

IP20 SELV 

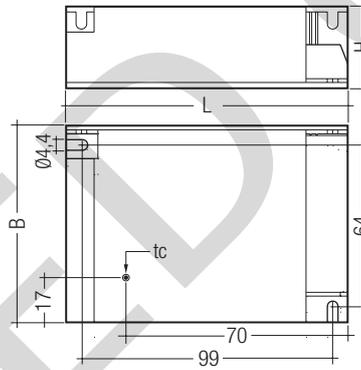
TALEXconverter LCAI 55 W 1400 mA 0010 DALI  
ECO series

## Product description

- 1-channel LED converter for indoor use
- Inbuilt converter for luminaires of protection class I
- Output current and output voltage adjustable
- FAN output 12 V
- NTC input channel
- Nominal life of 50,000 h (at ta max. with a failure rate of 5 %)
- Dimmable via DALI, 1 ... 10 V, potentiometer or PUSH function (incl. Memory function)<sup>®</sup>
- Overload protection<sup>®</sup>
- Thermal protection<sup>®</sup>
- Plastic casing, black

## Technical data

Rated supply voltage	220 – 240 V
Mains frequency	0 / 50 / 60 Hz
Rated current (at 230 V / 50 Hz / full load)	0.52 A
Typ. efficiency (at 230 V / 50 Hz / full load)	90 %
$\lambda$ (at 230 V / 50 Hz)	0.98
Leakage current (PE)	0,34 mA
Control input	DALI, 1 ... 10 V, potentiometer 100 k $\Omega$ and PUSH function <sup>®</sup>
Stand-by power (at 230 V / 50 Hz)	< 1 W
Max. output voltage <sup>®</sup>	55 V
Dimming range	0 – 100 %
PWM frequency	220 – 240 Hz
Set up time at 230 V	600 ms
Switch-off time (at full load)	100 ms
FAN output, voltage	12 V
FAN output, current <sup>®</sup>	50 mA
Max. casing temperature $t_c$	85 °C
Max. casing temperature $t_c$ (at lifetime 50,000 h)	80 °C
Dimensions LxWxH	110 x 76 x 30 mm



## Ordering data

Type	Article number	Packaging carton	Packaging pallet	Weight per pcs.
LCAI 055/1400 0010 DALI	24166471	40 pieces	1,600 pieces	0.23 kg

Specific technical data

Type	Output	Tolerance	Typ. power	Output voltage range	Max. output current	Operating temperature $t_a$
LCAI 055/1400 0010 DALI	1,050 mA	±6 %	45 W	2 – 44 V	–	-25 ... 50 °C
	1,200 mA	±5 %	52 W	2 – 44 V	–	-25 ... 50 °C
	1,400 mA (default)	±5 %	55 W	2 – 39 V	–	-25 ... 50 °C
	1,600 mA	±5 %	55 W	2 – 35 V	–	-25 ... 50 °C
	1,750 mA	±5 %	55 W	2 – 30 V	–	-25 ... 50 °C
	2,100 mA	±5 %	55 W	2 – 26 V	–	-25 ... 45 °C
	48 V	±10 % <sup>Ⓔ</sup>	55 W	–	1,150 mA	-25 ... 50 °C

<sup>Ⓔ</sup> PUSH function is not compatible to switchDIM.

<sup>Ⓒ</sup> 1 ... 10 V<sub>DC</sub> source with double or reinforced insulation with respect to AC mains. Max. source current: 0.35 mA.

<sup>Ⓓ</sup> No-load operation.

<sup>Ⓗ</sup> Max. permitted inrush current: 100 mA.

<sup>Ⓖ</sup> On overload and over temperature the output power will be reduced.

<sup>Ⓖ</sup> Ripple 5 V<sub>pp</sub>.

