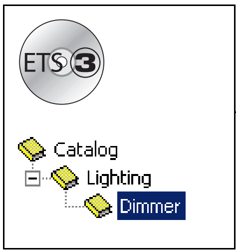
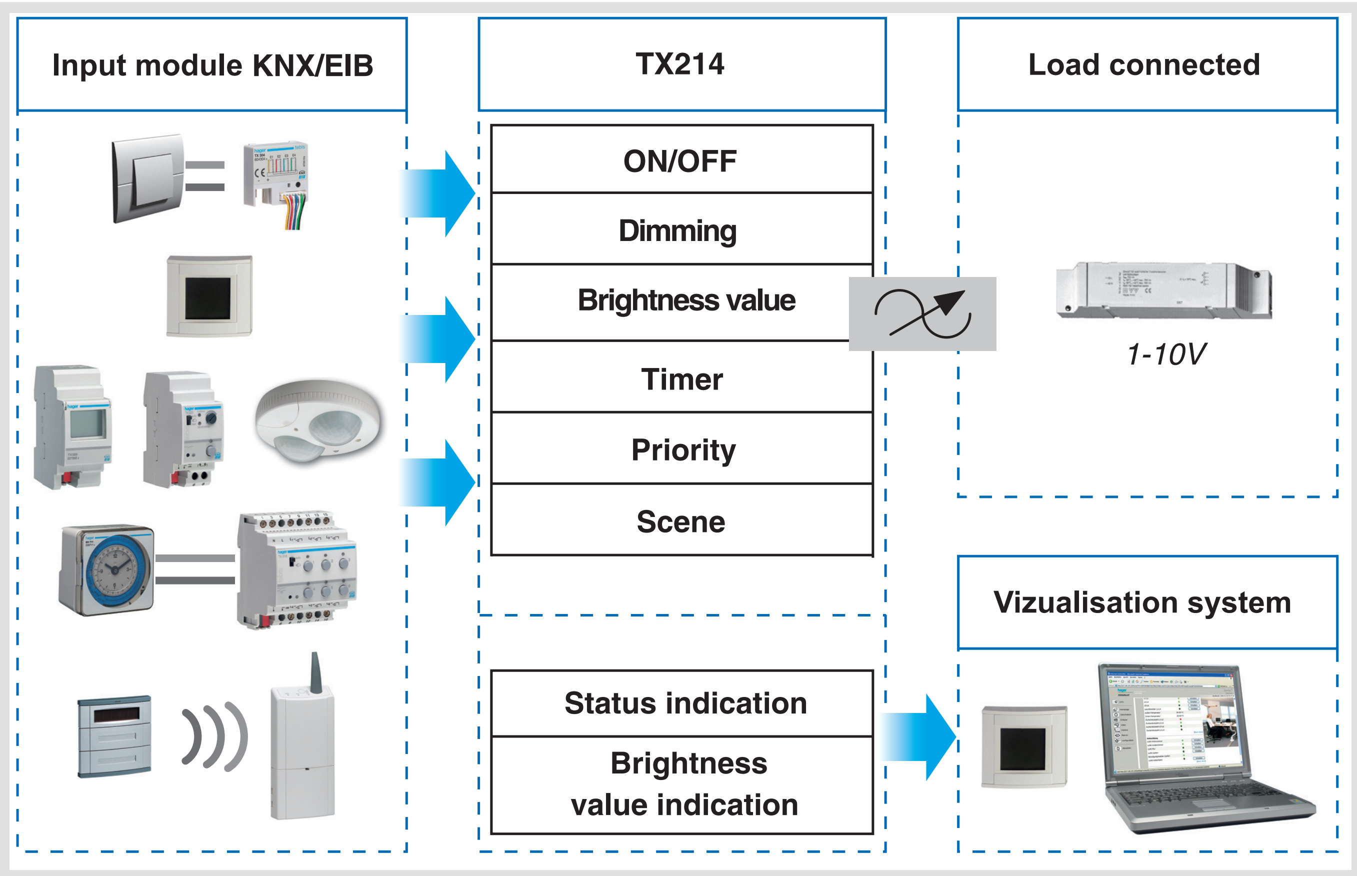


Tebis application software

TL214A V 1.x Dimming

	Product reference	Product designation
	TX 214	Dimmer 1 output 1-10V



Summary

1. Presentation of the TL214A application's Dimming functions

The TX214 dimmer driver allows dimming or ON/OFF control of lighting circuits via a 1/10V link. This 1-10V link can control remote dimmers (e.g. EV100/EV102) or electronic ballasts.

