

8-CHANNEL UNIVERSAL DIMMING ACTUATOR RLC+LED RE KNT 008



USER MANUAL

General Description

- Dimming Actuator with 8 output channels, designed for the control of resistive, inductive, capacitive and LED loads.
- Phase-cut dimming technology, both leading and trailing edge, configurable by ETS parameter:
 - 230V dimmable LED Lamps → Leading or Trailing-edge dimming, depending on the lamp.
 - 12V dimmable LED Lamps with Electronic transformer → Trailing-edge dimming.
 - Incandescent and 230V Halogens → Leading or Trailing-edge dimming.
 - Halogens with Electronic transformer → Trailing-edge dimming.
- Modular housing (8 modules width), for DIN-rail mounting.
- The 8 channels can be configured as:
 - Independent channels: It allows to control the different output channels independently.
 - Sequencer: The 8 channels are controlled together at the same time with predefined sequences.
- It incorporates a keyboard on its front that allows manual control of each of the channels.
- Protected against overloads and short circuits. It incorporates heating protection with resettable operation.
- It has an LED indicating error due to over-temperature or overload.
- Programming and commissioning via ETS5 or later versions.
- Built-in KNX Bus Coupler Unit (BCU).

Technical Data

Nominal voltage	230V~ 50Hz
Consumption from Mains	< 1,5W
Supply from KNX Bus	21 ~ 32V _{cc}
Consumption from KNX Bus	<3mA
Connection	Connecting terminal
Commissioning	ETS5 or later
KNX Media	TP1
Load type	RLC + LED
Channels	8
Configuration mode	System Mode
Maximum Load (see Instructions file)	230V LED lamps leading-edge: 4 – 120VA 230V LED lamps trailing-edge: 4 – 250W 12V LED lamps with electronic transfo: 10 – 250W (of trafo) Incandescence & 230V Halogens: 4 – 250W 12V Halogens with electronic transfo: 20 – 250W
Dimensions	8 modules, 140 x 65 x 90 mm
Mounting	DIN-rail 46277
Working Temperature	-5°C ~ +45°C
Storage Temperature	-30°C ~ +70°C
Protection degree	IP20 (EN60529)
Directives	Low-voltage 73/23/EEC, EN60669-1, 2-1 & 2-3
According to the Standards	KNX Standard 2.0 / EN60669-1, 2-1, 2-3

CONFIGURATION

General Parameters

There are different general parameters that must be initially set:

<ul style="list-style-type: none"> - Configuration <li style="background-color: #e0e0e0;">+ General Parameters + Channel 1 + Channel 2 + Channel 3 + Channel 4 + Channel 5 + Channel 6 + Channel 7 + Channel 8 + Push buttons 	<p>Operating Mode <input checked="" type="radio"/> 8-channel Dimmer <input type="radio"/> Sequencer</p> <p>Disable all Push buttons <input type="checkbox"/></p> <hr/> <p>Modes</p> <p>Channel 1 Mode KNX Bus ▼</p> <p>Channel 2 Mode KNX Bus ▼</p> <p>Channel 3 Mode KNX Bus ▼</p> <p>Channel 4 Mode KNX Bus ▼</p> <p>Channel 5 Mode KNX Bus ▼</p> <p>Channel 6 Mode KNX Bus ▼</p> <p>Channel 7 Mode KNX Bus ▼</p> <p>Channel 8 Mode KNX Bus ▼</p> <hr/> <p>Alarms</p> <p>Enable Dimmer Overload Feedback <input type="checkbox"/></p> <p>Enable Dimmer Temperature Feedback <input type="checkbox"/></p>
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- **Operating Mode:** determines the type of operation that the Actuator will have. There are 2 options available:
 - 8-channel Dimmer: each of the channels is controlled independently, both by the Bus and manually.
 - Sequencer: the 8 channels are controlled at the same time through the Bus, doing previously established sequences. In this mode of operation, the front keys will not have any function, so the Modes of each Channel will disappear.
- **Disable all Push buttons:** allows to enable, or disable, manual control from the front push buttons. Marking this box, the parameterization of the buttons disappears, and all its functionality is disabled, both manually and through the Bus.
- **Modes:** set the operating mode of each of the channels. This option is only available if “8-channel Dimmer” is selected.