### Standards

Acc. to EN 50172  
EN 55015  
EN 60598-2-22  
EN 61000-3-2  
EN 61000-3-3  
EN 61347-1  
EN 61347-2-13  
EN 61547  
EN 62384  
EN 62386-101  
EN 62386-102  
EN 62386-207 (DALI DEVICE Type 6)

### Dimming

Dimming range 1 % to 100 %  
Control with:

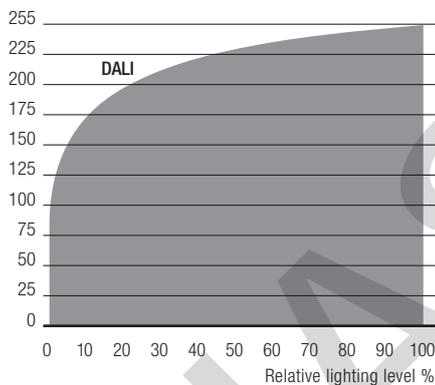
- DALI signal
- PUSH function
- Potentiometer
- 1 ... 10 V

### Digital signal DALI

The control input is non-polar. 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.

### Dimming characteristics

Digital dimming value



Dimming characteristics as seen by the human eye. A linear dimming characteristic can be activated optionally via DALI (DALI command: SELECT DIMMING CURVE).

### 1 ... 10 V function

The light intensity of the LEDs vary proportionally to the signal sent to the terminal. Intensity is null with a signal less than 1 V.

### Potentiometer function

By rotating the potentiometer there is variation of the LED light intensity in a proportionate or logarithmic way depending on the model of potentiometer used. The use of a logarithmic potentiometer is recommended.

### Synchronisation

A maximum of 10 devices in series can be controlled with a momentary-action switch, potentiometer or 1...10V interface. Only one master device is permitted. (1 master + 9 slaves)

The maximum length of the synchronisation cable between the devices should not exceed 4 m.

### PUSH function

Integrated Push function allows a direct dimming via push button. Push button must be connected between the terminal block (PUSH) and Phase (L). Maximum 10 driver in series controlled by one or more push buttons. The maximum length of push cables is 15 m.

- Brief push (<1 s) switches the device ON and OFF. The device switch-ON at light level set at switch-OFF
- When the push button is held (>1 s), the devices are dimmed. After repush the devices is dimmed in the opposite direction.



The use of the push button inhibits the use of the 1...10V signal. To return to use of the 1...10V signal keep the signal less than 0,5V for at least 2 seconds.

### PUSH function (memory mode)

If the mains isn't switched off and the switching on/off is done by a momentary-action switch (push button) then the LED driver will start again at the same level it was.

### PUSH synchronisation

If more than one device is operated with a single key during PUSH operation, asynchronous behaviour can occur, which will require manual resynchronisation using the method described. It is recommended not to control more than four devices using a single key. Should this be unacceptable, a synchronisation cable will have to be used instead. Any 1-key dimmer that does not feature a central control module (as each driver will have its own controls) can develop asynchronous behaviour (e.g. children might play with the key). The system will then be out of sync, i.e. some lamps will be on, others off or the dimming direction will differ from lamp to lamp.

If the drivers are switched on, press the PUSH key for more than one second (long PUSH) followed with a short push (<1 s). Now the devices are switched off, do a long PUSH, the system will now be resynchronised."

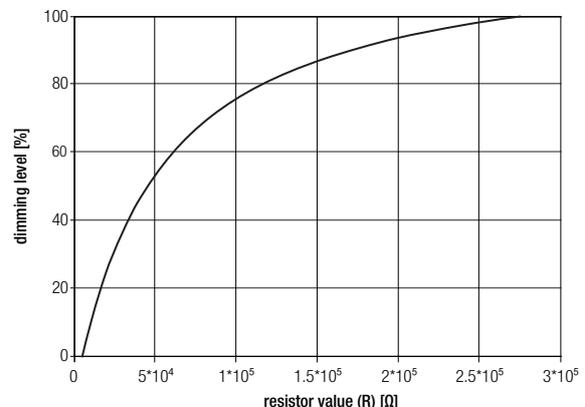


The PUSH function is not compatible to switchDIM. The wiring of the PUSH function and switchDIM is not exchangeable.