The TL214A application software can be used to configure the TX214's 1-10V Dimmer output :

Its main functions are :

ON/OFF

The ON/OFF function is used to switch a lighting circuit ON or OFF.

- ON : switching ON at the lighting level defined by parameters. Switching ON can be gradual or instantaneous.
- OFF : switching OFF. Switching OFF can be gradual or instantaneous.

The command may come from pushbuttons.

Timer

The Timer function is used to switch a lighting circuit ON or OFF for an adjustable time.
Depending on the operation mode selected, the output may be delayed for ON or OFF switching. An adjustable cut-OFF pre-warning indicates the end of the delay time by dividing the lighting level by two.

Priority

The Priority function is used to override an output to an adjustable lighting level.
This command has the highest priority. No other command is taken into account if a priority is active. Only a priority end command re-enables the other commands.
Application : Maintaining lighting ON for safety reasons.

Scene

The Scene function groups a set of outputs. These outputs can be set to an adjustable predefined status.
Pressing a single pushbutton activates a scene.

Setting of minimum and maximum dimming range limits

This function is used to define minimum and maximum output dimming levels.
These values can be defined by ETS parameterisation or directly on the front of the product.

Manual mode

The Manual mode is used to isolate the product from the bus.
The lighting circuit's brightness level can be controlled locally in this mode.

- Short key-presses : The output is controlled in ON/OFF mode.
  - If the channel's value was at least equal to 1% (ON) before switching to Manual mode, the output takes the value 0% (OFF).
  - If the channel's value was equal to 0% (OFF) before switching to Manual mode, the output takes the value 100% (ON).

The setpoint is applied immediately, without taking account of the Dimming duration when switched ON, Dimming duration when switched OFF and Brightness when switched ON parameters.

- Long key-presses : The controlled output varies between the adjustable Minimum dimming value and Maximum dimming value limits.
  - If the channel's value was strictly higher than the adjustable Minimum dimming value limit and strictly lower than the adjustable Maximum dimming value limit before switching to Manual mode : the dimming direction is identical to the last dimming direction applied to the channel.
  - If the channel's value was less than or equal to the adjustable Minimum dimming value limit before switching to Manual mode : the dimming direction will be an increase.
  - If the channel's value was higher than or equal to the adjustable Maximum dimming value limit before switching to Manual mode : the dimming direction will be a decrease.

Each new long key-press will reverse the dimming direction. The setpoint is applied immediately, without taking account of the Dimming duration when switched ON, Dimming duration when switched OFF and Brightness when switched ON parameters.

Network commands are ignored in Manual mode and the statuses of the selected outputs are maintained upon return to Auto. mode.

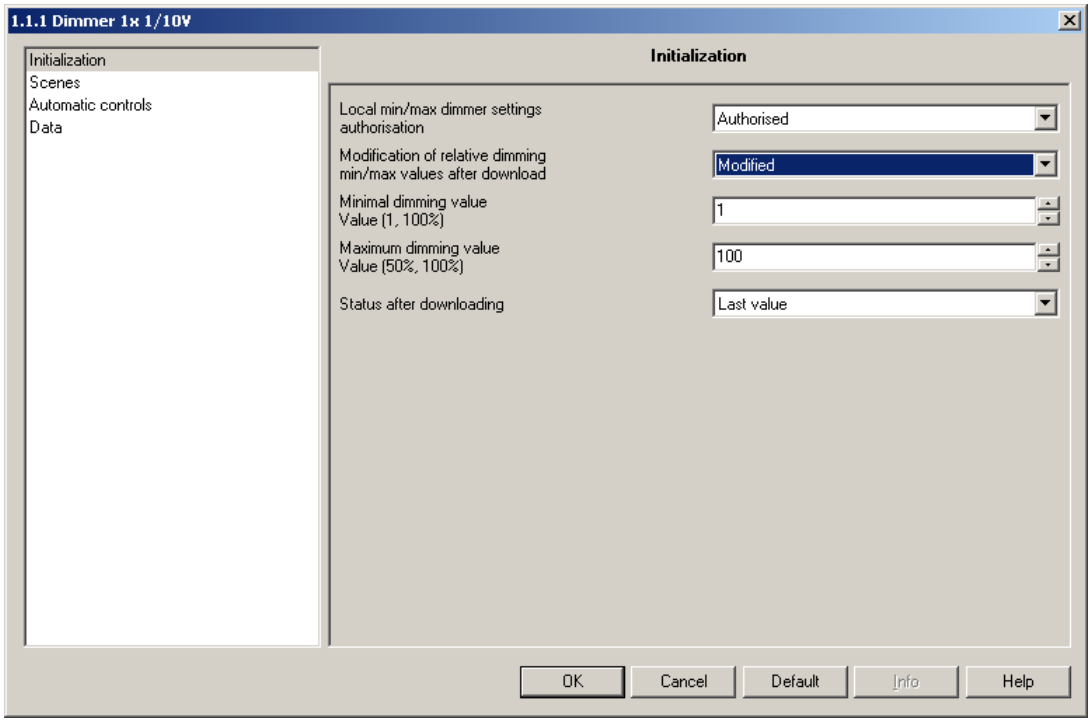
2. Dimming function configuration and parameters

