is 80.

• Threshold 2 value is (0-255)

Set threshold 2 value between 0 and 255. Default is 180.

• Input value < Lower threshold

If the value of the telegram received from the bus is lower than the minimum threshold value, the switch will function according to the option below (ON or OFF or Unchanged)

Options: Unchange ON

Options:

OFF

Unchange: The channel switch position is set to unchange.

ON: The channel switch position is set to ON.

OFF: The channel switch position is set to OFF

• Lower threshold <= Input value <= Upper threshold

If the value of the telegram received from the bus is between the lower threshold and the upper threshold, the switch will function according to the option below (ON or OFF or no action)

> Unchange ON OFF

Unchange: The channel switch position is set to unchange.

ON: The channel switch position is set to ON.

OFF: The channel switch position is set to OFF

• Input value > Upper threshold

If the value of the telegram received from the bus is more than the upper threshold value, the switch will function according to the option below (ON or OFF or no action).

Options: Unchange ON

OFF

Unchange: The channel switch position is set to unchange. **ON:** The channel switch position is set to ON. **OFF:** The channel switch position is set to OFF

• Change threshold 1 via the bus

Options: Disable

Enable

Disable: Do not allow changing the threshold 1 value from the bus. **Enable**: Allow changing the threshold 1 value from the bus.





Change threshold 2 via the bus Options: Disable Enable

Disable: Do not allow changing the threshold 2 value from the bus. **Enable**: Allow changing the threshold 2 value from the bus.

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Buildings •	1.1.1 M/DA6.10.1 > A:heating				
X Trades					Q
Topology •	General	Brightness value for switch ON of heating	100%(255)	-	G
Group Addresses Devices	G:sequence 1			*	
Devices Viamic Folders		Fade time for switch ON of heating(0255s)	1	÷	
 Dynamic Folders 1.1.1 M/DA6.10.1 	Channel A	Fade time for switch OFF of heating(0255s)	1	*	
IIII M/DA0.10.1 III M/DA0.10.1 IIII M/DA0.10.1 III M/DA0.10.1	A>dimming config	rude time for switch of For heading(0.255s)	*	Ŧ	
I: General - Sequence 1		PWM cycle time set(165535min)	1	*	
2 10: Output A - Channel output	A:function				
11: Output A - Relative dimmin	A:staircase light	PWM cycle time set(059sec)	0	* *	
19: Output A - Staircase light	, ostan case ngrit				
22: Output A - Flashing	A:flashing	Control telegram is received as	Ibit pwm("ON"-start,"OFF"-stop)		
23: Output A - Scene(8bit)	Asscene		1byte("255"-ON,"0"-OFF,other valve)		
24: Output A - Scene dimming	Ascene	The scale of ON	50%(128)		
25: Output A - Threshold input	A:threshold	The scale of ON	50%(120)		
■式 28: Output A - Heat with 1bit c	A:heating	Running automatically after bus voltage	NO	-	
■之 30: Output B - Channel output	Atheating	recovery			
■2 31: Output B - Relative dimmin	Channel B	Forced position of PWM	NO YES		
2 50: Output C - Channel output					
■ \$ 51: Output C - Relative dimmin	B>dimming config				
■之 70: Output D - Channel output	Channel C				
71: Output D - Relative dimmi					
■ ‡ 90: Output E - Channel output ■ ↓ 21: Output E - Relative dimmin	C>dimming config				
110: Output F - Channel output	Channel D				
111: Output F - Channel Sutput					
-el 111. Output i - Relative dimini	D>dimming config				
	Group Objects Parameter				
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5.6.5 A: "Heating" function

Fig. 4.5: "Heating" window.

• **Brightness value for switching heating ON** Configure the brightness for switching ON

• Fade time for switching heating ON (0-255 s) Configure the time for switching ON in seconds

• Fade time for switching heating OFF (0-255 s) Configure the time for switching OFF in seconds

• PWM cycle time set (1-65535 mins) Options: 1-65535 mins

The minimum cycle time is 1 minute





• PWM cycle time set (1-59 s) Options: 1-59 s

The cycle time is set in seconds

• Control telegram

Type of control can be 1 bit or 1 byte. Options: **1 bit PWM (ON-start/OFF-stop)**

1 byte (255 - ON,O - OFF, other value)

1 bit PWM (ON - start/OFF - stop): The PWM starts and switches ON when telegram value "1" is received, and stops when "0" is received.