### I-Set

The I-Set function allows the limitation of the upper dimming level. For the exact resistor value and dimming level please refer to the following diagram.

The I-Set function cannot be used with DALI. For limitation of the upper dimming level please use DALI command 42 (store the DTR as MaxLevel).



### Maximum forward voltage



Note:

It's not allowed to connect LED modules with a higher forward voltage than declared, otherwise the converter will be over loaded and the expected nominal life time will be reduced.  
This issue isn't covered by the warranty.

### Maximum loading of automatic circuit breakers

Automatic circuit breaker type	C10	C16	B10	B16	Inrush current	
Installation Ø	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>	I <sub>max</sub>	Pulse
LCAI 055/1400 0010 DALI	31	51	18	30	10A	200 ms

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

Type	THD	3	5	7	9	11
LCAI 055/1400 0010 DALI	12	11	3	1	1	1

### Wiring guidelines

- The 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 (max. 5 m recommended).
- The converter 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.

### Thermic sensor

NTC value	Start operation temperature (3V Req = 26 kΩ)	Total switch-off temperature (2,2V Roff = 15 kΩ)
100K	55 °C	72 °C
150K	65 °C	80 °C
220K	75 °C	90 °C

Component tolerances are not considered.

In DALI operation a failure of the lamp can be communicated by short-circuiting the NTC port or by leaving it open (DALI command: QUERY FAILURE STATUS).

### Storage conditions

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

Storage temperature: 0 °C up to max. +50 °C

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

### Glow wire test according to EN 60598-1

650 °C passed.

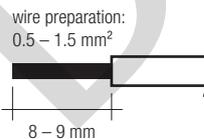


Information about the correct handling of LEDs can be found in the TALEX brochure  
"Installation instructions and guidelines" → [www.tridonic.com](http://www.tridonic.com)

### Wiring type and cross section

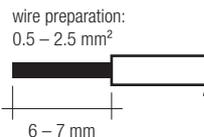
#### Input terminal (PRI) / PUSH / ⊕

Please use only one wire per spring terminal.



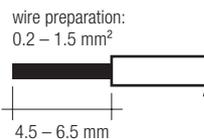
#### Output terminal (SEC)

Please use only one wire per screw terminal.  
Max. torque: 0.4 Nm



#### 1...10 V

Please use only one wire per screw terminal.  
Max. torque: 0.4 Nm



### Connection

#### SYNC

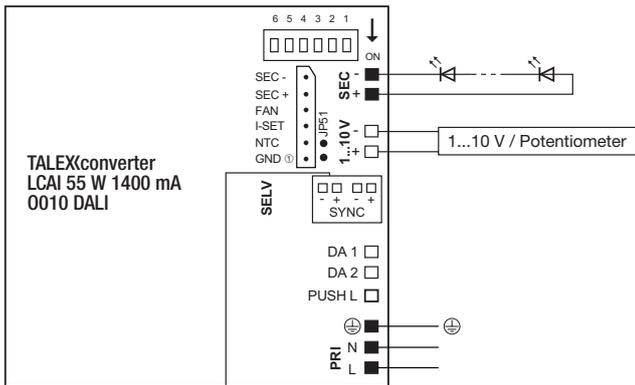
SPOX from Molex

- Plug for cable (art. no. Molex: 0022433020)