2.1 Objects list

Number	Name	Object Function	Length	C	R	W	T	U	Priority
0	ON/OFF	Output 1	1 bit	C	R	W	-	-	Low
1	Dimming	Output 1	4 bit	C	R	W	-	-	Low
2	Brightness value	Output 1	1 Byte	C	R	W	-	-	Low
3	Timer	Output 1	1 bit	C	R	W	-	-	Low
4	Priority	Output 1	2 bit	C	R	W	-	-	Low
5	Scene	Output 1	1 Byte	C	R	W	-	-	Low
6	Status indication	Output 1	1 bit	C	R	-	T	-	Low
7	Brightness value...	Output 1	1 Byte	C	R	-	T	-	Low

2.2 Initialisation parameters and setting of dimming limits

➜ Parameters



Screen 1

Setting of minimum and maximum dimming range limits

The relative dimming range can be defined on the product or via an ETS parameter.

Local setting of Min. and Max. limits

A 4-position switch on the front of the product provides access to the following modes :

- Auto
- Min
- Max
- Manual

The Min and Max positions allow you to set the output's minimum and maximum lighting levels. These can be set by storing the output's current lighting level after a long key-press on the output pushbutton on the front of the product. Storage is confirmed by double-flashing of the LED associated to the channel.

ETS parameters

In the case of ETS downloading, you can :

- Not modify the limits set locally.
- Replace the limits set locally by the parameter values.

After download, you can :

- Reset the previous brightness (last value)
- Leave the output switched OFF

➜ Parameters

Designation	Description	Values
Local min./max. dimmer limit setting authorization	This parameter authorizes or forbids taking into account the switch's Min. and Max. positions.	Forbidden, Authorized. Default value : Authorized.
Modification of relative dimming limits after download	This parameter defines the dimming limits to be used after download : - The limits set on the product (not modified). - The limits defined by ETS parameters (modified).	Not modified, Modified Default value : Not modified
Minimum dimming value*	This parameter defines the minimum brightness level for dimming.	1% to 50% in 1% steps Default value : 1%
Maximum dimming value*	This parameter defines the maximum brightness level for dimming.	51% to 100% in 1% steps Default value : 100%
Status after download	This parameter defines the output status applied after download.	Output switched OFF, Last value Default value : Last value

* These parameters are only visible if the Modification of relative dimming limits during download parameter has the value Modified.

