

IP20     

**TALEXconverter LCAI 40 W 300 mA I010 one4all 220-240 V**  
ECO series

## Product description

- Dimmable built-in LED control gear for LED
- Constant current LED control gear with 300 mA output current
- Output power 40 W
- Nominal lifetime of 50,000 h (at ta 55 °C with a failure rate max. 0.2 % per 1,000 h)
- 5-year guarantee

## Properties

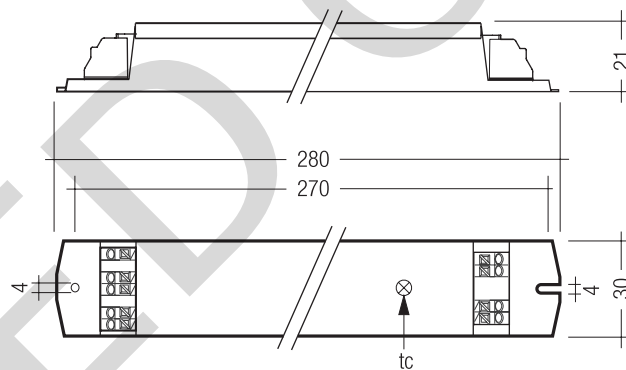
- Low-profile metal casing with white cover
- Type of protection IP20

## Interfaces

- DALI (device type 6)
- DSI
- switchDIM (with memory function)
- corridorFUNCTION

## Functions

- Overload protection
- Overtemperature protection
- Short circuit proof
- Dimming in DC adjustable
- Suitable for emergency lighting units acc. to EN50172



## Ordering data

Type	Article number	Packaging carton	Packaging pallet	Weight per pc.
LCAI 040/0300 I010 one4all 220-240 V	86459430	10 pc(s).	960 pc(s).	0.213 kg

#### Technical data

Rated supply voltage	220 – 240 V
AC Voltage range	198 – 264 V
DC Voltage range	170 – 280 V
Mains frequency	0 / 50 / 60 Hz
Typ. rated current (at 230 V / 50 Hz / full load) <sup>①</sup>	0.2 A
Mains current (at 220 V / 0 Hz / full load) <sup>②</sup>	0.04 A
Leakage current (PE)	0.25 mA
Max. input power	49 W
Typ. efficiency (at 230 V / 50 Hz / full load) <sup>③</sup>	90 %
Typ. $\lambda$ (at 230 V / 50 Hz / full load) <sup>③</sup>	0.95
Typ. power input on standby	1 W
Dimming range	3 – 100 %
PWM frequency	400 Hz
Typical ripple current at full load	$\pm 15$ %
Max. non-repetitive output peak current	500 mA
Switch-on time (DC mode)	0.4 s
Switch-on time (at 230 V / 50 Hz / full load / acc. to the DALI standard) <sup>④</sup>	0.6 s
Switchover time (AC/DC)	0.2 s
Turn off time (at 230 V / 50 Hz / full load)	0.3 s
Hold on time at power failure (output)	20 ms
ta operating (at life time 50,000 h)	-20 ... +55 °C
Max. casing temperature tc	75 °C
Dimensions LxWxH	280 x 30 x 21 mm
Hole spacing D	270 mm

#### Specific technical data

Type	Output current <sup>⑤</sup>	Output current tolerance <sup>⑤</sup>	Output voltage range	Max. output voltage <sup>⑥</sup>	Typ. output power
LCAL 040/0300 I010 one4all 220-240 V	300 mA	$\pm 5$ %	60 – 135 V	420 V	40 W

<sup>①</sup> Valid at 100 % dimming level

<sup>②</sup> Valid at 15 % dimming level

<sup>③</sup> In no-load operation

### Standards

EN 55015  
EN 61000-3-2  
EN 61000-3-3  
EN 61347-1  
EN 61347-2-13  
EN 61547  
EN 62384  
IEC 62386-101  
IEC 62386-102  
IEC 62386-207

According to the EN 50172 suitable for central battery systems  
According to the EN 60598 suitable for emergency lighting installations

### Overload protection / underload protection

If the output voltage range is exceeded the LED control gear turns off the LED output and tries a restart every 6 seconds. The overload protection is deactivated in emergency operation.

### Overtemperature protection

The LED control gear is protected against temporary thermal overheating. If the temperature limit is exceeded the output current of the LED is reduced. The temperature protection is activated between 8 and 12 °C above  $t_c$  max (see page 1). This function is deactivated in emergency operation.

