XLC-25/40/60-H-KN

Installation manual

LED driver with KNX interface

Content

2025.03 Ver0

1.Overview

1.1 Overvier devices

The manual refers to the following devices: (Order Code respectively printed in bold type):

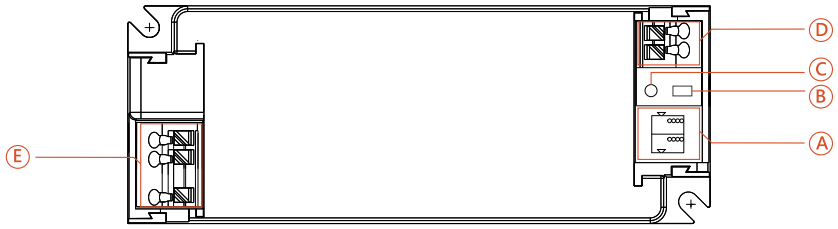
- **XLC-25-H-KN**: INPUT: 100 ~ 305VAC 47 ~ 63Hz, OUTPUT: 300mA ~ 1050mA, 9 ~ 54V · 25W
- **XLC-40-H-KN**: INPUT: 100 ~ 305VAC 47 ~ 63Hz, OUTPUT: 600mA ~ 1400mA, 9 ~ 54V · 40W
- **XLC-60-H-KN**: INPUT: 100 ~ 305VAC 47 ~ 63Hz, OUTPUT: 900mA ~ 1700mA, 9 ~ 54V · 60W

1.2 Usage&possible applications

The XLC-25/40/60-H-KN series is a 25W/40W/60WAC/DC constant current power output LED driver with a minimum dimming value of 0.5%. It also has a built-in KNX interface that directly connects to the KNX system, eliminating the need for expensive KNX-DALI networks. There are many options for adjusting the dimming process, such as dimming speed, transition time, on/off behavior, etc. The KNX interface also provides scene functions and various automatic functions. In addition, the XLC-25/40/60-H-KN is equipped with press dimming, providing the best design freedom for LED lighting systems.

※The following chapters will be explained using XLC-40-H-KN

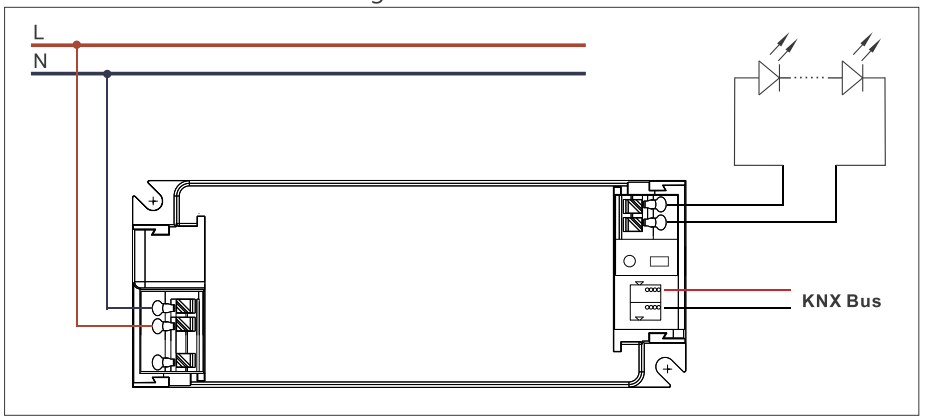
1.3 Displays and operating elements



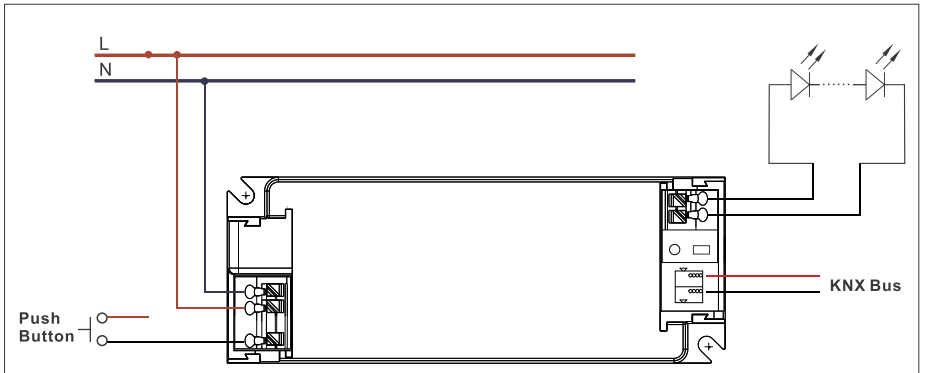
Ⓐ: KNX bus connection terminal
Ⓑ: Programming button
Ⓒ: Programming LED
Ⓓ: DC Output
Ⓔ: Communication input+pressing signal input

1.4 Circuit diagrams

Configuration 1:General use

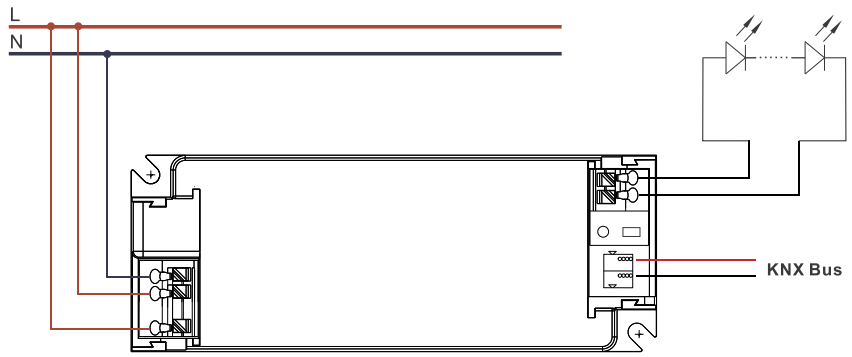


Configuration 2:With push dimming



- KNX bus need to be connected when using PUSH Dimming.
- The detailed function of PUSH dimming, please refer to 3.5 Push dim port.
- The maximum length of the cable between the push button and driver is 20 meters.
- The mechanical push buton can be connected only between the PUSH terminal, as displayed in the diagram, andAC/L (in brown or black): it will lead to short circuit if it is connected to AC/N.
- In case the PUSH dimming is set locally, up to 10 drivers can perform the PUSH dimming at the same time when utilizing one common push button.
- In case the PUSH dimming is set independently via ETS, the number of drivers is done through group address and determined by the ETS project designer.

Configuration 3:With AC/DC input monitor



- KNX bus need to be connected when using AC/DC input monitor.
- The detailed function of AC/DC input monitor(emergency lighting), please refer to 3.5 Push dim port

1.5 Wiring

- Use wires with an adequate cross-section.
- Use suitable mounting tools to do the wiring and mounting.
- The maximum number of bus devices connected is 256.
- The maximum length of a line segment is 350 m, measured along the line between the power supply and the furthest bus device.
- The maximum distance between two bus devices cannot exceed 700 m.
- The maximum length of a bus line is 1000 m, keeping into account all segments

XLC-25/40/60-H-KN

Type	Push terminal 1 (AC/L, AC/N,Push, Vo±)	KNX bus terminal (BUS V±)
Solid wire	-----	0.6 ~ 0.8Φ
Stranded wire	0.823 ~ 2.08mm²	------
American wire gauge	14 ~ 18AWG	20 ~ 22AWG
Wire stripping length	10mm (0.39")	5mm (0.196")
Screwdriver	3mm Phillips	-----
Suggested push-down strength	3 ~ 4kg (6.61 ~ 8.81 lbF)	-----

1.6 Information at the ETS-Software

Selection at the product database: Manufacturer:
MEANWELL Enterprises Co.Ltd. Product family: Output.
Product type: KLD
Product name: addicted to the used type, e.g.: XLC-40-H-KN,
LED Driver with KNX interface Order number:
addicted to the used type, e.g.: XLC-40-H-KN

1.7 Starting up

After wiring, the allocation of the physical address and the parameterization of every channel follow:
(1)Connect the interface with the bus, e.g. MEANWELL USB interface KSI-01U.
(2)Switching the power supply.
(3)Set bus power up.
(4)Press the programming button at the device.
(5)Loading of the physical address out of the ETS-Software by using the interface (green LED goes out, as well this process was completed successful).
(6)Loading of the application, with requested parameterization.
(7)If the device is enabled you can test the requested functions (also possible by using the ETS-Software).

2.Communication Objects

2.1 Summary and Usage

Num	Object Function	Length	DPT	FLAG	Function Area	Description
Central Objects:						
1	Operation	1bit	state (DPT 1.011)	CRT	Central Function	This Communication is shown permanently and can be used to send status of the device to the system at regular intervals when active.
2	Time Input	3Bytes	time (DPT 10.001)	CRW	Central Function	This communication object can be used to update the device time using an external clock.
3	Switch On/Off	1bit	Switch (DPT 1.001)	CW	Normal dimmer	This Communication Object is for controlling the main function Switch On/Off and normally connected to all desired control keys.
4	Switch State	1bit	State (DPT 1.011)	CRT	Normal dimmer/ Staircase light	This Communication is shown permanently and can be used for showing the switching state On/Off of the device
5	Dim relatively	4bit	Dimming control (DPT 3.007)	CW	Normal dimmer	This Communication is shown permanently and allows the controlling of the main function Dim Absolutely for the device.
6	Dim absolutely	1byte	Percentage (DPT 5.001)	CW	Normal dimmer	This Communication Object is for controlling the main function Dim absolutely for this device, which is normally connected to all desired control keys.
7	State Dimm Value	1byte	Percentage (DPT 5.001)	CRT	Normal dimmer/ Staircase light	This Communication Object is for showing dimming value of this device. NOTE: This value will no be affected by CLO.
8	Scene	1byte	scene number (DPT 17.001)	CW	Normal dimmer	This Communication Object is only shown after activating in the parameter settings and can be used for calling scenes.
		1byte	scene control (DPT 18.001)	CW		This Communication Object is only shown after activating in the parameter settings and can be used for calling scenes and learning a new scene.