Channel 1 Mode	<div style="border: 1px solid #ccc; background-color: #f0f0f0; padding: 5px;"> <div style="background-color: #e0e0e0; padding: 2px;">KNX Bus ▼</div> <div style="background-color: #e0e0e0; padding: 2px;">KNX Bus ✓</div> <div style="padding: 2px;">Manual Control</div> <div style="padding: 2px;">Manual temporary and then KNX Bus</div> </div>
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- **KNX Bus:** Bus control. The keys work as programmed in the ETS. Manual control of the actuator is possible by pressing the two keys, ON and OFF, of the corresponding channel at the same time. It will not leave this mode, and will ignore the telegrams of the bus, until both keys are pressed again simultaneously.
- **Manual Control:** control only through the Actuator keys. All channel objects disappear and only obey to the commands of turning on/off or dimming from the buttons. In this state, the white LED of the corresponding channel will remain on. It is not possible to exit from this mode even by pressing both channel keys simultaneously.
- **Manual temporary and then KNX Bus:** after programming with the ETS, or when pressing both keys ON / OFF, the channel will go into manual mode and will ignore the Bus telegrams. This will be indicated by the

flashing of the white LED of the corresponding channel. Once the time set by parameter has elapsed, or by pressing both keys at the same time, it will exit the manual mode and it will return to obey to the bus telegrams.

- **Alarms:** enable, or not, Alarm objects due to overload or too high temperature in the dimmer.

Alarms	
Enable Dimmer Overload Feedback	<input type="checkbox"/>
Enable Dimmer Temperature Feedback	<input type="checkbox"/>

- Enable Dimmer Overload Feedback: objects that indicate the switching-off of the channels due to excess load or short circuit at its output. Each object controls 2 output channels simultaneously (1+2, 3+4, 5+6 & 7+8).
- Enable Dimmer Temperature Feedback: objects that indicate the temperature, or a critical temperature, in the dimmer.

Enable Dimmer Temperature Feedback	<input checked="" type="checkbox"/>
Cyclical sending (sec) (0 = no trans)	<input type="text" value="3600"/>
High Temperature Alarm (°C)	<input type="text" value="115"/>
Critical Temperature Alarm (°C)	<input type="text" value="125"/>

- Cyclical sending: cyclic sending time, in seconds, of the temperature value in the dimmer. A "0" disables cyclic sending.
- High Temperature Alarm: set the temperature at which a telegram will be sent as a warning that the dimmer is reaching too high values.
- Critical Temperature Alarm: sets the critical temperature. Taking into account that when the dimmer reaches 130°C it will be automatically turned off, this value must be adjusted so that it warns before reaching the limit and can act accordingly.

General Communication Objects

	Number *	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
↔	107	Dimmer Temperature	Temperature	2 bytes	C	R	-	T	-	temperature (°C)	Low
↔	108	High Temperature Alarm	1 = High Temperature	1 bit	C	-	-	T	-	alarm	Low
↔	109	Critical Temperature Alarm	1 = Critical Temperature	1 bit	C	-	-	T	-	alarm	Low
↔	110	Over-Heat Alarm	1 = Overload	1 bit	C	-	-	T	-	alarm	Low
↔	120	Overload Ch1 or Ch2	1 = Overload	1 bit	C	-	-	T	-	alarm	Low
↔	140	Overload Ch3 or Ch4	1 = Overload	1 bit	C	-	-	T	-	alarm	Low
↔	160	Overload Ch5 or Ch6	1 = Overload	1 bit	C	-	-	T	-	alarm	Low
↔	180	Overload Ch7 or Ch8	1 = Overload	1 bit	C	-	-	T	-	alarm	Low