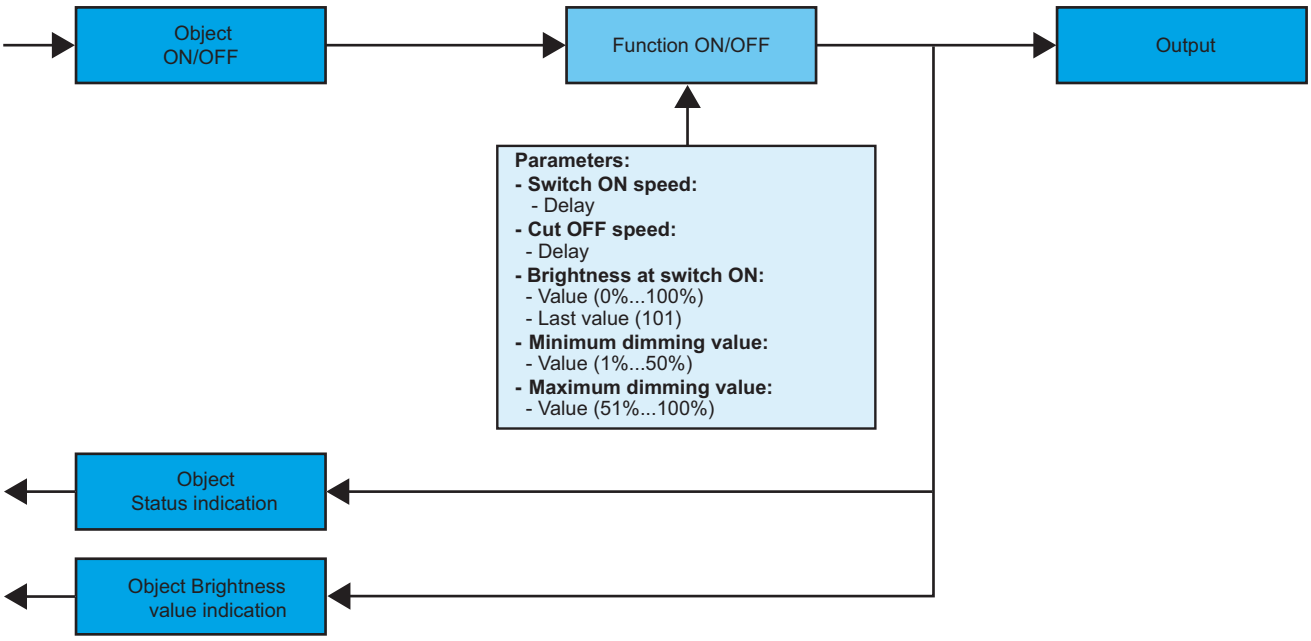
2.3 Function descriptions

2.3.1 ON/OFF, Status indication and Brightness value indication functions

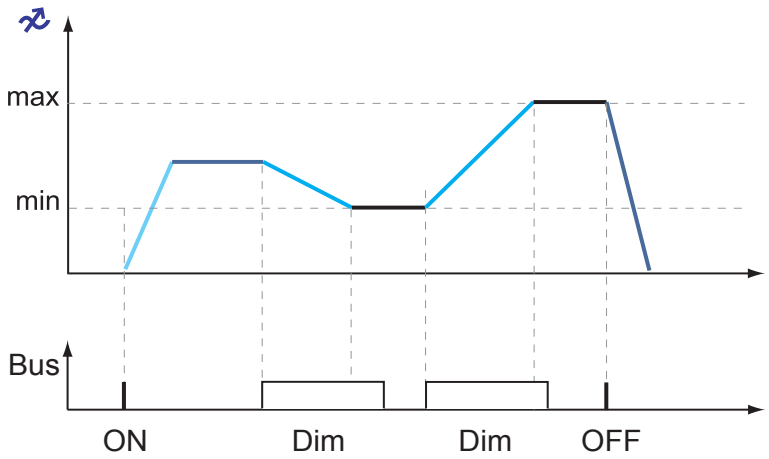
The ON/OFF function is used to switch the output ON or OFF using the ON/OFF object.

- ON : switching ON at the lighting level defined by parameters. Switching ON can be gradual or instantaneous.
- OFF : switching OFF. Switching OFF can be gradual or instantaneous.

The dimmer speed is settable.
The dimming periods when switched ON and switched OFF are defined by parameters for the ON/OFF function; these parameter values are also used for the Timer and Priority functions.
The output status and the lighting level are indicated on the bus by the Brightness value indication object.