9	Automatic 1	1bit	Switch (DPT 1.001)	CW	Normal dimmer	This Communication Object is only shown after activating in the parameter settings and can be used for calling of absolute brightness values with a 1 Bit command.
10	Automatic 2	1bit	Switch (DPT 1.001)	CW	Normal dimmer	This Communication Object is only shown after activating in the parameter settings and can be used for calling of absolute brightness values with a 1 Bit command.
11	Automatic 3	1bit	Switch (DPT 1.001)	CW	Normal dimmer	This Communication Object is only shown after activating in the parameter settings and can be used for calling of absolute brightness values with a 1 Bit command.
12	Automatic 4	1bit	Switch (DPT 1.001)	CW	Normal dimmer	This Communication Object is only shown after activating in the parameter settings and can be used for calling of absolute brightness values with a 1 Bit command.
13	Lock I for Led Driver	1bit	Enable (DPT 1.003)	CW	Normal dimmer/ Staircase light	This Communication is shown permanently and can be used for blocking this device.
14	Lock II for Led Driver	1bit	Enable (DPT 1.003)	CW	Normal dimmer/ Staircase light	This Communication Object is shown permanently and can be used for an extended blocking function.
15	Start/Stop auto dimming over time	1bit	start/stop (DPT 1.010)	CW	Normal dimmer	This communication is permanently displayed and can be used to start or stop automatic dimming.
16	Auto dimming over time status	1bit	state (DPT 1.010)	CRT	Normal dimmer	This Communication is shown permanently and can be used for showing auto dimming over time status.
17	Staircase light	1bit	Switch (DPT 1.001)	CW	Staircase light	This Communication Object is only shown when Staircase light is active and can be used to switch the staircase function on.
18	Staircase light with time	2byte	time(0-65535)s (DPT 7.005)	CW	Staircase light	This Communication Object is only shown when Staircase light is active and can be used to switch the staircase function on with a certain delay.

19	Prewarning	1bit	Alarm (DPT 1.005)	CRT	Staircase light	This Communication Object is only shown when Staircase light is active and can be used to show status of Prewarning. The object will send a signal when Staircase light enters the period of prewaning and it will send out a signal again when prewarning finished.
20	Permanent ON	1bit	Switch (DPT 1.001)	CW	Staircase light	This Communication Object is only shown when Staircase light is active and can be used to switch the staircase light permanently on.
21	Lamp Failure1	1bit	Alarm (DPT1.005)	CRT	Normal dimmer/ Staircase light	This Communication Object is only displayed when the LED driver output error detection is enabled, and can be used to display whether the driver output has short circuit, opencircuit, and overtemperature detection.
22	Lamp Failure2	1bit	Alarm (DPT1.005)	CRT	Normal dimmer/ Staircase light	This Communication Object is only displayed when the LED driver output error detection is enabled, and can be used to display whether the driver output has short circuit, open circuit, and overtemperature detection.
23	Lamp Failure3	1bit	Alarm (DPT1.005)	CRT	Normal dimmer/ Staircase light	This Communication Object is only displayed when the LED driver output error detection is enabled, and can be used to display whether the driveroutput has short circuit, open circuit, and overtemperature detection.
24	Lamp Failure4	1bit	Alarm (DPT1.005)	CRT	Normal dimmer/ Staircase light	This Communication Object is only displayed when the LED driver output error detection is enabled, and can be used to display whether the driver output has short circuit, open circuit, and overtemperature detection.

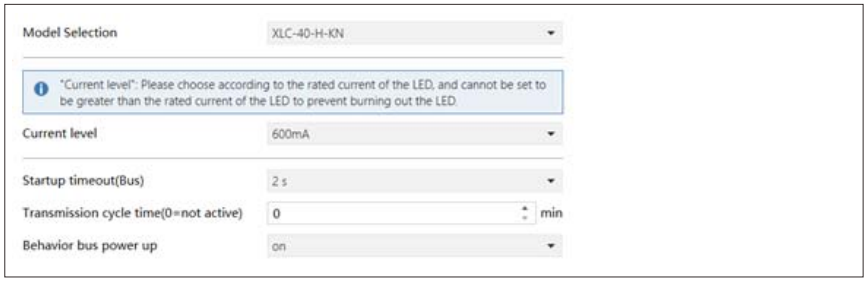
25	Operating hours (Counter, in seconds)	4Bytes	Time lag(s) (DPT 13.100)	CRT	Operating hours	This Communication Object is only shown when Counting of operating hours & CLO is active and can be used to send out the operating time of the device.
	Operating hours (Counter, in hours)		counter pulse (DPT 12.001)			This Communication Object is only shown when Counting of operating hours & CLO is active and can be used to send out the operating time of the device.
26	Operating hours (set value, in seconds)	4Bytes	Time lag(s) (DPT 13.100)	CW	Operating hours	This Communication Object is only shown when Counting of operating hours & CLO is active and can be used to overwrite the operating time the device counted.
	Operating hours (set value, in hours)		counter pulse (DPT 12.001)			This Communication Object is only shown when Counting of operating hours & CLO is active and can be used to overwrite the operating time the device counted.
27	Life time alarm	1bit	enable(1.003)	CRT	Central function	This communication object is used to display a warning when the device runs for more than the set lifespan.
28	Watts report	4Bytes	energy (DPT13.013)	CRT	Central function	This communication object is used to display the output power of the LED Driver.
29	Voltage report	4Bytes	voltage(V) (DPT 14.027)	CRT	Central function	This communication object is used to display the LED Driver output voltage in volts.
30	Voltage report	2Bytes	voltage(mV) (DPT9.020)	CRT	Central function	This communication object is used to display the output voltage of the LED Driver in mV.
31	Current report	4Byte	current(A) (DPT 14.019)	CRT	Central function	This communication object is used to display the output current of the LED Driver, in units of A.
32	Current report	2Byte	current(mA) (DPT 9.021)	CRT	Central function	This communication object is used to display the output current of the LED Driver, in units of mA.

33	Energy consu-mption report	4Bytes	energy(kwh) (DPT13.013)	CRT	Central function	This communication object is only displayed after parameter settings are activated, and is used to report the energy consumption of the device in kWh
34	Energy consu-mption report	4Bytes	energy(wh) (DPT13.010)	CRT	Central function	This communication object is only displayed after parameter settings are activated, and is used to report the energy consumption of the device in Wh.
35	Energy consu-mption set	4Bytes	energy(kwh) (DPT13.013)	CW	Central function	This communication object is used to clear accumulated power and collect statistics from 0.
36	Energy consu-mption set	4Bytes	energy(wh) (DPT13.010)	CW	Central function	This communication object is used to clear accumulated power and collect statistics from 0.
37	Temperature report	2bytes	DPT_Value _Temp (DPT 9.001)	CRT	Central function	This Communication Object is only shown when Temperature Measurement is active and can be used to report the Temperature of the LED Driver.
38	Temperature alarm status	1bit	alarm(1.005)	CRT	Central function	Report temperature alarm.
39	Temperature cancel alarm	1bit	enable(1.003)	CW	Central function	This communication object is only displayed after the parameter settings are activated, and is used to cancel the over temperature alarm.
40	Block of push dimming	1bit	Enable (DPT 1.003)	CW	push dim	This Communication Object is only shown when push dim port is active and can be used for blocking push dim function.
41	Switch of push dimming	1bit	Switch (DPT 1.001)	CRT	push dim	This Communication Object is only shown when push dim port is active and can be used to send switching signals to the system.
42	Dim up/ down of push dimming	4bit	Dimming control (DPT 3.007)	CRT	push dim	This Communication Object is only shown when push dim port is active and can be used to send dimming signals to the system.

43	AC input status	1bit	Alarm (DPT 1.005)	CRT	AC monitor	This Communication Object is only shown when AC monitor in Function of push dim port is active and can be used to send out AC status of the device.
44	Dim value of push dim	1byte	Percentage (DPT 5.001)	CRT	push dim	This Communication Object is used to feedback the corresponding brightness level at the end of Push dimming .
45	Scene of push dim	1byte	scene number (DPT 17.001)	CRT	push dim	This Communication Object is used to select Scene when the short press function triggers the corresponding numbered dimming scene on the KNX bus.
46	Automatic 1 of push dim	1bit	Switch (DPT 1.001)	CRT	push dim	This Communication Object is displayed only after the parameter setting is activated, and sends a 1 bit command to the KNX bus to invoke the absolute brightness value.
47	Automatic 2	1bit	Switch (DPT 1.001)	CRT	push dim	This Communication Object Is displayed only after the parameter setting is activated, and sends a 1 bit command to the KNX bus to invoke the absolute brightness value.
48	Automatic 3	1bit	Switch (DPT 1.001)	CRT	push dim	This Communication Object is displayed only after the parameter setting is activated, and sends a 1 bit command to the KNX bus to invoke the absolute brightness value.
49	Automatic 4	1bit	Switch (DPT 1.001)	CRT	push dim	This communication object is displayed only after the parameter setting is activated, and sends a 1 bit command to the KNX bus to invoke the absolute brightness value.
50	Staircase light	1bit	Switch (DPT 1.001)	CRT	push dim	This communication object is displayed only after the parameter setting is activated, and sends a 1 bit command to the KNX bus to invoke the absolute brightness value.