Number	Name	Function	I/O	Description
107	Dimmer Temperature	Temperature	Output	Temperature at which the inside of the dimmer is
108	High Temperature Alarm	I = High Temperature	Output	Indicates that the regulator has reached the temperature set by parameter as "High"
109	Critical Temperature Alarm	I = Critical Temperature	Output	Indicates that the regulator has reached the temperature set by parameter as "Critical"
110	Over-Heat Alarm	I = Overload	Output	In case of a temperature equal to or higher than 130°C, the dimmer will be automatically turned-off and this object will be set to "1"
120	Overload Ch1 or Ch2	I = Overload	Output	Switch-off warning due to overload or short circuit on channels 1 or 2
140	Overload Ch3 or Ch4	I = Overload	Output	Switch-off warning due to overload or short circuit on channels 3 or 4
160	Overload Ch5 or Ch6	I = Overload	Output	Switch-off warning due to overload or short circuit on channels 5 or 6
180	Overload Ch7 or Ch8	I = Overload	Output	Switch-off warning due to overload or short circuit on channels 7 or 8

8-channel Dimmer Functional Parameters

In “8-channel Dimmer” mode, a series of functional parameters are available for each of the outputs:

– Configuration	Dimming Mode	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
General Parameters	Minimum Brightness (%)	1
– Channel 1	Maximum Brightness (%)	100
Functional Parameters	Soft Turn-On Time (x 0,1sec)	10
Additional Parameters	Soft Turn-Off Time (x 0,1sec)	10
+ Channel 2	Dimming Speed (from 0% to 100% x 0,1sec)	50
+ Channel 3	OFF Brightness (%)	0
+ Channel 4	Switch-On mode	Switch-On at Last Brightness
+ Channel 5		
+ Channel 6		
+ Channel 7		
+ Channel 8		
+ Push buttons		

• **Dimming Mode:** sets the dimming type to be applied to the lamps. This parameter must be adjusted according to the features of the lamp and the type of dimming that the lamp admits:

- 230V dimmable LED Lamps ^(*) → Leading or Trailing-edge dimming, depending on the lamp.
- 12V dimmable LED Lamps with Electronic transformer → Trailing-edge dimming.
- Incandescent and 230V Halogens → Leading or Trailing-edge dimming.
- Halogens with Electronic transformer → Trailing-edge dimming.

^(*) In case of doubt, check it with the lamp manufacturer requesting information on the type of dimming that the lamp admits.

• **Minimum Brightness (%):** minimum allowed dimming value. This setting is especially important with LED lamps, which can blink, or turn off, when lowering certain brightness levels. If a dimming value higher than 0% is received but less than the set Minimum value, the Actuator will apply the parameterized value as “Minimum Brightness”. This parameter can be set between 1% and 75%.

• **Maximum Brightness (%):** maximum allowed dimming value. This setting allows to set a maximum brightness level. If a dimming value higher than the one set in this parameter is received, the Actuator will apply the parameterized value as “Maximum Brightness”. This parameter can be set between 25% and 100%.

• **Soft Turn-On Time (x 0,1sec):** sets the time that elapses since, starting off, receives a switch-on telegram and reaches its final value. This parameter can be set between 0,1sec and 6553,5sec.

• **Soft Turn-Off Time (x 0,1sec):** sets the time that elapses since, starting on, receives a switch-off telegram, or 0%, and reaches its final value. This parameter can be set between 0,1sec and 6553,5sec.

• **Dimming Speed (from 0% to 100% x 0,1sec):** sets the time that elapses from 0% to 100%, and vice versa, when doing a Relative Dimming (not Absolute). This parameter can be set between 0,1sec and 6553,5sec.

- **OFF Brightness (%):** sets the brightness level to which the dimmed output will be set when receiving a switch-off telegram. Although the value 0% is sent via the Bus (required by the KNX Regulations), the lamp will be at this level in Off mode. This parameter can be set between 0% and 100%.
- **Switch-On mode:** determines the level to which it is set after receiving a switch-on telegram.