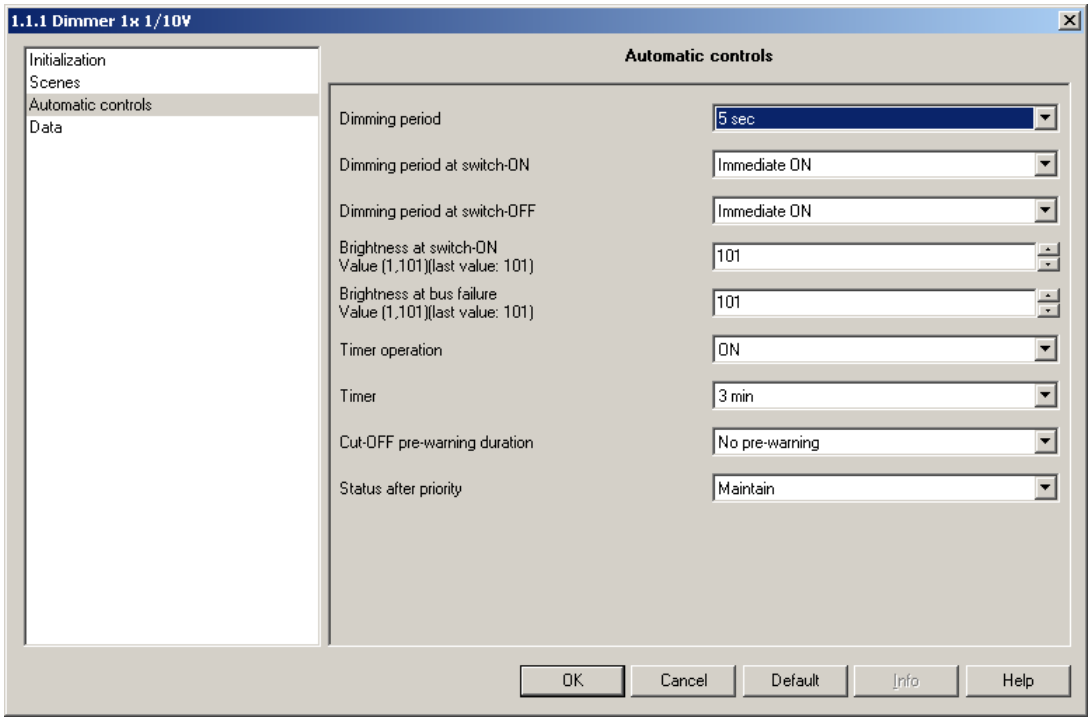


➜ Operating principle



	Switching-ON speed
	Relative dimmer speed
	Switching-OFF speed
	Brightness when switched ON

➜ Parameters

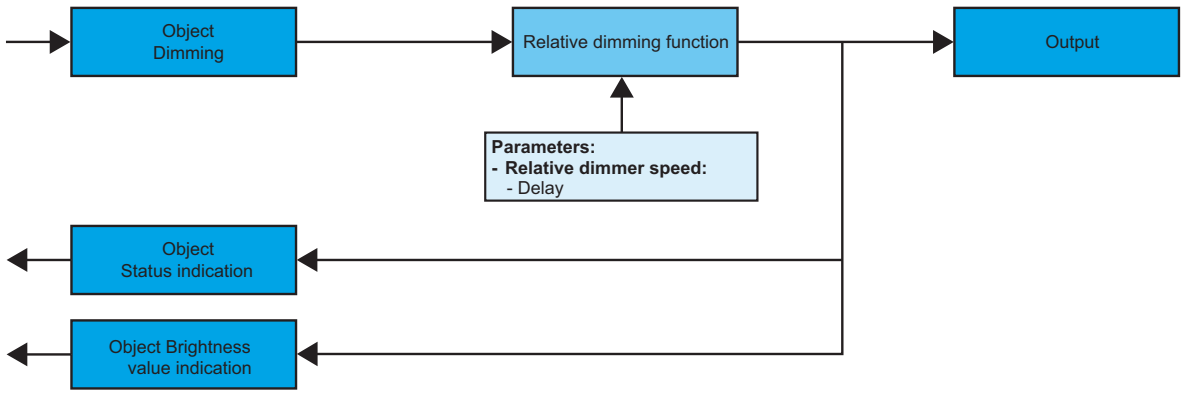


Screen 2

Designation	Description	Values
Dimming period when switched ON	This parameter defines the time for the brightness to increase from 0% to the value to be reached.	Immediate ON, 1 s, 2 s, 3 s, 4 s, 5 s, 6 s, 9 s, 15 s, 30 s, 60 s, 2 min, 5 min, 10 min, 20 min, 30 min. Default value : Immediate ON.
Dimming period when switched OFF	This parameter defines the time for the brightness to decrease from the current value to 0%.	Immediate ON, 1 s, 2 s, 3 s, 4 s, 5 s, 6 s, 9 s, 15 s, 30 s, 60 s, 2 min, 5 min, 10 min, 20 min, 30 min. Default value : Immediate ON.
Brightness when switched ON	This parameter defines the brightness level when switched ON.	0% to 100% in 1% steps, 101 (last value). Default value : 101 (last value).

2.3.2 Dimming function

The Dimming function increases and decreases the lighting system's brightness level progressively when a pushbutton is pressed for a long time.
The Dimming function is started by the Dimming object.
The dimmer speed is settable.