3.Reference ETS-Parameter

3.1 General function



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Current level	600、650、700、...、1400mA [600mA]	Set the rated current value of the power output
Startup timeout (Bus)	2 -60s [2s]	All functions run after startup timeout finished. NOTE: The timeout starts counting when power-on initialization is done. So it always takes longer than you expected
Transmission cycle time (0=not active)	0 - 30,000min [0]	Sends status signals from the object Operation at intervals you desire
Behavior bus power up	off 、on 、 last value 、light value [on]	This setting is used to set the actuator to perform corresponding actions(on, off, etc.) on the dimming output channel after the KNX bus is powered on Note: The last value refers to the brightness level of the corresponding channel before the KNX bus power is turned off.

The following chart shows the objects that belong to general setting:

Number	Name	Length	Usage
1	Operation	1 bit	Sends status of the device to the system at regular

3.2 Basic function

The basic functions of the dimming actuator are divided in three sections: Switching, dimming relatively and dimming absolutely.As soon as a channel is activated, the communication functions for the basic functions are standardly shown.

3.2.1 Switching

A channel can be switched on or off by the switching command. In addition, there is a state object, which shows the actual switching state of the output. This object, State On/Off, can be used for visualization. When the actuator shall be switched by a binary input or a push button, this object must be connected with the state object of the binary input or the push button for toggling.

Number	Name	Length	Usage
3	Switch On/Off	1 bit	Switches 1 Bit switches the channel on or off
4	State On/Off	1 bit	Shows the switching state of the channel

3.2.2 Dim relatively

The relative dimming allows continuous dimming. So the lights can be dimmed evenly form 0%(10%) to 100% or from 100% to minimum light. The relative dimming process can be stopped at every state. The behavior of the dimming processcan be adjusted via additional parameters, Increase:1%/3%/6%/12%/25%/50%/100%/break ; Derease: 1%/3%/6%/12%/25%/50%/100%/break.

Number	Name	Length	Usage
5	Dim relatively	4 bit	Dims the channel continuous up and down

3.2.3 Dim absolutely

A discrete brightness level can be set by the absolute dimming process. By sending an absolute percent value to the 1 Byte object “Dim absolutely”, the output assumes a certain brightness level.

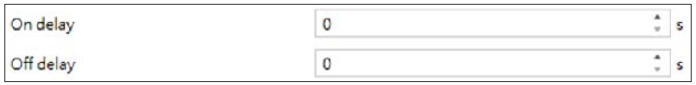
Number	Name	Length	Usage
6	Dim absolutely	1 byte	Adjusts a certain brightness level

3.3 Time function

The dimming actuator has the opportunities of connecting different time functions. Besides the normal on/off delay, an additionalstaircase function with different sub functions is available.

3.3.1 On/off delay

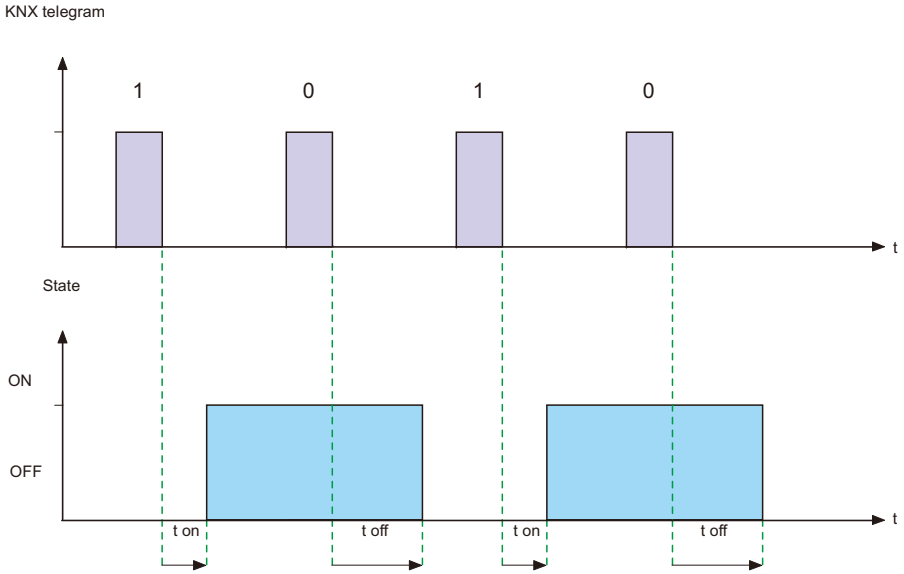
The on and off delay allows a delayed switching. The following chart shows this parameter:



The chart shows the dynamic range for this parameter:

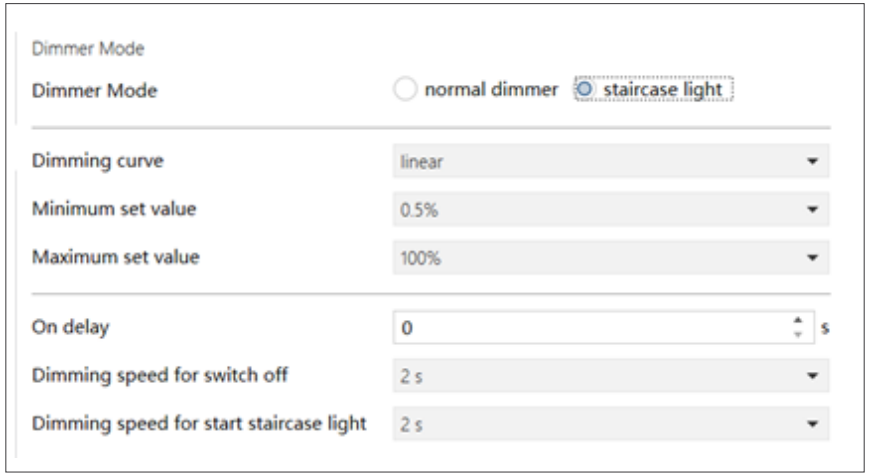
ETS -text	Dynamic range [default value]	Comment
On delay/ Off delay	0s – 30,000s [0s]	Adjustment of the time at which the switch on/switch off process shall be delayed

By using the On delay and Off delay, switching commands can be delayed. The delay can affect only to the rising edge(switch on delay) or the falling edge (switch off delay). Furthermore, both functions can be combined. The following diagram shows the functional principle of both functions, which are activated in this example:



3.4 Staircase light

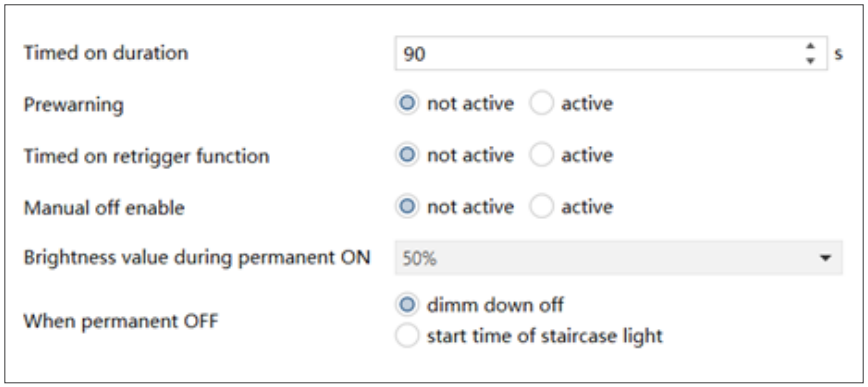
The staircase light allows for automatic closure of the passage after the set time has expired. This parameter can be set in the Time on duration option of the Staircase Light menu:



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Dimming curve	Linear、DALI、Linear, Multi-time [Linear]	Linear,Multi-time: The maximum dimming time that can be defined for 8 dimming stages
Minimum set value	0.5%、1%、2%、3%、...、99% [0.5%]	Set the lower limit of dimming range. Note: Dimming values below the lower limit will not be executed
Maximum set value	1%、2%、3%、...、99%、100% [100%]	Set the upper limit of dimming range
On delay	0-3000s [0]	When the output is in the off state and an open message is received, the staircase light will start to light up after a delay of n seconds
Dimming speed for switch off	1、2、3、...、240s [2]	After receiving the command to turn off the staircase lights, adjust the current brightness to the off time
Dimming speed for start staircase light	1、2、3、...、240s [2]	The dimming time required to gradually transition from 0% to the target brightness when the staircase light is turned on

If the staircase light is activated, the corresponding function will be displayed in a new menu "Staircase Light" where further parameter settings can be made.



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Timed on duration	1s -30,000s [90s]	Duration of the switching process
Prewarning	active [not active]	Activates the prewarning
Prewarning duration in[s]	1-30,000 [10s]	Is only shown, when the prewarning is activated
Value of dimming down	1-100% [20%]	Is only shown, when the prewarning is activated Value of which the channel shall be dimmed down, when the staircase time ran out
Timed on retrigger function	active [not active]	Active: During the period when the staircase light is on, triggering the staircase light again will restart the timing process of the staircase light
Manual off enable	active [not active]	Activation of Deactivation of the staircase light,before the whole time ran out
Brightness value during permanent ON	0%(OFF)-100% [50%]	Dimming value at "Permanent ON" mode. Tirggered when the object Permanent ON is "1"
When permanent OFF	[dimm down off] Start time of staticase light	Tirggered after the the object Permanent ON is "0".The channel turns off when the parameter is Dim down off; the channel continues a new staircase light when set at Start time of staircase light

The duration of the staircase light indicates how long the passage needs to be opened after receiving the opening signal.