Switch-On mode	Switch-On at Last Brightness Switch-On at Last Brightness ✓ Switch-On at Maximum Switch-On at this Brightness (%)
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- Switch-On at Last Brightness: the lamps are turned on at the same level they had before they were last turned off.
- Switch-On at Maximum: the lamps are switched-on to the maximum set by parameter in “Maximum Brightness”.
- Switch-On at this Brightness (%): the lamps are switched-on at the set brightness value. This value must be higher than the one set in “Minimum Brightness” and less than “Maximum Brightness”. Otherwise, the switching will be carried out according to the limits established in these 2 parameters.

Switch-On mode	Switch-On at this Brightness (%)
Switch-On Brightness Value (%)	3

8-channel Dimmer Additional Parameters

In “8-channel Dimmer” mode, a series of additional parameters are available for each output:

Configuration	Enable Absolute Dimming	<input checked="" type="checkbox"/>
General Parameters	Enable object: Dimming Speed	<input type="checkbox"/>
	Enable Timer Function	<input type="checkbox"/>
Channel 1	Enable object: Block Dimmer	<input type="checkbox"/>
	Enable object: Forced Control	<input type="checkbox"/>
Functional Parameters	Enable Scenes Control	<input type="checkbox"/>
	Enable Sequential Operation	<input type="checkbox"/>
Additional Parameters	Action after power supply fault	Switch-Off
Channel 2	Absolute Dimming	
Channel 3	Fade Time (x 0,1sec)	50
Channel 4		
Channel 5		
Channel 6		
Channel 7		
Channel 8		
Push buttons		

- **Enable Absolute Dimming:** enables a 1-byte object that allows the reception of dimming values in %.

Absolute Dimming

Fade Time (x 0,1sec)

- Fade Time (x 0,1sec): sets the transition time from the initial value to the final value received. This time will also be applied if it is Off and a dimming value is received in %, but not on the contrary. It can be adjusted between 0.1sec and 6553.5sec.

- **Enable object: Dimming Speed:** allows to enable a 2-byte object that allows changing the relative, not absolute, dimming speed through the bus.

- **Enable Timer Function:** enables the timing function with its corresponding 1-bit object to start or stop it. The switch-on will be carried out at the value established by the functional parameter previously.

Timed Switch Function

Timer Time Delay (sec)

Pre-warning time (sec)

- Timer Time Delay (sec): determines the time that the output will be On after receiving the starting order of the timing function.
- Pre-warning time (sec): the output of the dimmer will flash, 1sec On and 1sec Off, as a warning the preset time before the end of the timing.

- Enable object: Block Dimmer:** allows to enable a 1-bit object that blocks the corresponding dimming channel and does not allow its control. When '1' is received through this object, any action that is executing that channel will be stopped and it will remain at the dimming level it has. The dimming channel will be disabled until that object is set to '0'. Manual control will be active even this object is set to '1'.
- Enable object: Forced Control:** enables a 2-bit object (Priority & Value) that allows forced control of the dimmer. With the Priority bit at '1', the value is set by the Value bit. If the Priority is at '0', the output is set to the Value bit, but, if another order arrives, it does not stay at that value, since it would not be in forced mode in that case.
 - 00 → the output is set to '0' but it listens to later telegrams
 - 01 → the output is set to '1' but it listens to later telegrams
 - 10 → the output is set to '0' and it does not listen to later telegrams
 - 11 → the output is set to '1' and it does not listen to later telegrams
- Enables Scenes Control:** allows to enable saving and recovering Scenes with preset values through a 1-byte object "[ChX] Scene Number Input". Up to 5 Scenes can be predefined, assigning a Scene number and the brightness value to which the output channel should be set.