1 byte (255 - ON/O - OFF/other value): Switching ON when telegram value "255" is received, and switching OFF when "O" is received. The PWM runs and the PWM pulse width is set according to the telegram value received (1 to 254)

• The scale of ON

Options:

This parameter sets the value of the PWM (pulse width).

0% (0FF) 10% (26) 20% (51) 30% (77) 40% (102) 50% (128) 60% (153) 70% (179) 80% (204) 90% (230) 100% (0N)

Running automatically after bus voltage recovery

The PWM runs automatically when set to YES, the PWM runs manually when set to NO.

Options: NO

YES

YES: PWM runs automatically at power on.

NO: PWM runs manually.



6. Communication objects description

Note: Take channel A as an example, other channels refer to channel A.

6.1 "General" objects

Number	Name	Object Function	D G	Length	С	R	W	Т	U	Data	Type	Priori
(0	General	Send cycles		1 bit	С	R	-	Т	-	1 bit	DPT	Low
1	General	Sequence 1		1 bit	С	-	W	-	U	1 bit	DPT	Low
22	General	Sequence 2		1 bit	С	-	W	-	U	1 bit	DPT	Low
⊒ ‡]3	General	Sequence 3		1 bit	С	-	W	-	U	1 bit	DPT	Low
⊒ ‡4	General	Sequence 4		1 bit	С	-	W	-	U	1 bit	DPT	Low
⊒ ‡ 5	General	Sequence 5		1 bit	С	-	W	-	U	1 bit	DPT	Low

NO	Object name	Function	Flags	Data type
0	General	Send cycles	CRT	DPT 1.003 1 bit

This communication object is always active and valid. Invert the telegram value sent to the bus in the next frame. E.g. the last telegram value is "1", the next telegram value is "0"

1-5	General	Sequence 1-5	CWU	DPT 1.010
				1 bit

These communication objects are used to start or stop a sequence. Send telegram value "1" to start a sequence. Send telegram value "0" to stop a sequence.

6.2 "Channel A output" objects

Number	* Name	Object Function	Description	Group Address	Length	C	R	W	Т	U	Data Type	Priorit
⊉ 0	General	Send cycles			1 bit	С	R	-	т	-	enable	Low
₹10	Output A	Channel output			1 bit	С	-	W	-	U	switch	Low
₹ 11	Output A	Relative dimming(4bit)			4 bit	С	-	W	-	U	dimming control	Low
₹12	Output A	Absolute dimming(8bit)			1 byte	С	-	W	-	U	percentage (0100%)	Low
 ‡ 13	Output A	Respone state(1bit)			1 bit	С	R	-	т	-	switch	Low
₹ 14	Output A	Respone state(1byte)			1 byte	С	R	-	Т	-	percentage (0100%)	Low
₽15	Output A	R/W total ON time			2 bytes	С	R	W	Т	U	2-byte unsigned value	Low
₹16	Output A	Alarm when total ON time out			1 bit	С	R	-	Т	-		Low
₽ 19	Output A	Staircase light			1 bit	С	-	W	-	U	switch	Low
₽20	Output A	Change staircase light time			2 bytes	С	-	W	-	U	2-byte unsigned value	Low
₽21	Output A	Warning staircase light			1 bit	С	R	-	Т	-		Low
₽ 22	Output A	Flashing			1 bit	С	-	W	-	U	switch	Low
₽23	Output A	Scene(8bit)			1 byte	С	-	W	-	U	8-bit unsigned value	Low
₽24	Output A	Scene dimming(4bit)			4 bit	С	-	W	-	U	dimming control	Low
₽25	Output A	Threshold input			1 byte	С	-	W	-	U	8-bit unsigned value	Low
₽26	Output A	Change threshold 1			1 byte	С	-	W	-	U	8-bit unsigned value	Low
₽27	Output A	Change threshold 2			1 byte	С	-	W	-	U	8-bit unsigned value	Low
₽28	Output A	Heat with 1bit control			1 bit	С	-	W	-	U	switch	Low
₽ 29	Output A	Forced position			1 bit	С	-	W	-	U	switch	Low