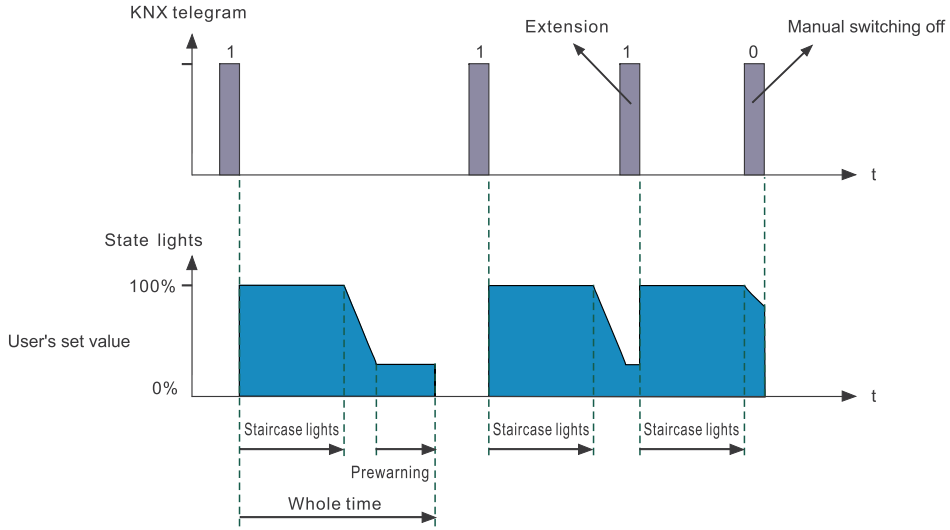
After a period of time, the channel automatically closes. The stair function can be modified through the parameters “Extension” / “Manual Close” . Manual shutdown "allows the channel to be closed before time runs out. “Extend” allows extending the time of the staircase lights and restarting the timer by sending another signal to turn them on.

The warning function will gradually dim the staircase lights after the end of the time. At this time, the lights will still remain on, but the brightness value will change. The staircase lights will maintain this brightness value until the warning is over. If the stair light function is used, the object “Switch ON/OFF” will be replaced by “Staircase Light” order.

Number	Name	Length	Usage
17	Staircaselight	1 bit	switches the staircase function on

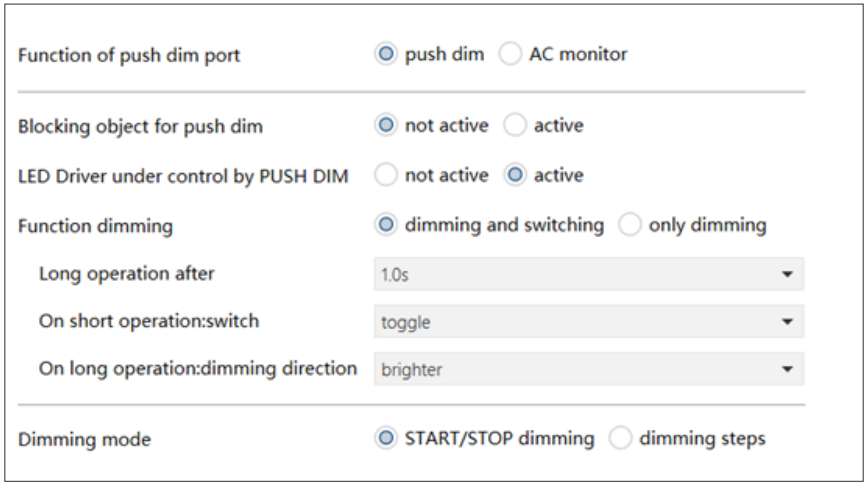
The staircase function has no influence to the relative or absolute dimming.

At the following diagram, the staircase function is shown, with an activated deactivation and extension.The prewarning is activated with a dim down value of 20%:



3.5 Push dim port

Push dimming or switch dimming is a dimming method using a simple retractive push button to realize dimming function. Normally a short press of the switch turns the driver on/off, while a long push dims the brightness of light, the dimming direction changes with each long press.



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Function of push dim port	[not active] push dim AC monitor	Chooses which function to activate. Push dim: push dimming function AC monitor: AC input detection
When "push dim" is selected in "Function of push dim port", the parameters below appear		
Led Driver under control by PUSH DIM	[not active] active	not active: The driver is not controlled by the PUSH DIM function, but is used as a KNX switch component to provide push dimming signals for other KNX devices. active: Actions of the driver is synchronized with PUSH DIM signals NOTE: If Staircase light function is enabled, only switch on/off can be controlled here.

ETS -text	Dynamic range [default value]	Comment
Blocking object for push dim	[not active] active	Activates object of Blocking of push dimming
Function dimming	[Dimming and switching] Only dimming	Chooses whether push dim is with switch on/off function or not
Long operation after	0.5s、0.6s、 0.8s、、1.0s、 1.2s、1.5s、2s、3s、4s、5s、6s、7s、8s、9s、10s [1s]	By how long to push the driver to recognize as a long press signal
On short operation: switch	on off [toggle] scene automatic function start Auto dimming over time not active	How to react when the driver received a short press signal
On long operation: dimming direction	[brighter] darker alternating	Chooses dimming direction for a long press signal
Dimming mode	[START/STOP dimming] dimming steps	START/STOP dimming process starts with a telegram BRIGHTER or DARKER to increase or decrease
Brightness change on every sent telegram	100%、50%、25%、12%、6%、3%、1% [25%]	Parameterizes a desired dimming step
Telegram is repeated every in s	0.5s、0.6s、0.8s、1.0s、1.2s、1.5s、2s、3s、4s、5s、6s、7s, 8s、9s、10s [1s]	Parameterizes a desired dimming cycle
When "AC monitor" is selected in "Function of push dim port", the parameters below a ppear		
When AC input failure, Led driver	no reaction [send out warning message]	How to react when there is no AC input for the driver

3

ETS -text	Dynamic range [default value]	Comment
If backup DC input, dimming output (Not for Staircase light)	no change [light value]	How to react when there is backup DC input detected
light value	Off、10% light、20% light、...、100% light [50% light]	Choose a light value when backup DC input is detected

The following chart shows the objects for this parameter:

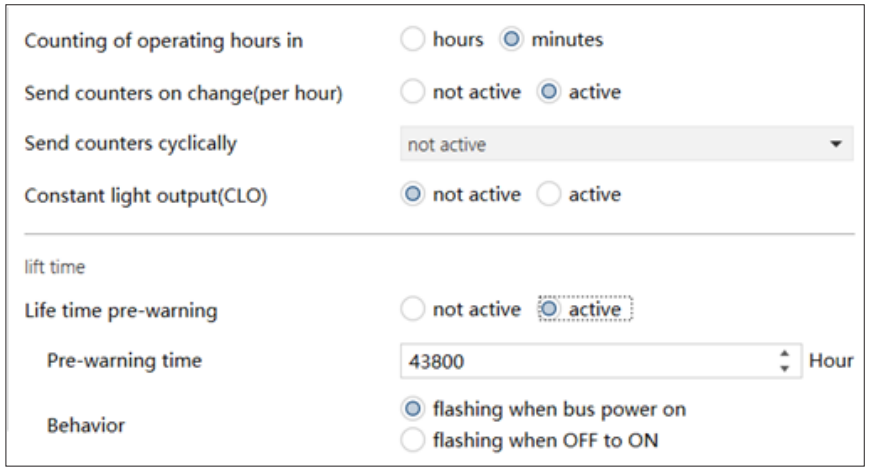
Number	Name	Length	Usage
40	Block of push dimming	1 bit	Activation/Deactivation of blocking Process for push dimming
41	Switch of push dimming	1 bit	Sends out switching on/off signals to the system every short push
42	Dim up/down of push dimming	4 bit	Sends out dimming signals to the system while dimming Bit3=1 is dimming up; Bit3=0 is dimming down; Bit2-bit0=000 is dimming step = STOP Bit2-bit0=001 is dimming step = 100% Bit2-bit0=010 is dimming step = 50% Bit2-bit0=011 is dimming step = 25% Bit2-bit0=100 is dimming step = 12% Bit2-bit0=101 is dimming step = 6% Bit2-bit0=110 is dimming step = 3% Bit2-bit0=111 is dimming step = 1%
43	AC input status	1 bit	Used to issue an alarm signal when there is no AC power

3.6 Operating hours & Constant light output (CLO)

Luminous flux of LEDs reduces over time as the diodes age, Constant Light Output (CLO) function is utilized to continuously compensate for the drop in luminous flux of the luminaire. This compensation is automatic, No maintenance resources required
and the installation does not need to be over installed to compensate for future light depreciation from the diodes. You also can receive data of how long the luminaire has been operating to organize a replacement before the end of LEDs' service life.

3.6.1 Operating hours

Operating hours can be used to monitor service time of the lumiaire and used to prepare a replacement before the lamp is over its lifetime so as to maintain a constant level of illumination for the building.