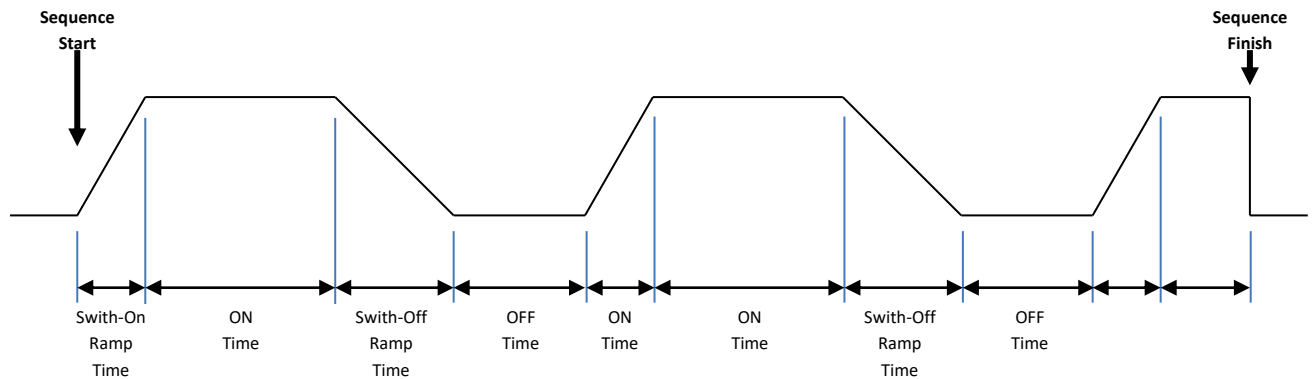
Scenes Control	
Number of Scenes attended	Five Scenes ▼
Scene 1	Scene 1 ▼
Scene 1 Brightness (%)	1 ▲▼
Scene 2	Scene 2 ▼
Scene 2 Brightness (%)	1 ▲▼
Scene 3	Scene 3 ▼
Scene 3 Brightness (%)	1 ▲▼
Scene 4	Scene 4 ▼
Scene 4 Brightness (%)	1 ▲▼
Scene 5	Scene 5 ▼
Scene 5 Brightness (%)	1 ▲▼

- Enable Sequential Operation:** enables a sequential operation of the Dimmer through a 1-bit object. Once the Sequence is started by setting the object "[ChX] Sequential Operation" to '1', it is executed cyclically until this object is not set again to '0'. When the Sequence is stopped, the output of the dimmer will be set to '0'.

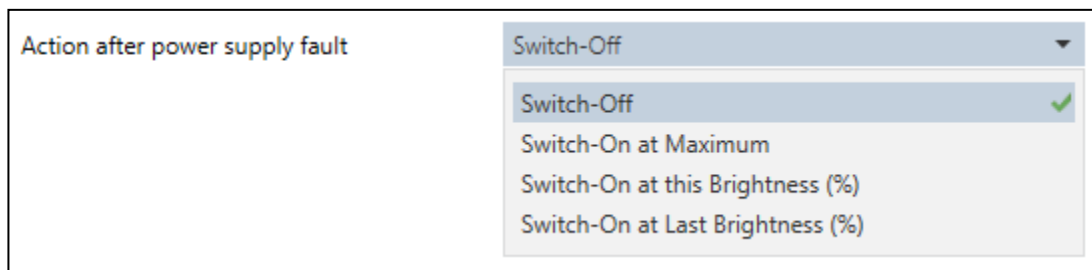
Sequential Operation	
Switch-On Ramp Time (sec)	1 ▲▼
ON time (sec)	1 ▲▼
Switch-Off Ramp Time (sec)	1 ▲▼
OFF time (sec)	1 ▲▼

- Switch-On Ramp Time (sec): time from the starting value (0%) to the final value (100%) when the "[ChX] Sequential Operation" object is set to '1'.
- ON time (sec): time during which the output is in the On state.

- **Switch-Off Ramp Time (sec):** time that elapses from the final value (100%) to the starting value (0%) of switching-off.
- **OFF time (sec):** time during which the output is in the Off state.



- **Action after power supply fault:** establishes the behavior of the dimmer after a power failure of the 230V supply or the KNX Bus.



