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D-0-1C-25-DIM-DALI

Phase Dimmer with DALI control input



D-0-1C-25-DIM-DALI
25W LRC dimmer

Description — Fonctions :

- Suitable for dimming of 230V LED-retrofit-bulbs via DALI (Device Type 4 from firmware 3.0 and higher)
- Types for loads from 3W to 25W (PD) for back box installation
- trailing edge phase cut dimmer for resistive and capacitive loads, leading edge phase cut dimmer for resistive and inductive loads as well available as universal dimmer
- conversion of the DALI dimlevel into a phase cut controlled voltage (trailing/leading edge)
- the minimum dim level can be set via DALI (MIN LEVEL)
- additional operating mode as switch (DT7 compliant) available with firmware 3.5 and higher
- the module represents a DALI-line client and therefore it has its own DALI-address.
- double DALI terminals - the DALI signal line is connected through.

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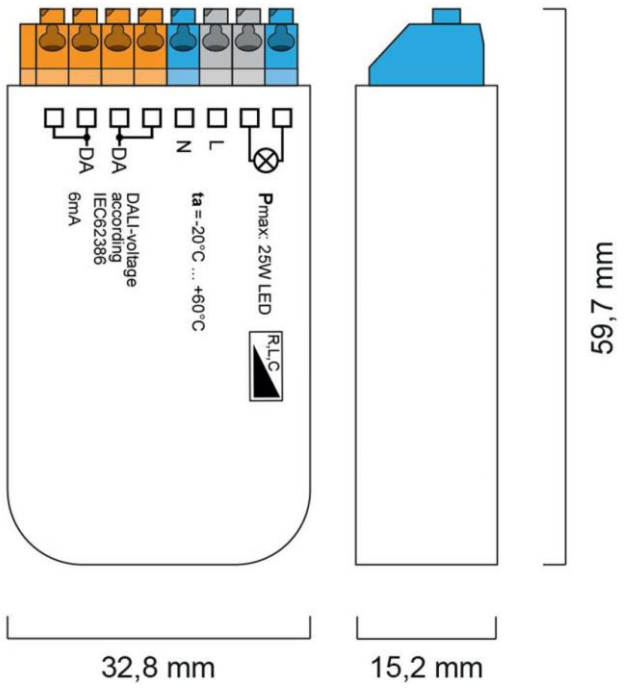
Characteristics :

SPECIFICATIONS, CHARACTERISTICS		
Input: L,N	Input type	Mains
	Marking terminals	L,N
	Rated input voltage	230Vac
	Input voltage frequency	50Hz
	max. input power	25 W
Input: DA, DA	Input type	DALI, supply
	Marking terminals	DA, DA
	input voltage range	9,5V ... 22,5V
	max. current consumption DALI	6mA
	number of DALI addresses	1
Output: L',N	output type	trailing/leading edge phase cut of mains
	marking terminals	L', N bzw.
	output voltage	230Vac, like input
	phase cut angle	0°-180°
	output voltage frequency	50Hz, like input
	max. output current	0.2A Eff ac
	load range	3-25 W
	max. length between device and luminaire	50m
Insulation data:	impulse voltage category	II
	pollution degree	2
	rated insulation voltage	250V
	insulation DALI (DA+,DA-) / (L/N/L')	reinforced isolation
	insulation test voltage	3000Vac
environmental conditions:	storing and transportation temperature	-20°C ... +75°C
	operational ambient temperature	-20°C ... +60°C
	Rel. humidity, none condensing	15% ... 90%
General data	dimensions (l x w x h)	59x33x15mm
	mounting	built-in, integration in protection class II devices
	rated max. temperature tc	65°C
	expected life time @tc	50.000 h
	protection class	II in intended use
	protection degree housing	IP40
	protection degree terminals	IP20

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SPECIFICATIONS, CHARACTERISTICS		
Terminals	Connection type	spring terminal connector
	wire size solid core	0,5 ... 1,5 mm2 (AWG20 ... AWG16)
	wire size fine wired	0,5 ... 2,5 mm2 (AWG20 ... AWG16)
	wire size using wire end ferrule	0,25 ... 1 mm2
	stripping length	8,5 ... 9,5 mm / 0,33 ... 0,37 inch
	locking torque	-
	actuation type	Push button
Standards	Dali	EN 62386-101, EN62386-102, EN62386-205
	EMC	EN 61547 EN 50015 / IEC CISPR15
	safety	EN 61347-2-11 EN 61347-1
	marking	ENEC-11, CE