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Counting of operating hours in	hours [minutes]	Choose what unit is used in record
Send counters on change(per hour)	not active [active]	Sends out the operating time every hour when active
Send counters cyclically	10min、20min、30min、40min、50min、60min、not active [not active]	Sends out the operating time at intervals you desire

ETS -text	Dynamic range [default value]	Comment
Constant light output(CLO)	[not active] active	Activates the CLO function
Life time pre-warning	[not active] active	When activated, the power supply will prompt a warning of insufficient lifespan after running for the set time
Pre-warning time	1~87600 [43800]	Unit: Hour
Behavior	[flashing when bus power on] flashing when OFF to ON	Flashing when the power is switched from OFF to ON state; In this mode, the bus will also flash when powered on again.

The following chart shows the objects for this parameter:

Number	Name	Length	Usage
25	Operating hours (Counter, in seconds/ hours)	4 bytes	Sends the operating time of the driver counted to the system at regular intervals when active. Unit: seconds or hours
26	Operating hours (set value, in seconds/ hours)	4 bytes	Overwrites the operating time the driver counted. Used to reset the timer when replacing new LEDs. Unit:seconds or hours

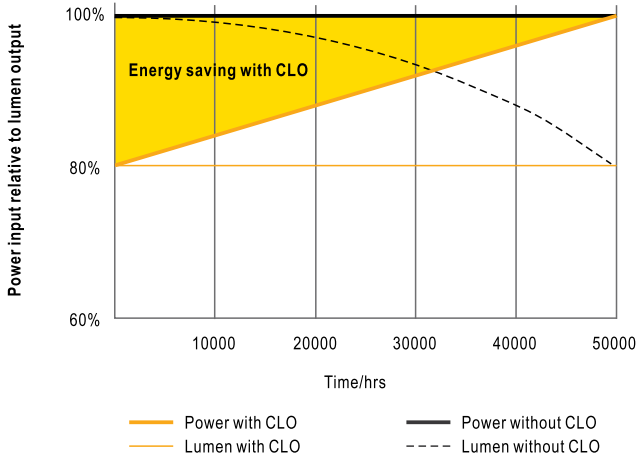
NOTE:
The XLC-40-H-KN saves the up-to-date operating time information into its MCU flash memory every 10 mins. If there is bus voltage failure that occurs, the driver will lose the up to date operating time. In case the bus voltage is back to normal, the operating time data is fetched from its flash memory.

For example 1, XLC-40-H-KN is already operating for 300 minutes. After 9 minutes, the bus voltage is lost and back to normal, the operating time acquired from XLC-40-H-KN internal flash is then 300 minutes.

For example 2, XLC-40-H-KN is already operating for 300 minutes. After 11 minutes, the bus voltage is lost and back to normal operating time acquired from XLC-40-H-KN internal flash is then 310 minutes.

3.6.2 Constant light output (CLO)

Lumen depreciation is the luminous flux lost over time and it is irreversible. Generally, luminous flux of lamps without CLO decreases to 80% from 100% after 50,000 hours. In contrast to lamps with CLO, albeit luminous flux stars at 80%, it can be still mantained at around 80% even the lamps have been servicing for the same period of 50,000 hours. The method of CLO is that the lumiaire starts its service life at a lower operational current and the current gradually increases over its service life to compensate for the LED's light depreciation.



	LED module work time before(x100 hours)	CLO factor
Scheduled division 1	100	80%
Scheduled division 2	150	85%
Scheduled division 3	200	90%
Scheduled division 4	300	95%
Scheduled division 5		100%

The chart shows the dynamic range for this parameter:

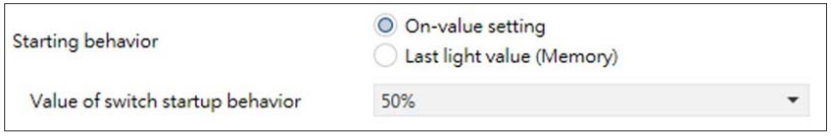
ETS -text	Dynamic range [default value]		Comment
Scheduled division 1	1(x100hours) - 500(x100hours) [100(x100hours)]	10% - 100% [80%]	Parameterizes the first stage of CLO
Scheduled division 2	1(x100hours) - 500(x100hours) [150(x100hours)]	10% - 100% [85%]	Parameterizes the 2nd stage of CLO
Scheduled division 3	1(x100hours) - 500(x100hours) [200(x100hours)]	10% - 100% [90%]	Parameterizes the 3nd stage of CLO
Scheduled division 4	1(x100hours) - 500(x100hours) [300(x100hours)]	10% - 100% [95%]	Parameterizes the 4nd stage of CLO
Scheduled division 5		10% - 100% [100%]	Parameterizes the final stage of CLO

3.7 Absolute Values

The dimming area of the dimming actuator can be restricted by absolute values. Furthermore absolute or saved values can be called, when the actuator is switched on.

3.7.1 Starting behavior

The function "Starting behavior" defines the turn on behavior of the channel. The function can be parameterized for every channel individually.



The chart shows the dynamic range for this parameter:

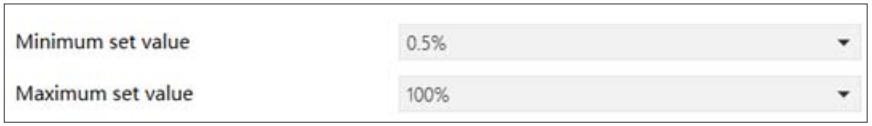
ETS -text	Dynamic range [default value]	Comment
On-value setting	Sub function: Switch start behavior value	If this subfunction is selected, a new subfunction will be displayed
Last light value (Memory)	0.5-100% [50%]	The channel starts with the last value before closing

Via the parameter "Value of start up", an absolute value for switching on can be assigned to the channel. The value for startup contains the whole technical possible area, so form 1-100%. But if the dimming area is restricted, the dimming actuator will be at least switched on with the lowest allowed value and maximum with the highest allowed value; independent from the chosen Value of startup.

The parameter "Last light value ", also called memory function, causes a switching on of the actuator with the value before the last switching off. So the actuator saves the last value. If, for example, the channel is dimmed to 50% and switched off by switch object afterwards, the channel will be switched on with 50% again.

3.7.2 Dimming area

Via the parameters "maximum set value" and "minimum set value", the dimming area can be restricted.

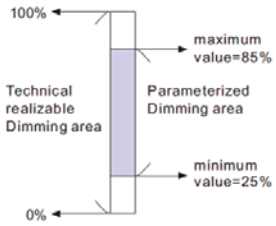


The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Maximum light	1-100% [100%]	Highest, maximum allowed light value
Minimum light	0.5-99% [0.5%]	Lowest, minimum allowed light value

If the technical possible dimming area (6-100%) shall be restricted to a lower area, you have to set values for the minimum light above 6% and for the maximum light under 100%. This restriction of the dimming area is possible for every channel. If the dimming area is restricted, the channel will only move in the adjusted restriction. This setting has also effects to the other parameter:

If, for example, the channel is restricted to a maximum of 85% and the value of startup is chosen as 100%, the channel will switch on with the maximum of 85%. An excess of the maximum value is no longer possible. The restriction of a dimming area is useful when certain values must not be reached, because of technical reasons, for example preservation of the life span or the avoidance of flickering at lower dim values (especially at Energy saver).

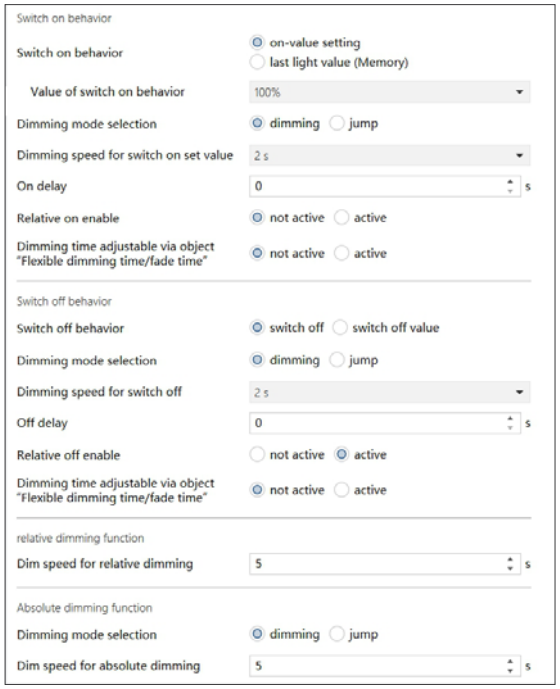


Example: Minimum light = 25%, maximum light = 85%, Value for startup= 100%

- On telegram → adjusted light value 85%
- 50% telegram → adjusted light value 50%
- 95% telegram → adjusted light value 85%
- 15% telegram → adjusted light value 25%
- Off telegram → adjusted light value 0% (Off)

3.8 Specific Dimming settings

The dimming behavior and SoftStart/Stop can be adapted individually via the functions below.



3.8.1 Dimming speed

The dimming speed allows parameterizing the duration of the dimming process individually.