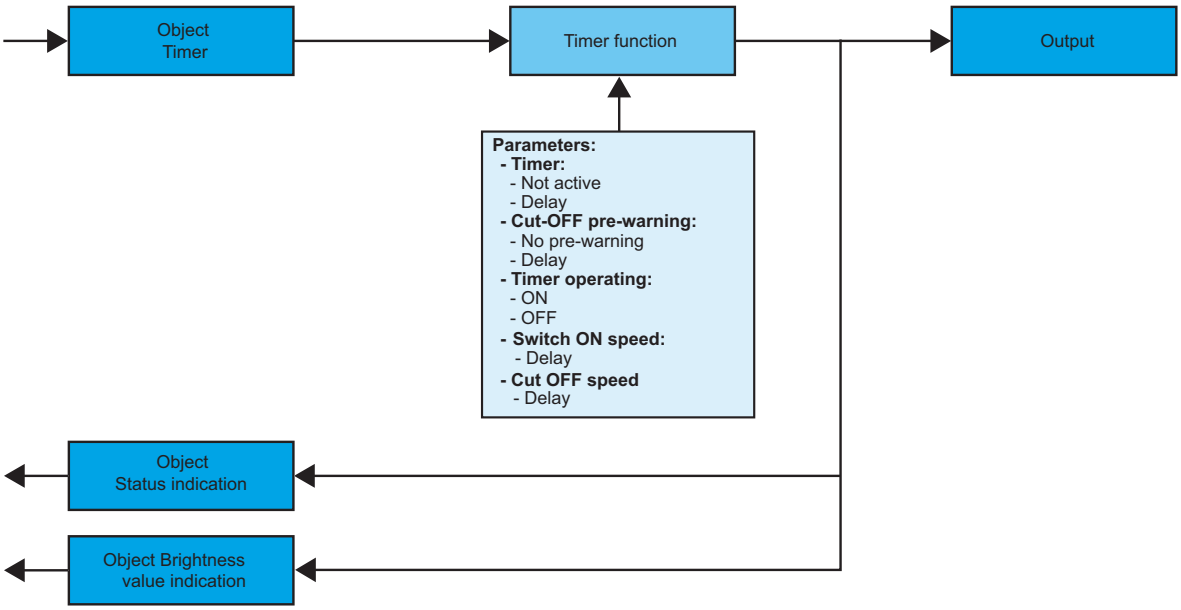
➜ Parameter Setting screen : see "Screen 2".

➜ Parameter

Designation	Description	Values
Dimming period	Time to switch dimming from 0 to 100%.	1 s, 2 s, 3 s, 4 s, 5 s, 6 s, 9 s, 15 s, 30 s, 60 s. Default value : 3 s.

2.3.3 Timer function

The Timer function is used to switch a lighting circuit ON or OFF for an adjustable time. The function is started by the Timer object. The dimmer speed is settable (same values as for the ON/OFF function).
Cut-OFF pre-warning (for ON operation) :
An adjustable cut-OFF pre-warning indicates the end of the delay time by dividing the lighting level by two.
The Cut-OFF pre-warning parameter value defines the time before the end of the delay time, when the pre-warning will be applied.



➜ Parameter Setting screen : see "Screen 2".