### Short-circuit behaviour

In case of a short circuit on the secondary side (LED) the LED output is switched off. Every 6 seconds the LED control gear tries to restart.

### No-load operation

The LED control gear is not damaged in the no-load operation. Every 6 seconds the LED control gear tries to restart. The max. output voltage (see page 1) can be obtained for a short time (50 ms) during no-load operation.

### Expected lifetime

Type	$t_c$	$t_a = 50\text{ °C}$	$t_a = 55\text{ °C}$
LCAI 040/0300 I010 one4all 220-240 V	Lifetime	70 °C 75,000 h	75 °C 50,000 h

### Storage conditions

Humidity: 5 % up to max. 85 %, not condensed (max. 56 days/year at 85 %)

Storage temperature: -40 °C up to max. +80 °C

The devices have to be within the specified temperature range ( $t_a$ ) before they can be operated.

### Maximum loading of automatic circuit breakers

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current
Installation $\emptyset$	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	4 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	4 mm <sup>2</sup>	$I_{max}$ Duration
LCAI 040/0300 I010 one4all 220-240 V	22	30	38	48	11	15	21	26	25 A 185 $\mu$ s

### Harmonic distortion in the mains supply (at 230 V/50 Hz and full load) in %

	THD	3.	5.	7.	9.	11.
LCAI 040/0300 I010 one4all 220-240 V	9	6	1.5	2.5	3	1.5

## Dimming

Dimming range 3 % to 100 %

Digital control with:

- DSI signal: 8 bit Manchester Code  
Speed 3 % to 100 % in 1.4 s
  - DALI signal: 16 bit Manchester Code  
Speed 3 % to 100 % in 0.1 s
- Programmable parameter:
- Minimum dimming level
  - Maximum dimming level
  - Default minimum = 3 %
  - Programmable range  $3\% \leq \text{MIN} \leq 100\%$
  - Default maximum = 100 %
  - Programmable range  $100\% \geq \text{MAX} \geq 3\%$

Dimming curve is adapted to the eye sensitiveness.

## Control input (DA/D1, DA/D2)

Digital DALI signal or switchDIM can be wired on the same terminals (DA/D1 and DA/D2).

## Digital signal DALI/DSI

The control input is non-polar and protected against accidental connection with a mains voltage up to 264 V. The control signal is not SELV. Control cable has to be installed in accordance to the requirements of low voltage installations. Different functions depending on each module.

## switchDIM

Integrated switchDIM function allows a direct connection of a push to make switch for dimming and switching.

Brief push (< 0.6 s) switches LED control gear ON and OFF. The LED control gears switch-ON at light level set at switch-OFF.

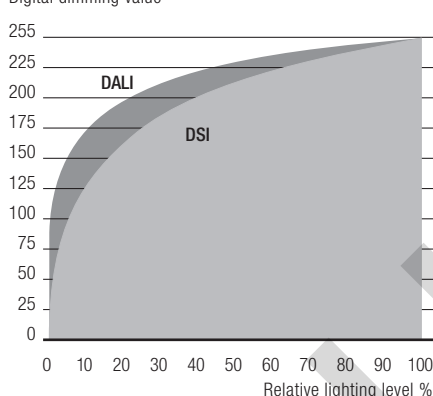
When the push to make switch is held, LED modules are dimmed. After repush the LED modules are dimmed in the opposite direction.

In installations with LED control gears with different dimming levels or opposite dimming directions (e.g. after a system extension), all LED control gears can be synchronized to 50 % dimming level by a 10 s push.

Use of push to make switch with indicator lamp is not permitted.

## Dimming characteristics

Digital dimming value



Dimming characteristics as seen by the human eye

## corridorFUNCTION

The corridorFUNCTION can be programmed in two different ways.

To program the corridorFUNCTION by means of software a DALI-USB interface is needed in combination with a DALI PS. The software can be the masterCONFIGURATOR.

To activate the corridorFUNCTION without using software a voltage of 230 V simply has to be applied for five minutes at the switchDIM connection. The unit will then switch automatically to the corridorFUNCTION.

Note:

If the corridorFUNCTION is wrongly activated in a switchDIM system (for example a switch is used instead of pushbutton), there is the option of installing a pushbutton and deactivating the corridorFUNCTION mode by five short pushes of the button within three seconds.

switchDIM and corridorFUNCTION are very simple tools for controlling ballasts with conventional momentary-action switches or motion sensors.