The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Dim speed for relative dimming	1-120s [5s]	Relative dimming rate refers to the time required to step from 0% to 100%. Assuming a 50% step and a default dimming speed of 5 seconds, the required time is 2.5 seconds (50% * 5 seconds)
Dimming speed for switch on set value	1-240s [2s]	The opening speed of "on" refers to the time required to adjust the output of the device from the off state to the set brightness value using SwitchOnObject when the output channel is closed. For example, assuming that the previous "Switchonbehavior" is selected as "On with value setting" corresponding to "Value of Switch onbehavior"=50%, the time required for the output channel to transition from OFF state (0%), Dimming to 50% output value is: "Ondelay" time+("Dimming speed forswitch on setvalue" *50%)
Dimming speed for switch off	1-240s [2s]	The closing speed of the "switch" refers to the time required for the output channel to be in working state (Dimming Value>0) · using the Switch On Object · to adjust the device's output from the current brightness value to off. For example, assuming the current Dimming value is 50%, the time required for the channel to go from 50% Dimming down to OFF state (0%) is: "Off delay" time +("Dimming speed for switch off" time*50%)
Dim speed for absolute dimming	0-120s [5s]	This option is only available when the parameter 'Dimming mode selection' selects' Dimming '. The absolute dimming rate refers to the total time it takes for the dimming value to go from off (0%) to 100% in an absolute dimming manner. For example, if set to 10 seconds, it takes 10 seconds to go from 0% dimming up to 100%, and 5 seconds to go from 100% dimming down to 50%

ETS -text	Dynamic range [default value]	Comment
Parameters under stairase light:		
Dimming speed for switch off	1-240s [2s]	Dimming time for turning off lights in Staircase light mode
Dimming speed for start staircase light	1-240s [2s]	The dimming time required for the staircase light mode to gradually transition from 0% to the target brightness when starting the staircase light

3.8.2 Sending Dimming Values After Changes

In order to visualize dimming values, such as through display, the following communication objects must be activated:

The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Send dim value after change	not active [at dim end]	Activates the status object for the dimming process
Send dim value report cyclically	[not active] 3s~60min	Displayed when the parameter 'Send dim value after change' is set to 'at dim end'. The cycle return time of dimming brightness value

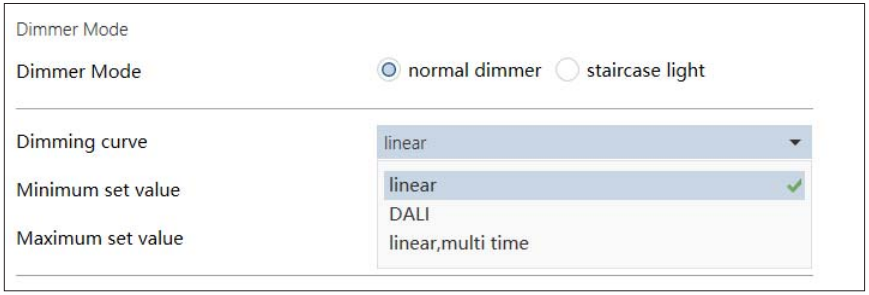
The communication object for the actual dimming value is shown continuous, but sends only the actual dimming value,when the parameter “Send dimming value after change” is activated.

The following chart shows the objects for this parameter:

Number	Name	Length	Usage
6	State dimm value	1 bit	Sends the actual dimming value in %

3.8.3 Dimming curve

The device provides three dimming curve options: linear, Dali, and linear Multi time。



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Dimming curve	[Linear] DALI Linear,Multi-time	Linear, multi time dimming supports up to 8 dimming stages, allowing users to program brightness levels and timings flexibly to meet complex lighting demands

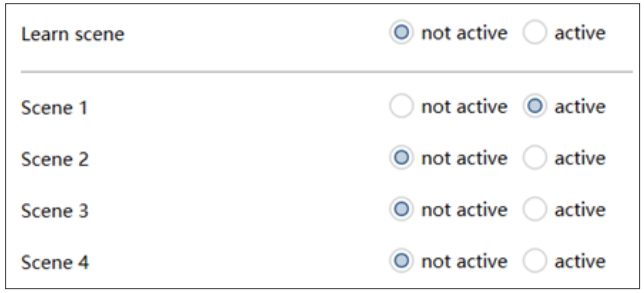
3.9 Scene function

When functions of different groups (e.g. light, heating and shutter) shall be changed simultaneously with only one keystroke, it is practical to use the scene function.

By calling a scene, you can switch the lights to a specific value, drive the shutter to an absolute position, switch the heating to the day mode and switch the power supply of the sockets on. The telegrams of these functions can have as well different formats as different values with different meaning (e.g. "1" for switch the lights off and open the shutters). If there were no scene function, you would have to send a single telegram for every actuator to get the same function.The scene function of the switch actuator enables you to connect the channels of the switch actuator to a scene control. For that, you have to assign the value to the appropriated space (scene 1-32). It is possible to program up to 32 scenes per switching output. When you activate the scene function at the switching output, a new sub menu for the scenes appears at the left selection menu. There are settings to activate single scenes, set values and scene numbers and switch the learn scene function on/off at this sub menu.

Scenes are activated by receiving their scene numbers at the communication object for the scenes. If the "Learn scene" function of the scenes is activated, the current value of the channel will be saved at the called scene number.

The following illustration shows the setting options at the ETS-Software for activating the scene function:



The scene function can only be activated for the normal switching mode. If the staircase light function is activated, the scene function cannot be activated for this channel.

The following chart shows the communication object for calling a scene:

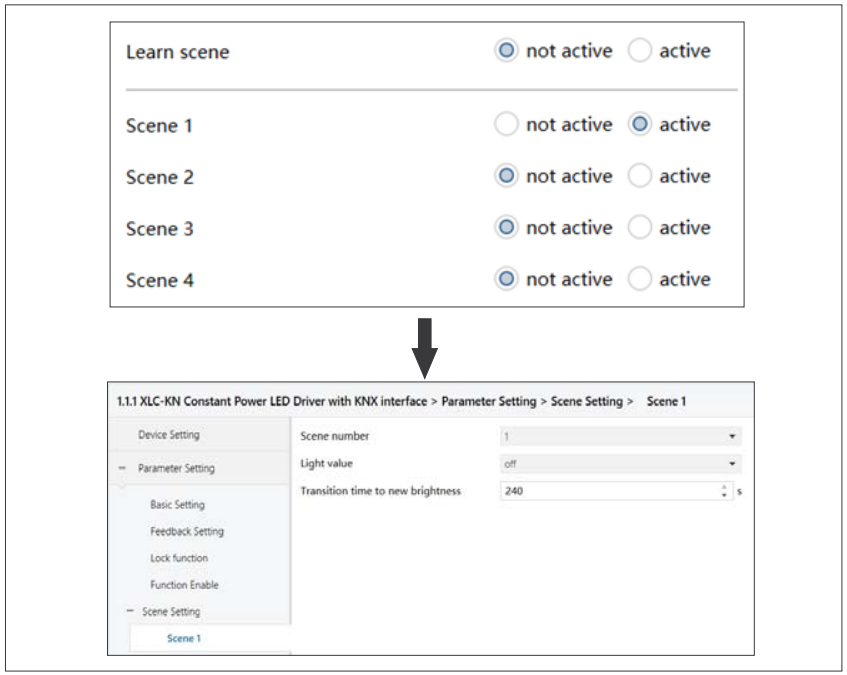
Number	Name	Length	Usage
8	Scene	1 byte	Call of the scene

For calling a certain scene, you have to send the value for the scene to the communication object.

3.9.1 Submenu scene

If a scene is activated, a new submenu will appear in the selection menu on the left. In this submenu, further parameterization can be performed.

The following figure shows the setting options on the scene (channel X: scene) submenu of scene 1-1:



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Learn scene	[not active] active	Adjusts whether the learning /saving function shall be enabled for the scenes of this channel or not. For instance: Light value of the Scene A is 20%, this Light value can be adjusted according to user's preference afterwards, say 35%, and the new value is able to be saved via DPT 18.001 scene control by other KNX devices, such as a smart home control panel.

ETS -text	Dynamic range [default value]	Comment
Scene 1-[32]	[not active] active	Activation of the depending scene
Scene Nr. 1-[32]	1-64 [1; 2; ... 32]	Adjusts the number for calling a scene
Light value scene 1-[32]	Off、10%、20%、30%、40%、50%、60%、70%、80%、90%、100% light [Off]	Adjusts the light value for a scene call
Transition time to new brightness	1-240s [10]	The time taken from the privuous setting to this new scene

At the submenu for the scenes, a reaction can be assigned for the call of each scene. This reaction includes an absolute light value (0-100%) for this channel. Every channel can react to 8 different scenes. By sending of the pickup value of the relevant scene, the scene is called and the channel adjusts its parameterized values. The individual parameterization is also watched at calling the scene.