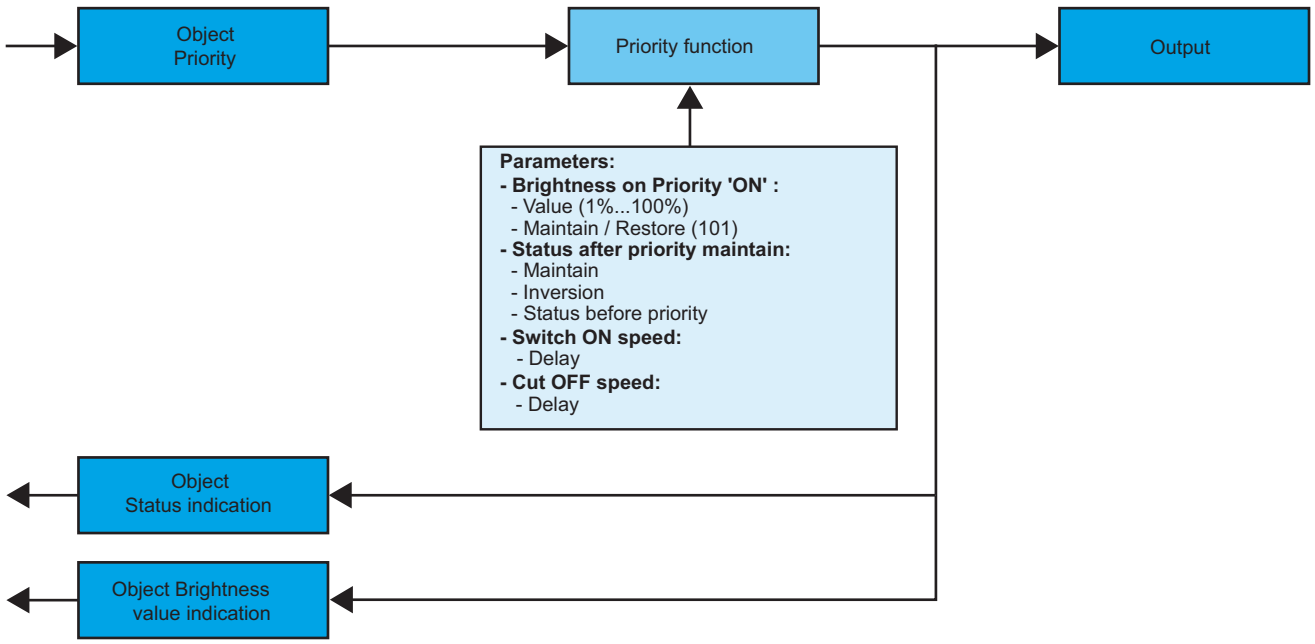
➜ Parameters

Designation	Description	Values
Timer	This parameter defines the length of the delay time.	Not active, Range [1 s 24 h]* Default value : 3 min.
Timer operation	This parameter defines whether the delay time triggers an ON or an OFF status.	ON, Stop
Cut-OFF pre-warning	The parameter value defines the time before the end of the delay time, when the pre-warning will be applied.	No pre-warning, 15 s, 30 s, 1 min. Default value : No pre-warning.
Dimming period when switched ON (similar to ON/OFF function)	This parameter defines the time for the brightness to increase from 0% to the value to be reached.	Immediate ON, 1 s, 2 s, 3 s, 4 s, 5 s, 6 s, 9 s, 15 s, 30 s, 60 s, 2 min, 5 min, 10 min, 20 min, 30 min. Default value : Immediate ON.
Dimming period when switched OFF (similar to ON/OFF function)	This parameter defines the time for the brightness to decrease from the current value to 0%.	Immediate ON, 1 s, 2 s, 3 s, 4 s, 5 s, 6 s, 9 s, 15 s, 30 s, 60 s, 2 min, 5 min, 10 min, 20 min, 30 min. Default value : Immediate ON.

* Setting range [1 s 24 h]
1 s, 2 s, 3 s, 5 s, 10 s, 15 s, 20 s, 30 s, 40 s, 45 s, 50 s, 1 min, 1 min 15 s, 1 min 30 s, 2 min, 2 min 30 s, 3 min, 4 min, 5 min, 6 min, 7 min, 8 min, 9 min, 10 min, 11 min, 12 min, 13 min, 14 min, 15 min, 20 min, 30 min, 40 min, 50 min, 1 h, 1 h 30 min, 2 h, 2 h 30 min, 3 h, 3 h 30 min, 4 h, 5 h, 6 h, 12 h, 24 h.

2.3.4 Priority function

The Priority function forces the output and maintains it at a defined ON or OFF status imposed by the input. This function is started by the Priority object (EIS priority). The brightness for priority ON is settable.
The dimmer speed is settable (same values as for the ON/OFF function).
Priority is the function with the highest priority. Only a priority-end command ends the Priority and re-authorizes the bus commands to be taken into consideration.



➜ Description of the Priority object (EIS priority).

Bit 1	Bit 0
Output behaviour	

Output behaviour	00 = Priority-end 01 = Priority-end 10 = OFF priority 11 = ON priority

➜ Parameter Setting screen : see "Screen 2".

➜ Parameters

Designation	Description	Values
Status after priority cancellation	This parameter defines the brightness level to be applied at the end of the Priority.	Maintain, Inversion - Maintain : maintains the output at the status active during Priority. - Inversion : Inversion of the output's status with regards to the status active during Priority (ON to OFF and OFF to ON) Default value : Maintain.

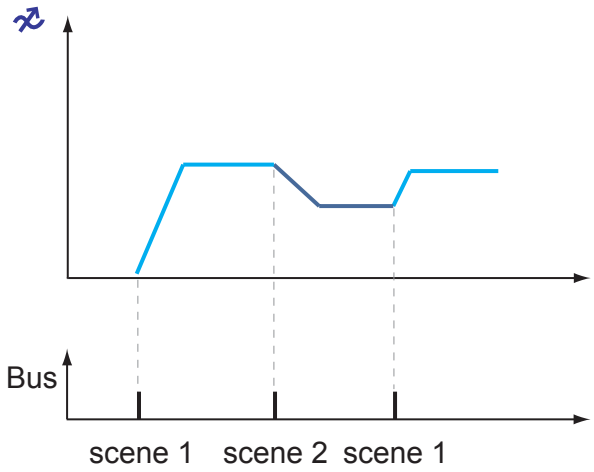
2.3.5 Scene function

A scene is used to control a group of outputs. Each of the outputs in the group will be set to a status pre-defined for the scene.
A scene is started by the Scene object.
The brightness level can be configured for each scene.
The group of outputs is created beforehand by establishing the link between the outputs that must belong to the scene and the pushbutton that will trigger the scene. Each output may be integrated into 8 different scenes.