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Installation

· The DALI PD is suitable for integration in protection class II devices, ensure proper working cable relief for installation
· Wiring as fixed installation in a dry and clean environment
· Installation only by qualified person when no voltage is applied, even in case of only changing the luminaire no voltage must be applied.
· Attend regulations regarding electrical installations of national authorities
· Connect terminals L and N to mains
· Connect terminals L‘ and N or with the light bulb symbol to the load. Ensure that the wiring length to the load does not exceed 50m
· Do only connect luminaires that are in the rated power range of the dimmer and which are suitable with respect to the load type. Do also consider the power factor of the luminaires (especially for lamps with rated power below 25W) the connection to the DALI-line (DA, DA) is polarity free
· The DALI PD is supplied by the DALI-line (current consumption ~6mA)
· The DALI-line may be installed within the same cable or as single conductors within the same tube as mains supply
· The DALI-line must not be connected to the mains or other extra low voltage systems
· DALI-line wiring with standard low voltage installation material
· Wiring topology of the DALI-line: Line, Tree, Star

HINT: The DALI-signal is not classified as SELV circuit.
Therefore the standards for installation in low voltage system apply.

The voltage drop on the DALI-line shall not exceed 2V.

ATTENTION: The intended use of DALI PD is dimming of LED-retrofit-luminaires, do not use with halogen lamps or magnetic transformers.

Universal dimmer LRC

dimmer type	suitable loads		
R,L,C	R	L	C

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Commissioning

· The DALI-PD is ready to use, it is supplied by the DALI-line (current consumption ~6mA)
· With the help of the DALI-Cockpit the DALI PD can be adressed and assigned to groups and scenes

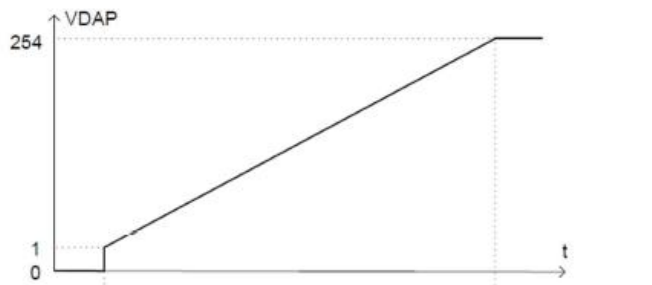
Function
The DALI PD interface converts the DALI dim level into a voltage signal. The phase cut control generates a sinusoidal voltage with leading/trailing edge phase cut (logarithmic dimming characteristic corresponding to DALI). The operation mode (trailing/leading edge) can be queried via DALI (DT4). The PHYSICAL MINLEVEL is 3%.

Up from firmware version 3.5 an additional operating mode is supported. Instead of phase dimming (DT4) the device can act as switch (DT7 capable). Hence the switching characteristic is determined by the comparison of the virtual direct arc power level (VDAP) with 4 thresholds.

The virtual dim level (VDAP) is like the dim level of DALI-ballasts and is therefore limited by MINLEVEL and MAXLEVEL and influenced by fade-time and fade-rate.

For each dim direction 2 thresholds can be defined. They are compared with the virtual dim level and as a result the output is switched on or off:

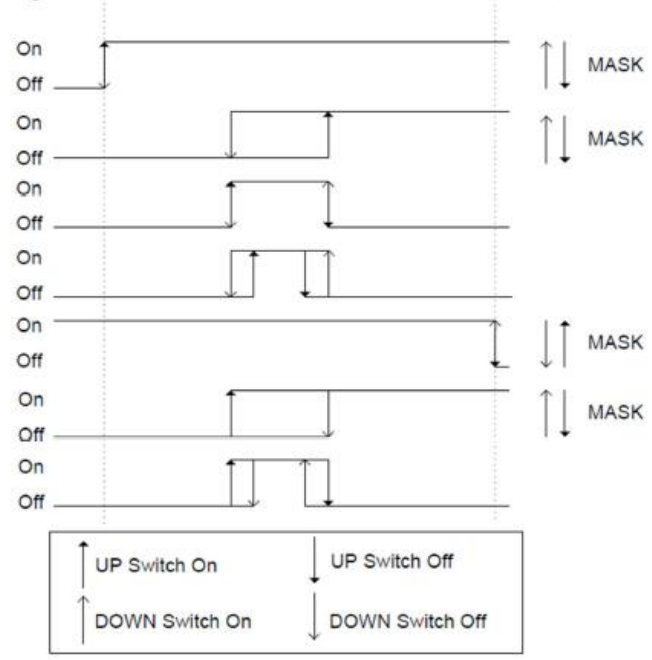
virtual dim direction	comparison of virtual dim level and thresholds	output
UP	VDAP>= UP SwitchOn Threshold	ON
UP	VDAP>= UP SwitchOff Threshold	OFF
DOWN	VDAP<= DOWN SwitchOn Threshold	ON
DOWN	VDAP<= DOWN SwitchOff Threshold	OFF



With the help of the fade time switch on and switch off delays can be realized.

Since the device is bus powered the configurable SYSTEM FAILURE LEVEL is not supported. In case of a DALI-line outage the DALI PD applies 100% at the output whereas at the output of the DALI PD300 0% are applied.

The Configuration can be done easily with the help of the DALI configuration software :

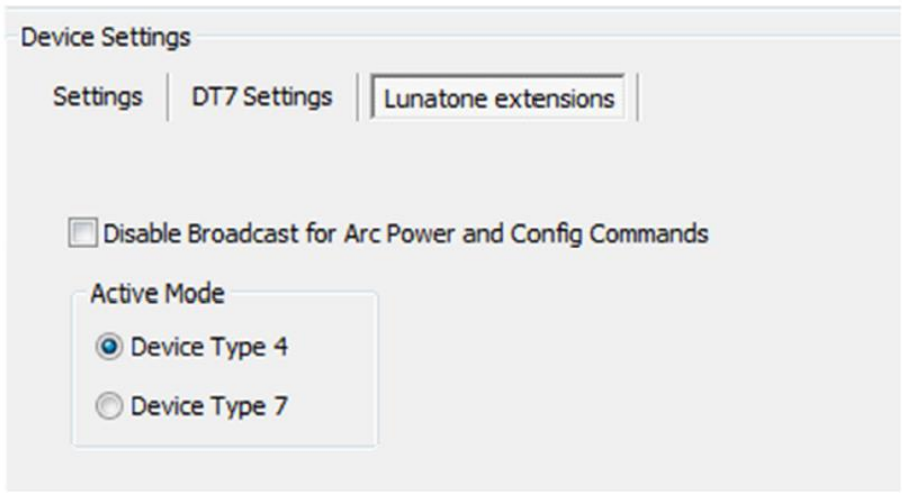


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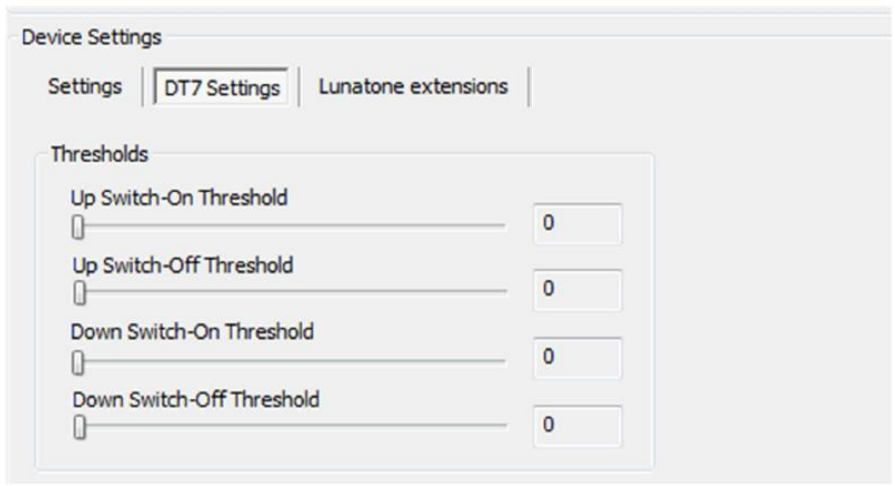
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General Settings:





DT7 Settings:



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