

IP20 

**TALEXconverter LCAI 70 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 70 W
- Nominal life-time of 50,000 h (at ta 50 °C with a failure rate max. 0.2 % per 1,000 h)
- 5-year guarantee

### Properties

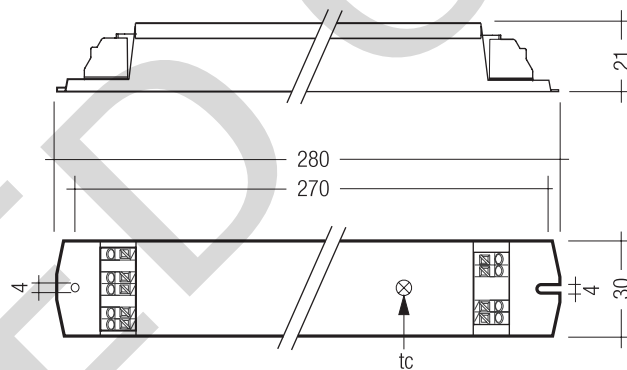
- Low-profile metal casing with white cover
- Type of protection IP20

### 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 escape lighting systems acc. to EN50172



### Ordering data

Type	Article number	Packaging carton	Packaging pallet	Weight per pc.
LCAI 070/0300 I010 one4all 220-240 V	28000210	10 pc(s).	960 pc(s).	0.214 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>	360 mA
Mains current (at 220 V / 0 Hz / full load) <sup>②</sup>	100 mA
Leakage current (PE)	0.4 mA
Max. input power	77 W
Typ. efficiency (at 230 V, 50 Hz, full load) <sup>③</sup>	93 %
Typ. $\lambda$ (at 230 V / 50 Hz / full load) <sup>④</sup>	0.95
Typ. power input on standby	< 1 W
Switch-on time (DC mode)	0.4 s
Switch-on time (at 230 V / 50 Hz / full load / acc. to the DALI standard) <sup>⑤</sup>	0.6 s
Switchover time (AC/DC)	0.2 s
Turn off time (at 230 V / 50 Hz / full load)	0.1 s
Hold on time at power failure (output) <sup>⑥</sup>	4 ms
Output current ripple	18 %
Max. non-repetitive output peak current	600 mA
PWM frequency	400 Hz
Dimming range	3 – 100 %
Burst / surge peaks output side against PE	4 kV
Operating temperature range $t_a$	-20 ... +50 °C
Max. casing temperature $t_c$	70 °C
Dimensions LxWxH	280 x 30 x 21 mm
Hole spacing D	270 mm

### Specific technical data

Typ	Output current <sup>①</sup>	Output current tolerance <sup>①</sup>	Output voltage range	Max. output voltage <sup>⑦</sup>	Typ. output power
LCAI 070/0300 I010 one4all 220-240 V	300 mA	± 5 %	116 – 240 V	420 V	70 W

<sup>①</sup> For an output power lower than 60 W the output current tolerance is between -5 and +10 %. For an output power lower than 45 W the output current tolerance is between -5 and +15 %.

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

<sup>③</sup> At power failure

<sup>④</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 life-time

Type	$t_c$	$t_a = 40\text{ °C}$		$t_a = 50\text{ °C}$	
		Life-time	60 °C	70 °C	Life-time
LCAI 070/0300 I010 one4all 220-240 V		100,000h			

The LED control gear is designed for a life-time stated above under reference conditions and with a failure probability of less than 10 %.

### 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>	$I_{max}$
LCAI 070/0300 I010 one4all 220-240 V	14	18	22	26	7	9	11	13	40 A	200 $\mu$ s

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

	THD	3.	5.	7.	9.	11.
	LCAI 070/0300 I010 one4all 220-240 V	12	10	3	4	4

### 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.

### 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.

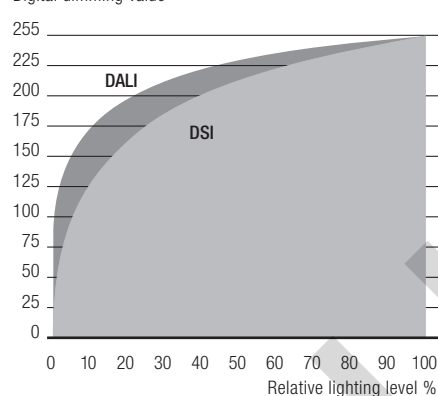
When the push to make switch is held, LED modules are dimmed. After repush the LED modules are dimmed in the opposite direction.