NO	Object name	Function	Flags	Data type
10	Output A	Output channel	CWU	DPT 1.001 1 bit



This communication object of the output channel is used for switching ON/OFF, the dimmer output channel is ON when the object receives the value "1". The dimmer output channel is OFF when the object receives the value "0"

			-	
11	Output A	Relative dimming	CWU	DPT 3.007
		(4 bit)		4 bit

This communication object of the output channel is used for relative dimming. Relative dimming mode is UP or DOWN. Dimming UP when the received telegram value is increased, and dimming DOWN when the received telegram value is decreased.

12	Output A	Absolute dimming	CWU	DPT 5.001
		(8 bit)		1 byte

This communication object of the output channel is used for absolute dimming. The output channel absolute dimming to a brightness according to a received telegram value.

6.3 "Response" objects

USER MANUAL

NO	Object name	Function	Flags	Data type				
13	Output A	Response status (1 bit)	CRT	DPT 1.001 1 bit				
	This communication object is used for the output channel A response state. If the channel state is ON the response state is "1", otherwise the state is "0".							
14								
	This communication object is used for the output channel A brightness response.							

6. 4 "Statistics ON time" objects

NO	Object name	Function	Flags	Data type			
15	Output A	R/W total ON time	CRWTU	DPT 7.007 2 byte			
	This communication object is used for changing the initial value. Statistical ON time increases again every hour.						
16	Output A	Alarm when total ON times out	CRT	DPT 1.005 1 bit			
	This communication object is used for the alarm when the statistical ON time reaches a set maximum value.						





6.5 "Staircase light" objects

USER MANUAL

NO	Object name	Function	Flags	Data type			
19	Output A	Staircase light	CWU	DPT 1.001 1 bit			
	This communication object is used for starting or stopping the staircase light. The staircase light starts when the telegram value "1" is received.						
20	Output A	Change staircase light time	CWU	DPT 7.005 2 byte			
This co	mmunication ob	ject is used for cha	nging the stair	case light time.			
21	Output A	Staircase light warning	CRT	DPT 1.005 1 bit			
This co	This communication object is used for the staircase light warning.						

4.6 "Flashing" objects

NO	Object name	Function	Flags	Data type
22	Output A	Flashing	CWU	DPT 1.001 1 bit

This communication object is used for flashing the channel light. The channel light flashes when the start value is received.

6.7 "Scene" objects

NO.	Object name	Function	Flags	Data type
23	Output A	Scene (8 bit)	CWU	DPT 18.001 1 byte

This communication object is used for calling or saving the output channel scene

See the following explanation for scene control:

Telegram value:

C R N N N N N N

C: 0 - Call scene

1 - Store scene (If scene allocated and the scene is in the current switch state)

R: Reserved



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	N: Scene no. (bin: 000000-111111 = no.1-64)					
Exa	Example: Hexadecimal					
	00hcall scene 1 (if scene allocated) 01hcall scene 2 (if scene allocated) 3Fhcall scene 64 (if scene allocated)				ted)	
80hstore scene 1 (if scene allocated) 81hstore scene 2 (if scene allocated) BFhstore scene 64 (if scene allocated)						
24	Οι	utput N	Scene dimming (4 bit)	CWU	DPT 3.007 4 bit	
This communication object is used for dimming the output channel scene						

6.8 "Threshold" objects

NO	Object name	Function	Flags	Data type	
25	Output A	Threshold input	CWU	DPT 5.004 1 byte	
If this communication object is active, the input value of the telegram received from the bus is compared with threshold 1 and threshold 2 to calculate the switch state according to the database setting.					
26	Output A	Change threshold 1	CWU	DPT 5.004 1 byte	
Change threshold 1 value via the bus.					
27	Output A	Change threshold 2	CWU	DPT 5.004 1 byte	
Change threshold 2 value vie the hus					

Change threshold 2 value via the bus.