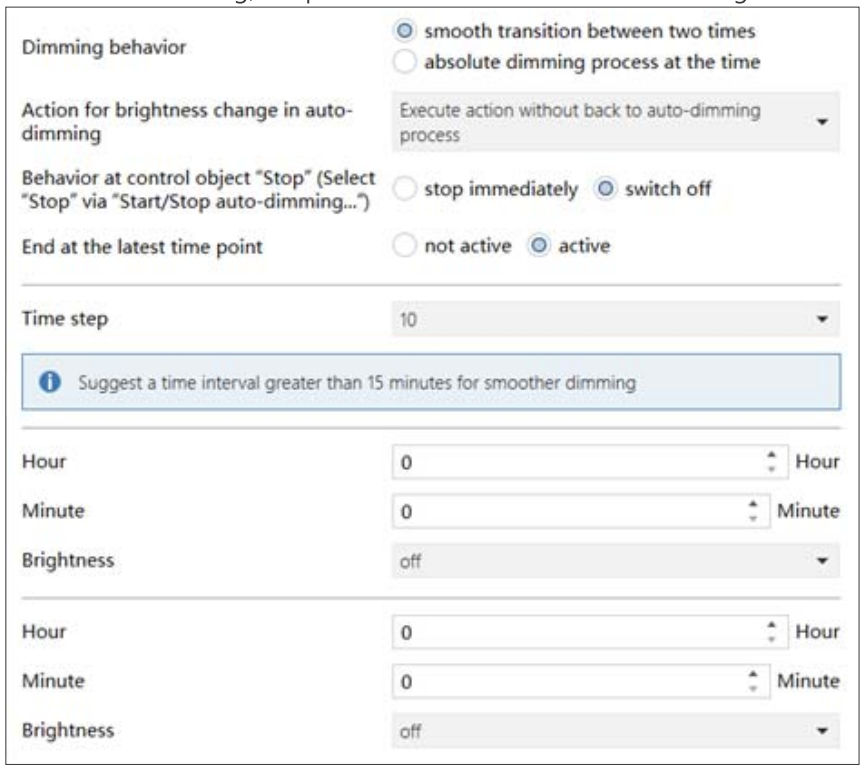
If the channel shall dim to 50% at the call of the scene A and the channel has a parameterized switch on delay of 5s, the channel will be switched on after this 5s and be dimmed to the 50% in compliance to the adjusted dimming speed.

To watch at the programming is that if two or more channels shall react to the same scene number, the communication objects for the scenes of these channels have to be connected to the same group address. By sending of the pickup value for the scenes, all channels will be called. It is practical to divide the group addresses by scenes at the programming. If a channel shall react now to 8 scenes, the communication object has to be connected to 8 different group addresses.

3.10 Auto-dimming over time

The timed dimming function can automatically adjust the brightness of the lighting fixtures through a preset time to achieve energy-saving and comfortable effects. This function can be activated in the functional area.

After active dimming, the parameters can be set in the following submenu.



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Auto-dimming over time	[not active] active	Activate or stop the timed dimming function
Dimming behavior	[smooth transition between two times] absolute dimming process at the time	Refers to the dimming mode between two set times. Choosing a gentle transition will cause the brightness to change once per minute, and it will be adjusted to the target value at the second time node; If you choose to jump directly, it will be adjusted directly to the target value at the second time node, and the brightness will remain unchanged for the rest of the time

ETS -text	Dynamic range [default value]	Comment
Action at brightness change via dimming	[no reaction] execute action with fallback execute action without fallback	This function represents the brightness change of the lamp through relative or absolute dimming commands after activating timed dimming. Choose not to act, do not respond to Relative/Absolute dimming dimming; Returning to the timed dimming curve will respond to Relative/ Absolute dimming and maintain the set time (through the delay time function) before returning to the timed dimming curve; If you choose not to return to the timed dimming curve, the response will be Relative/Absolute dimming, and the brightness will remain unchanged without continuing to run the timed dimming
Time step	2、3、4、...、10 [10]	Number of specified time points, at least 2 and at most 10
Hour	0、1、2、...、23	Set time point, unit: hour
Minute	0、1、2、...、59	Set time point, unit: minutes
Brightness	Off、0.5%、1%、2%、...、99%、100% [off]	Brightness preset value for each time period
Behavior at control object "Stop"	stop sequence [switch off]	Refers to the output state of the power supply after stopping timed dimming through instructions, whether to maintain the final output state or turn off the output
End at the latest time point	not active [active]	After running to the final time point, should we maintain the final state or rerun the set curve the next day, If we choose to activate, we will start calculating the time from 0:00 the next day and run timed dimming

3.11 Automatic function

An automatic function can be activated for every channel. The automatic function allows calling up to 4 absolute exposure values for every channel. Calling can be done via a 1 bit commands.

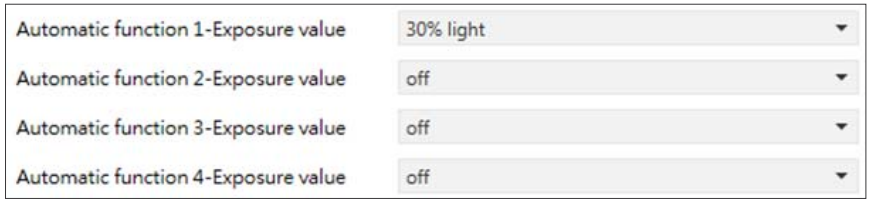
For further setting options, the automatic function of a channel must be activated.

By activation the automatic function a submenu for further parameterization is shown. Furthermore, the following communication objects are shown:

Number	Name	Length	Usage
9	Automatic 1	1 bit	Calling of the automatic value 1
10	Automatic 2	1 bit	Calling of the automatic value 2
11	Automatic 3	1 bit	Calling of the automatic value 3
12	Automatic 4	1 bit	Calling of the automatic value 4

3.11.1 Submenu automatic function

The further parameterization can be done at the submenu of the automatic function.

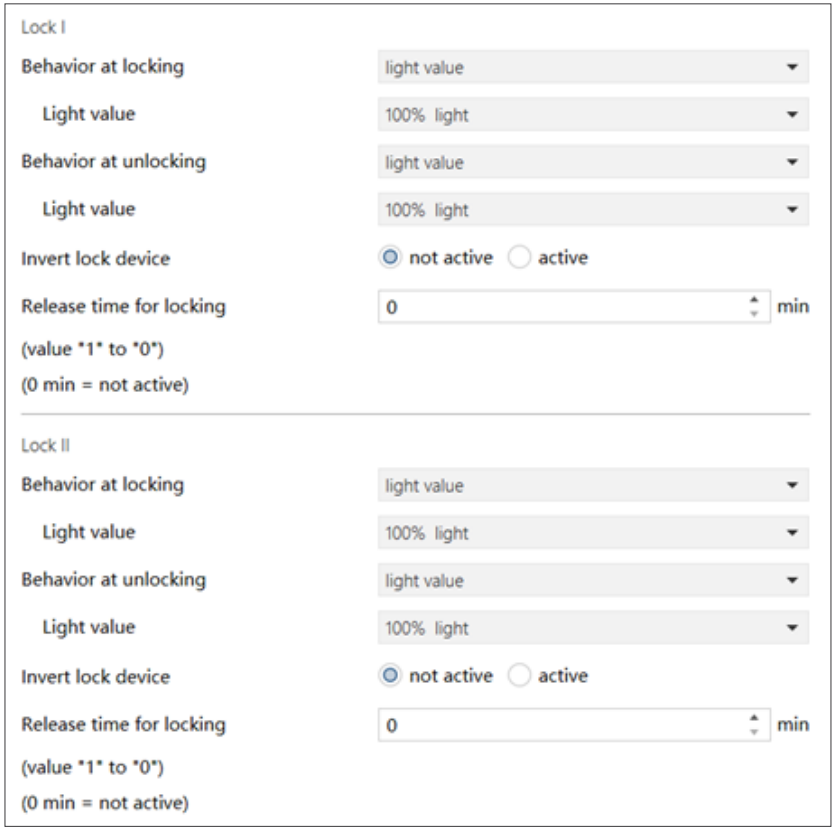


ETS -text	Dynamic range [default value]	Comment
Automatic function 1[4] –Exposure value	Off, 0.5%、1、2、...、98%、99%, 100% light [Off]	Defines the exposure value for an automatic call. Setting only activates when the corresponding object is 1

Every automatic function can be assigned an absolute exposure value (in 10% steps). The call of the automatic function is done by an 1 bit object.

3.12 Block function

Block function can be parameterized for every channel. Via the Block function, the behavior of the channel for calling the blocking objects can be assigned.



3.12.1 Blocking objects

For both blocking objects an action for activation as well as deactivation can be defined

ETS -text	Dynamic range [default value]	Comment
Behavior at Block I = Value 1	Off, no change, Light value (10%,20%,30%,..,100%) [Light value]	Defines the action for activation of the first blocking object
Behavior at Block I = Value 0	Off, no change, Light value (10%,20%,30%,..,100%) [Light value]	Defines the action for deactivation of the first blocking object

ETS -text	Dynamic range [default value]	Comment
Invert Block I input	[not active] active	If active, inverter singals recived from the Block I Object, that is 1→0; 0→1
Release time for Block I (value "1" to "0") (0 min = not active)	0-600min [0min]	Release the channel from "Behavior at Block I = Value 1" after countdown and enter "Block I = Value 0"
Behavior at Block II = Value 1	Off, no change, Light value (10%,20%,30%,..,100% [Light value]	Defines the action for activation of the second blocking object
Behavior at Block II = Value 0	Off, no change, Light value (10%,20%,30%,..,100% [Light value]	Defines the action for deactivation of the second blocking object
Invert Block II input	[not active] ·Eactive	If active, inverter singals recived from the Block II Object, that is 1→0; 0→1
Release time for Block II (value "1" to "0") (0 min = not active)	0-600min [0min]	Release the channel from "Behavior at Block II = Value 1" after countdown and enter "Block II = Value 0"

By using the blocking objects, the channel can be blocked for further usage. Additional, the channel can perform an adjusted function, as dimming to a certain value, switch the channel of or stay in its current state, when it is blocked. The same actions can be performed by the channel, when it is unblocked.

It is important to be aware that the channel cannot be operated when it is blocked. Furthermore the manual usage is blocked during a blocking process. All telegrams, which are sent to the corresponding channel during a blocking process,have no effect for the channel.