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 070/300 I010 one4all. All that is needed is a DALI-USB and the software (masterCONFIGURATOR).

### masterCONFIGURATOR

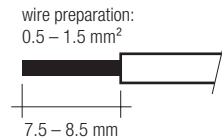
For programming the corridorFUNCTION, device configuration (fade time, ePowerOnLevel, etc.) DC level, compatibility settings, and startup date and for resetting.

### 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.

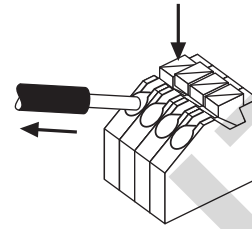
### Wiring type and cross section

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.



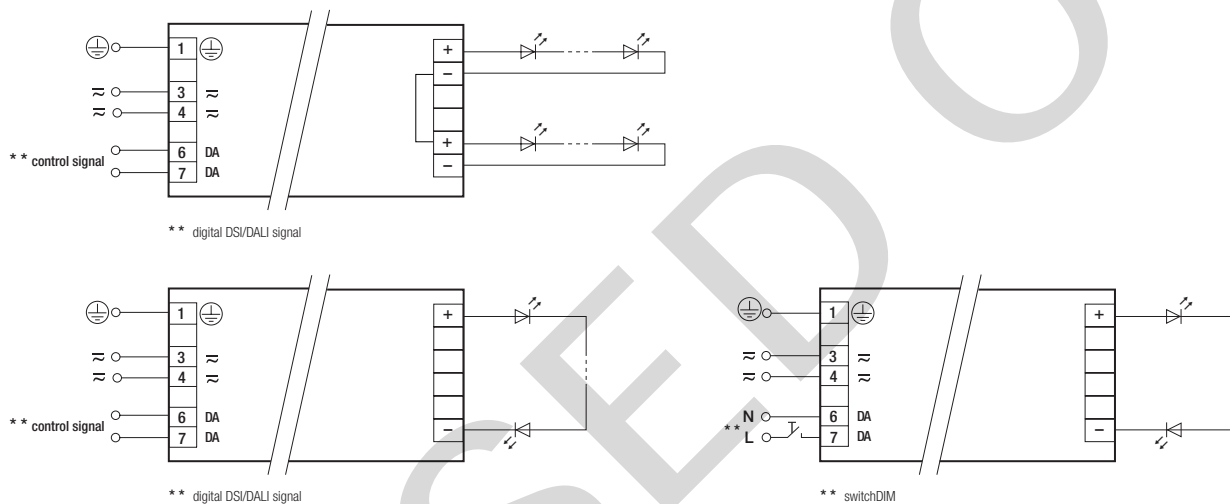
### Release of the wiring

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.

### DC emergency operation

The LED Driver is designed for operation on DC voltage and pulsed DC voltage.

Light output level programmable from 1 – 100 %  
Programming by extended DSI or DALI signal (16 bit).  
Default value is 15 %  
In DC operation dimming mode can be activated.

The voltage-dependent input current of Driver incl. LED module is depending on the used load.

The voltage-dependent no-load current of Driver (without or defect LED module) is for:

AC: 47 mA  
DC: 14 mA

### Isolation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an isolation test with 500 V<sub>DC</sub> for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.

The isolation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V<sub>AC</sub> (or 1.414 x 1500 V<sub>DC</sub>). To avoid damage to the electronic devices this test must not be conducted.

### Additional information

Additional technical information at  
[www.tridonic.com](http://www.tridonic.com) → Technical Data

Guarantee conditions at  
[www.tridonic.com](http://www.tridonic.com) → Services

No warranty if device was opened.