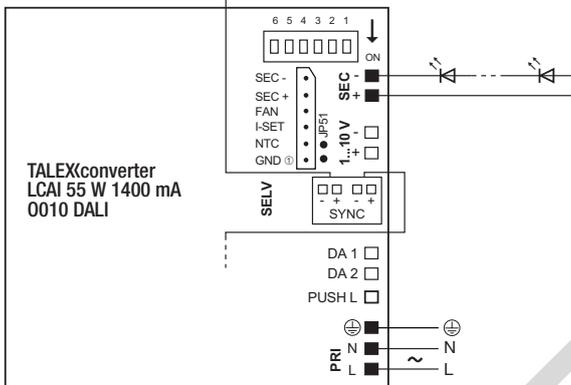
#### SEC- / SEC+ / FAN / I-SET / NTC / GND

- Plug for cable (art. no. Molex: 0022433060)

Wiring diagram 1...10 V or potentiometer

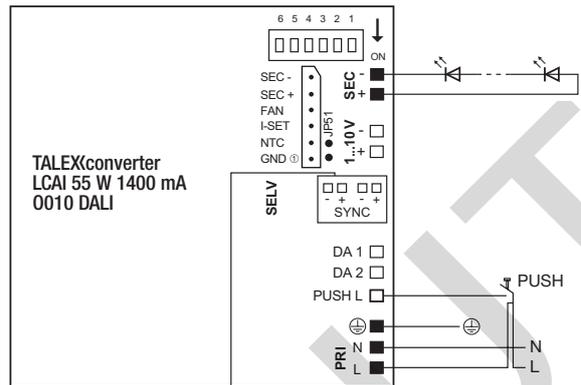


Max. 10 devices in series (1 Master + 9 Slaves)

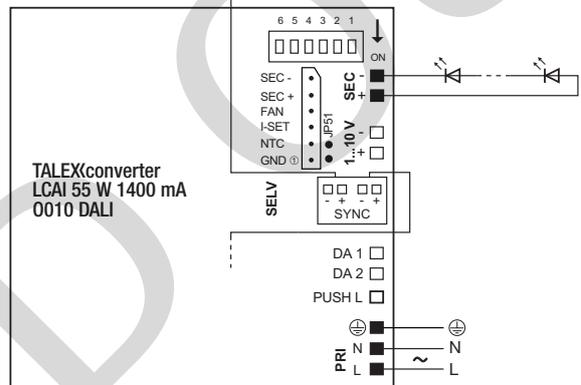


Ⓢ common ground (GND) for FAN, I-SET and NTC

Wiring diagram PUSH function

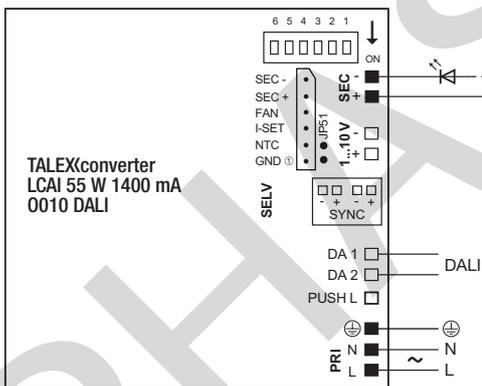


Max. 10 devices in series (1 Master + 9 Slaves)



Ⓢ common ground (GND) for FAN, I-SET and NTC

Wiring diagram DALI



Ⓢ common ground (GND) for FAN, I-SET and NTC

Dip SWITCH position

Output	Position					
	6	5	4	3	2	1
1,050 mA	-	-	-	-	-	-
1,200 mA	ON	-	-	-	-	-
1,400 mA (default)	ON	ON	-	-	-	-
1,600 mA	ON	ON	ON	-	-	-
1,750 mA	ON	ON	ON	ON	-	-
2,100 mA	ON	ON	ON	ON	ON	-
48 V	ON	ON	ON	ON	ON	-

Before use, always check Dip SWITCH setting.

Wiring diagram TALEXmodule SPOT TS310 / TS320 / TS325

For operation with TALEXmodule SPOT TS310 / TS320 / TS325 a capacitor (47  $\mu$ F / 100 V) has to be switched to the output in parallel.  
Dip SWITCH position has to be connected to 48 V.