To ensure correct operation a sinusoidal mains voltage with a frequency of 50 or 60 Hz is required at the control input.

Special attention must be paid to achieving clear zero crossings. Serious mains faults may impair the operation of switchDIM and corridorFUNCTION.

## Light output level in DC operation

Programmable from 3 % to 100 %

Programming by extended DSI or DALI signal (16 bit).

Default value is 15 %

In DC operation dimming mode can be activated.

## Programming

With appropriate software and a USB interface different functions can be activated and various parameters can be configured in the TALEXconverter LCAI 040/0300 I010 one4all. All that is needed is a DALI-USB and the software (masterCONFIGURATOR).

## masterCONFIGURATOR

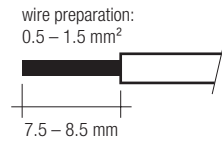
For programming the corridorFUNCTION, device configuration (fade time, ePowerOnLevel, etc.) DC level, compatibility settings, and startup date and for resetting.

### Wiring guidelines

- The secondary cables should be run separately from the mains connections and mains cables to ensure good EMC conditions
- The LED wiring should be kept as short as possible to ensure good EMC. The max. secondary cable length must not exceed 2 m. Cable lengths bigger than 2 m may lead to a malfunction of the LED control gear.
- Secondary switching is not permitted.
- The LED control gear does not have polarity reversal protection on the secondary side. LED modules that do not have polarity reversal protection may be damaged if polarity is reversed.

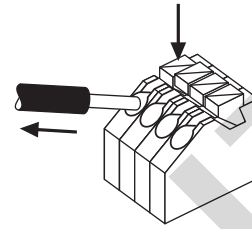
### Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid from 0.5 – 1.5 mm<sup>2</sup>. For perfect function of the push-wire terminals (WAGO 250) the strip length should be 7.5 – 8.5 mm.



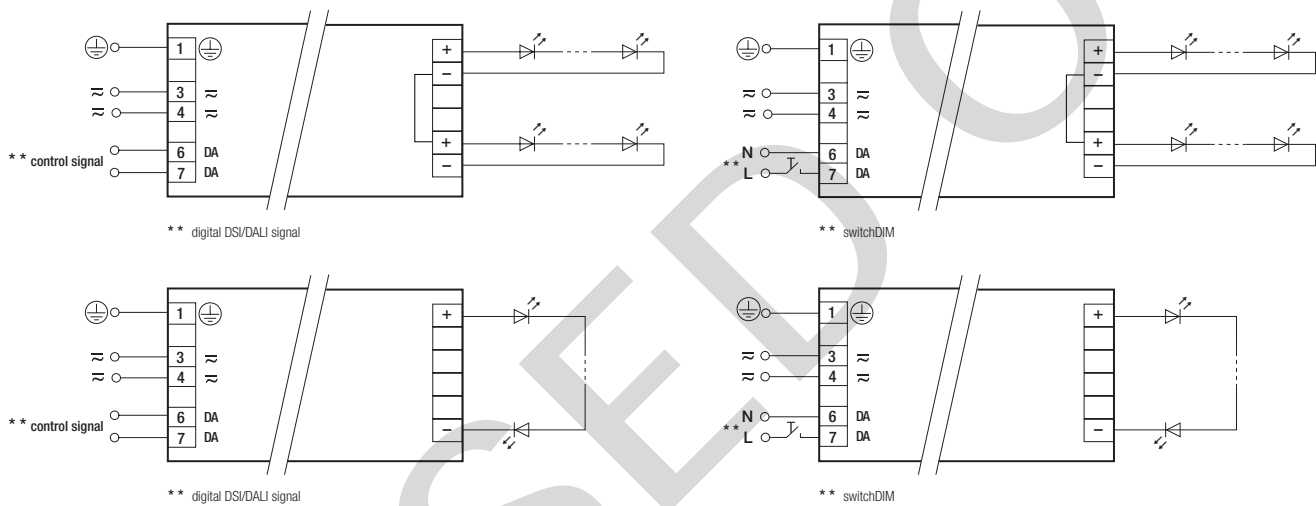
### Release of the wiring

Press down the "push button" and remove the cable from front.



**!** LED control gear is not SELV (output voltage up to 420 V).

### Circuit diagrams



LED's have to be connected as shown above to work properly. It is possible to connect a different number of LED's on two circuits (like on top picture). The minimum power load has to be connected. Otherwise the LED control gear will switch off.

### Operation on DC voltage

The LED control gear is designed for operation with DC voltage and pulsed DC voltage.