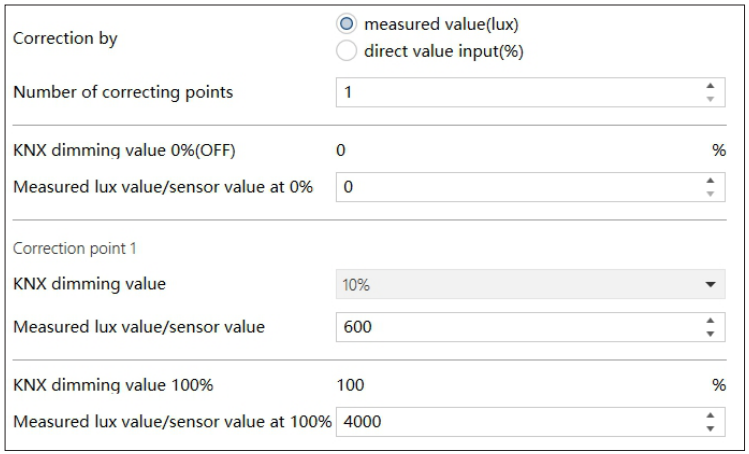
If both blocking processes are activated, the first one is of prime importance. But if you activate the second blocking process during the first blocking process, the second blocking process will get active when the first one is deactivated. The action for the deactivation of the first blocking process will not be performed, but the channel calls the adjusted settings for the second blocking process.

Number	Name	Length	Usage
12	Block I	1 bit	Activation/Deactivation of the first blocking process
13	Block II	1 bit	Activation/Deactivation of the second blocking process

Priority from the highest to the lowest is Block Ⅰ > BlockⅡ > Permanent ON > On/Off & Dimming output.

3.13 Lamp characteristic curve correction

This function is used to correct inconsistencies in brightness output for non-linear LED fixtures, ensuring that actual brightness aligns with dimming commands and avoiding uneven lighting. For example, when the lighting is at 100% output, the luminous flux is 4000lux, but when it is dimmed to 10%, the actual measured luminous flux is 600lux, which is quite different from the actual desired 400lux. It can be corrected to approximate linear by using characteristic curves

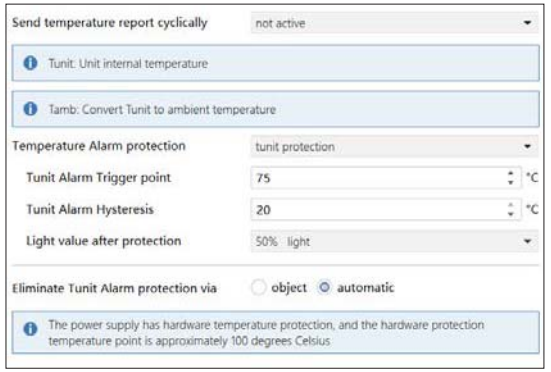


ETS -text	Dynamic range [default value]	Comment
Number of correcting points	1、2 **[1]**	Set up a maximum of 2 calibration points
Measured lux value/ sensor value at 0%	0、1、2、3、...、10000 **[0]**	Measure the minimum light flux during dimming brightness
Measured lux value/ sensor value at 100%	0、1、2、3、...、10000 **[4000]**	Measure the maximum light flux during dimming brightness
KNX dimming value	10%、20%、30%、...、90% **[10%]**	Select the percentage of dimming that needs to be corrected
Measured lux value/ sensor value	0、1、2、3、...、10000 **[400]**	Measure the true luminous flux at the calibration point

3.14 Temperature function

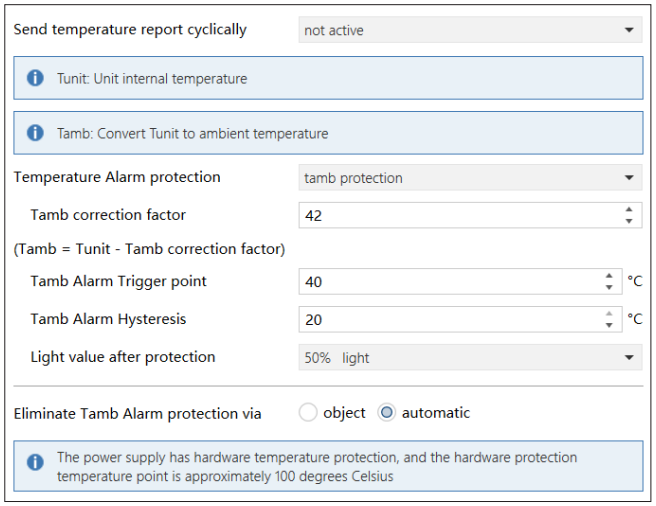
Through temperature monitoring, the temperature of the power detection point can be reported in real time, and an over temperature warning can be set to adjust the output in advance for practical use.

3.14.1 The following are the operating instructions for measuring the internal temperature of the power supply at the measuring point



ETS -text	Dynamic range [default value]	Comment
Send temperature report cyclically	not active、1min、5min、…、60min [not active]	Whether to start reporting power temperature and set the reporting time period.
Temperature Alarm protectio	[not active] tunit protection tamb protection	Whether to activate over temperature warning, you can choose to detect the i nternal temperature of the power supply or convert it to ambient temperature through temperature coefficient
Tunit Alarm Trigger point	25~85℃ [75℃]	Set temperature warning threshold
Tunit Alarm Hysteresis	5~20℃ [75℃]	Set the temperature alarm threshold to release the warning temperature: Temperature alarm threshold -Release warning threshold·
Light value after protection	Off、10%、20%、30%、...、100% [50%]	After triggering the temperature alarm, output the brightness setting
Eliminate Tunit Alarm protection via	object [automatic]	Should the temperature alarm be automatically released or commanded to be released

3.14.2 The following are the operating instructions for measuring the ambient temperature at the measuring point



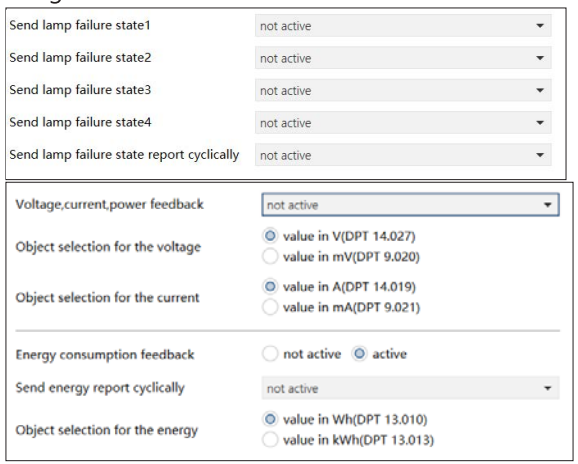
ETS -text	Dynamic range [default value]	Comment
Send temperature report cyclically	not active、1min、5min、…、60min [not active]	Whether to start reporting power temperature and set the reporting time period
Temperature Alarm protection	[not active] tunit protection tamb protection	Whether to activate over temperature warning, you can choose to detect the internal temperature of the power supply or convert it to ambient temperature through temperature coefficient
Tamb correction factor	0~50℃ [42℃]	This coefficient refers to the difference between the internal temperature of the power supply and the ambient temperature
Tunit Alarm Trigger point	25~85℃ [40℃]	Set temperature warning threshold
Tunit Alarm Hysteresis	5~20℃ [20℃]	Set the temperature alarm threshold to release the warning temperature: Temperature alarm threshold - Release warning threshold
Light value after protection	Off、10%、20%、30%、…、100% [50%]	After triggering the temperature alarm, output the brightness setting
Eliminate Tunit Alarm protection via	object [automatic]	Should the temperature alarm be automatically released or commanded to be released

3.15 Restore factory settings

Long press the programming button for more than 10 seconds to restore XLC-40-H-KN to its factory settings

3.16 Other useful information

The driver also provides some useful information, including output shortcircuit detection and energy consumption feedback. Energy consumption feedback function records the output power and efficiency of the LED driver, estimating energy consumption over periods ranging from 10 minutes to 1 week. The data is then fed back to KNX system management, helping users optimize energy budgets.



The chart shows the dynamic range for this parameter:

ETS -text	Dynamic range [default value]	Comment
Enable LED driver output error detection	active [not active]	Activate output short circuit, open circuit overheating or power failure detection
send voltage	active [not active]	Feedback power output voltage

ETS -text	Dynamic range [default value]	Comment
Enable LED driver output error detection	active [not active]	Activate output short circuit, open circuit overheating or power failure detection
send voltage	active [not active]	Feedback power output voltage
send current	active [not active]	Feedback power output current
send power	active [not active]	Feedback power output power
Energy consumption feedback	active [not active]	Feedback power consumption, only for reference resources
Send output power report cyclically	not active、10min、20min、30min 、40min、50min、60min、1day、7day	Send power consumption reports at predetermined time intervals

The following table shows the dynamic range of this parameter:

Number	Name	Length	Usage
21、22、23、24	Send lamp failure state	1 bit	When the load experiences a short circuit, open circuit, overheating, or power failure, a signal is emitted. "1" =Alarm; "0" =No alarm detected

4.Warranty

This product provides five years warranty under normal usage. Do not replace parts or any form of modification to the product in order to keep the warranty effectively.

※**MEAN WELL possesses the right to adjust the content of this manual. Please refer to the latest version of our manual on our website. https://www.meanwell.com**

MEAN WELL WEB

5.Environmental declaration information

https://www.meanwell.com//Upload/PDF/RoHS_PFOS.pdf

https://www.meanwell.com//Upload/PDF/REACH_SVHC.pdf

https://www.meanwell.com//Upload/PDF/Declaration_RoHS-E.pdf

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