- **Switch-Off:** the luminaires will return off.
- **Switch-On at Maximum:** the luminaires will return to the Maximum set by parameter.
- **Switch-On at this Brightness (%):** the luminaires will return to the set level.
- **Switch-On at Last Brightness (%):** the luminaires will return to the same level they had before the cut.

8-channel Dimmer Communication Objects

	Number *	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
■↔	1	[Ch1] Switch Input	1 = On, 0 = Off	1 bit	C	-	W	-	-	switch	Low
■↔	2	[Ch1] Relative Control Input	Dimming Control	4 bit	C	-	W	-	-	dimming control	Low
■↔	3	[Ch1] Absolute Dimming Input	Dimming Value	1 byte	C	-	W	-	-	percentage (0..100%)	Low
■↔	4	[Ch1] Timed Switch Start/Stop Input	1 = Start, 0 = Stop	1 bit	C	-	W	-	-	start/stop	Low
■↔	5	[Ch1] Forced Input	Forced Control	2 bit	C	-	W	-	-	enable control	Low
■↔	6	[Ch1] Scene Number Input	Scene Number Control	1 byte	C	-	W	-	-	scene control	Low
■↔	7	[Ch1] Switch Feedback	1 = On, 0 = Off	1 bit	C	-	-	T	-	switch	Low
■↔	8	[Ch1] Actual Dimming Value Feedback	Dimming Value	1 byte	C	-	-	T	-	percentage (0..100%)	Low
■↔	9	[Ch1] Dimming Speed (from 1% to 100%)	100 msec units	2 bytes	C	-	W	-	-	time (100 ms)	Low
■↔	10	[Ch1] Block Dimmer Input	1 = Blocked, 0 = Not blocked	1 bit	C	-	W	-	-	enable	Low
■↔	11	[Ch1] Sequential Operation	1 = On, 0 = Off	1 bit	C	-	W	-	-	switch	Low
■↔	12	[Ch1] Sequential Operation Feedback	1 = On, 0 = Off	1 bit	C	-	-	T	-	switch	Low

Number	Name	Function	I/O	Description
1	[ChX] Switch Input	1 = On, 0 = Off	Input	1-bit Switching object
2	[ChX] Relative Control Input	Dimming Control	Input	Relative Dimming
3	[ChX] Absolute Dimming Input	Dimming Value	Input	Absolute Dimming
4	[ChX] Timed Switch Start/Stop Input	1 = Start, 0 = Stop	Input	Object for starting or ending timed switching
5	[ChX] Forced Input	Forced Control	Input	2-bit object for forced control of the output
6	[ChX] Scene Number Input	Scene Number Control	Input	Scene value to execute

7	[ChX] Switch Feedback	1 = On, 0 = Off	Output	Status information on/off of the output
8	[ChX] Actual Dimming Value Feedback	Dimming Value	Output	Dimming status information of the output
9	[ChX] Dimming Speed (from 1% to 100%)	100 msec units	Input	Input object to modify the relative dimming speed
10	[ChX] Block Dimmer Input	1 = Blocked, 0 = Not blocked	Input	Input object for blocking the output
11	[ChX] Sequential Operation	1 = On, 0 = Off	Entrada	Sequential function activation
12	[ChX] Sequential Operation Feedback	1 = On, 0 = Off	Output	Information about the Sequential function

Sequencer Functional Parameters

In “Sequencer” mode, a series of general settings for the channels are available:

- Configuration	Enable Sequence Number 1	<input type="checkbox"/>
- General Parameters	Enable Sequence Number 2	<input type="checkbox"/>
- Channel Sequencer	Enable Sequence Number 3	<input type="checkbox"/>
- Configuration	Enable Sequence Number 4	<input type="checkbox"/>
+ Push buttons	Enable Sequence Number 5	<input type="checkbox"/>
	Dimming type Channel 1	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
	Dimming type Channel 2	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
	Dimming type Channel 3	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
	Dimming type Channel 4	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
	Dimming type Channel 5	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
	Dimming type Channel 6	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
	Dimming type Channel 7	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
	Dimming type Channel 8	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
	Action after power supply fault	<input checked="" type="radio"/> OFF <input type="radio"/> Call one Sequence

- **Enable Sequence Number X:** allows to enable up to 5 different Sequences, which consists of a series of Steps in combination of all the output channels.