6.9 "Heating" objects

NO	Object name	Function	Flags	Data type	
28	Output A	Heat with 1 bit control	CWU	DPT1.001 1 bit	
If heating actuator is selected, this communication object is displayed and is valid by default. PWM starts when telegram "1" is received, PWM stops when telegram "0" is received, it starts running automatically when power on is set by ETS.					
28	Output A	Heat with 1 byte control	CWU	DPT 5.004 1 byte	



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If "heat with byte control" is selected, this communication object has been displayed and is valid. Can modify value of PWM by receiving 1 byte data. Output is always ON if received value is 255, output OFF if received value is 0, otherwise PWM output is according to the value of the telegram received from the bus.6

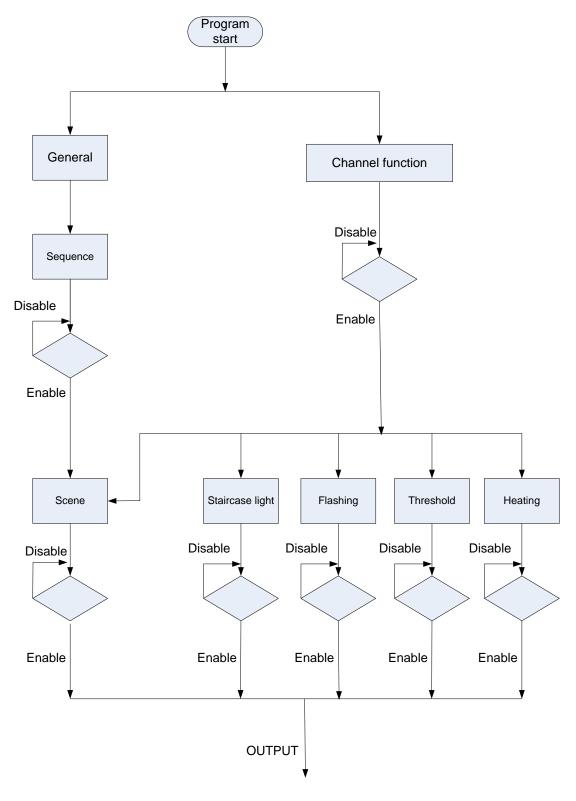
29	Output A	Forced position	CWU	DPT 1.001
				1 bit





7. Application

7.1 Program functions diagram





8 Product disposal

This device must not be disposed of as unsorted household waste. Used devices must be disposed of correctly. Contact your local town council for more information.

9 ESYLUX Manufacturer's guarantee

ESYLUX products are tested in accordance with applicable regulations and manufactured with the utmost care. The guarantor, ESYLUX Deutschland GmbH, Postfach 1840, D-22908 Ahrensburg, Germany (for Germany) or the relevant ESYLUX distributor in your country (visit www.esylux.com for a complete overview) provides a guarantee against manufacturing/material defects in ESYLUX devices for a period of three years from the date of manufacture. This guarantee is independent of your legal rights with respect to the seller of the device.

The guarantee does not apply to natural wear and tear, changes/interference caused by environmental factors or damage in transit, nor to damage caused as a result of failure to follow the user or maintenance instructions and/or as a result of improper installation. Any illuminants or batteries supplied with the device are not covered by the guarantee.

The guarantee can only be honoured if the device is sent back with the invoice/receipt, unchanged, packed and with sufficient postage to the guarantor, along with a brief description of the fault, as soon as a defect has been identified. If the guarantee claim proves justified, the guarantor will, within a reasonable period, either repair the device or replace it. The guarantee does not cover further claims; in particular, the guarantor will not be liable for damages resulting from the device's defectiveness. If the claim is unfounded (e.g. because the guarantee has expired or the fault is not covered by the guarantee), then the guarantor may attempt to repair the device for you for a fee, keeping costs to a minimum.