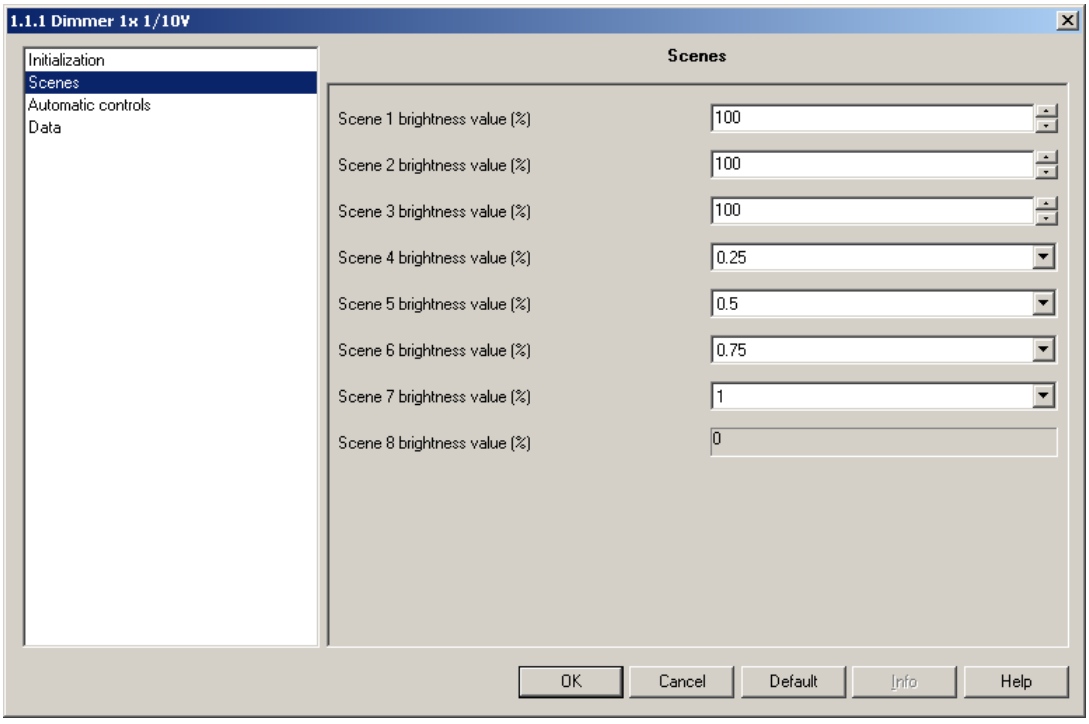
➜ Description of the Scene object (1 byte)

7	6	5	4	3	2	1	0
Learn	X	Scene number					

➜ Operating principle



➜ Parameters



Screen 3

Designation	Description	Values
Brightness value for scene X	This parameter defines the output status associated to the scene.	Scene 1 to 3 : 0% to 100% in 1% steps. Default value : 100%. Scene 4 to 7 : 25%, 50%, 75%, 100% Default value : depends on the scene number

2.3.6 Special statuses

The parameters grouped in this section define the output behaviour in some special cases.

- Status after bus failure

➜ Parameter Setting screen : see "Screen 2".

➜ Parameters

Designation	Description	Values
Brightness after bus failure.	This parameter defines the brightness level to be applied at bus return.	0% to 100% in 1% steps, 101 (Status before failure). Default value : 101(Status before failure).

- Status after download

➜ Parameter Setting screen : see "Screen 1".

➜ Parameters

Designation	Description	Values
Status after download.	This parameter defines the output status applied after download.	OFF, Maintain. Default value : Maintain

3. Main characteristics

Max. number of group addresses	252
Max. number of links	254
Objects	8 in total

4. Physical addressing

PTo perform physical addressing or to check for bus presence, press the lighted pushbutton located above the label holder on the right of the product.
Indicator on = bus presence and product in physical addressing.
The product remains in physical addressing until the physical address has been transmitted by ETS. Press again to exit physical addressing mode.
Physical addressing may be performed in Auto or Manual (☜) mode.