Sequence 1	
Do this Sequence	Once ▼
Number of Steps	One Step ▼

- Do this Sequence: sets the following sequence to be done.

Do this Sequence	Once ▼ <hr/> Once ✓ Once and continue with Sequence 1 Once and continue with Sequence 2 Once and continue with Sequence 3 Once and continue with Sequence 4 Once and continue with Sequence 5
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- Number of Steps: determines the number of Steps (levels) that each Sequence will have.

Number of Steps	One Step ▼ <hr/> One Step ✓ Two Steps Three Steps Four Steps Five Steps
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In each of the Steps it is possible to define the Initial Luminosity Value of each Channel, the End and the time between one value and another.

STEP 1	
Step Time (x 0,1sec)	100 ▲▼
Brightness Initial Value (%)	
Channel 1	100 ▲▼
Channel 2	100 ▲▼
Channel 3	100 ▲▼
Channel 4	100 ▲▼
Channel 5	100 ▲▼
Channel 6	100 ▲▼
Channel 7	100 ▲▼
Channel 8	100 ▲▼
Brightness Final Value (%)	
Channel 1	100 ▲▼
Channel 2	100 ▲▼
Channel 3	100 ▲▼
Channel 4	100 ▲▼
Channel 5	100 ▲▼
Channel 6	100 ▲▼
Channel 7	100 ▲▼
Channel 8	100 ▲▼

- **Dimming type Channel X:** sets the type of dimming that will apply the corresponding output channel.

Dimming type Channel 1	<input checked="" type="radio"/> Leading-edge Dimming <input type="radio"/> Trailing-edge Dimming
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This parameter must be set according to the type of lamp or luminaire connected:

- 230V Dimmable LED Lamps ^(*) → Leading- or Trailing-edge dimming, depending on the lamp.
- 12V Dimmable LED Lamps with Electronic transfo → Trailing-edge dimming.
- Incandescence and 230V Halogens → Leading- or Trailing-edge dimming.
- Halogens with Electronic transfo → Trailing-edge dimming.

^(*) In case of doubt, consult the lamp manufacturer requesting information on the type of dimming that the lamp admits.

- **Action after power supply fault:** determines the behavior of the actuator after a bus or mains fault.

Action after power supply fault	<input checked="" type="radio"/> OFF <input type="radio"/> Call one Sequence
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Sequencer Communication Objects

	Number ^	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
↔	97	[Seq1] SwitchOnOff	0 = Off, 1 = On	1 bit	C	-	W	-	-	switch	Low
↔	98	[Seq1] SwitchOnOff Feedback	0 = Off, 1 = On	1 bit	C	-	-	T	-	switch	Low
↔	99	[Seq2] SwitchOnOff	0 = Off, 1 = On	1 bit	C	-	W	-	-	switch	Low
↔	100	[Seq2] SwitchOnOff Feedback	0 = Off, 1 = On	1 bit	C	-	-	T	-	switch	Low
↔	101	[Seq3] SwitchOnOff	0 = Off, 1 = On	1 bit	C	-	W	-	-	switch	Low
↔	102	[Seq3] SwitchOnOff Feedback	0 = Off, 1 = On	1 bit	C	-	-	T	-	switch	Low
↔	103	[Seq4] SwitchOnOff	0 = Off, 1 = On	1 bit	C	-	W	-	-	switch	Low
↔	104	[Seq4] SwitchOnOff Feedback	0 = Off, 1 = On	1 bit	C	-	-	T	-	switch	Low
↔	105	[Seq5] SwitchOnOff	0 = Off, 1 = On	1 bit	C	-	W	-	-	switch	Low
↔	106	[Seq5] SwitchOnOff Feedback	0 = Off, 1 = On	1 bit	C	-	-	T	-	switch	Low

Number	Name	Function	I/O	Description
97	[Seq1] SwitchOn/Off	0 = Off, 1 = On	Input	1-bit object to start, or stop, Sequence 1
98	[Seq1] SwitchOn/Off Feedback	0 = Off, 1 = On	Output	1-bit Information Object of Sequence 1
99	[Seq2] SwitchOn/Off	0 = Off, 1 = On	Input	1-bit object to start, or stop, Sequence 2
100	[Seq2] SwitchOn/Off Feedback	0 = Off, 1 = On	Output	1-bit Information Object of Sequence 2
101	[Seq3] SwitchOn/Off	0 = Off, 1 = On	Input	1-bit object to start, or stop, Sequence 3
102	[Seq3] SwitchOn/Off Feedback	0 = Off, 1 = On	Output	1-bit Information Object of Sequence 3
103	[Seq4] SwitchOn/Off	0 = Off, 1 = On	Input	1-bit object to start, or stop, Sequence 4
104	[Seq4] SwitchOn/Off Feedback	0 = Off, 1 = On	Output	1-bit Information Object of Sequence 4
105	[Seq5] SwitchOn/Off	0 = Off, 1 = On	Input	1-bit object to start, or stop, Sequence 5
106	[Seq5] SwitchOn/Off Feedback	0 = Off, 1 = On	Output	1-bit Information Object of Sequence 5

Pushbuttons Parameters

Through the parameterization it is possible to configure the behavior of the front buttons of the Actuator:

- **Enable object: Disable Push button:** enables an object that allows or not to enable a preset operation to the 2 keys from one channel.
- **Push button Function:** sets the operation of the pair of buttons.

- **Not assigned:** the button pair will not have any assigned function.

- Switch: one short or long press of the upper key will carry out the On and the lower one the Off of the channel, according to the settings in the Functional Parameters.

Push button Function	Switch
Debounce time	30 msec

- Dimmer: a long press will carry out the dimming and a short press will carry out the switching.

Push button Function	Dimmer
Debounce time	30 msec
Dimming Functionality	<input checked="" type="radio"/> Dimming and Switching <input type="radio"/> Only Dimming
Long press after	0,5 sec

- Absolute Value Dimming: each of the two keys will dim the channel to the set value.

Push button Function	Absolute Value Dimming
Debounce time	30 msec
<hr/>	
Push button 1A	
Distinction between Short and Long press	<input type="checkbox"/>
Value on Short press	0
<hr/>	
Push button 1B	
Distinction between Short and Long press	<input type="checkbox"/>
Value on Short press	100

- Scenes: each of the two keys will launch a Scene. In addition, a long press can memorize the current level of dimming as a scene.

Push button Function	Scenes
Debounce time	30 msec
<hr/>	
Push button 1A	
Scene Number	1
Save Scene	<input checked="" type="radio"/> No <input type="radio"/> On Long press
<hr/>	
Push button 1B	
Scene Number	2
Save Scene	<input checked="" type="radio"/> No <input type="radio"/> On Long press

Pushbuttons Communication Objects

	Number ^	Name	Object Function	Length	C	R	W	T	U	Data Type	Priority
↔	111	[PB1] Disable Push button	1 = Disable, 0 = Enable	1 bit	C	-	W	-	-	enable	Low
↔	114	[PB1] Scene Control	Scene Control	1 byte	C	-	-	T	-	scene control	Low
↔	117	[PB1] Absolute Dimming	Dimming Value	1 byte	C	-	-	T	-	percentage (0..100%)	Low

Number	Name	Function	I/O	Description
111	[PB1] Disable Push button	1 = Disable, 0 = Enable	Input	1-bit object to disable, or not, the pair of keys
114	[PB1] Scene Control	Scene Control	Output	1-byte object for launching a Scene through the pair of keys
117	[PB1] Absolute Dimming	Dimming Value	Output	1-byte object for launching a Dimming Value through the pair of keys