TRIDONIC

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TALEXXconverter product manual

# LCAI 2x038/0500 K013 one4all

# LCAI 2x050/0500 K013 one4all

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# chronoSTEP function

## Description

In the outdoor lighting and street lighting sector, it often makes sense to dim the lighting level during night hours in order to save energy. The chronoSTEP function is a tool that makes this easy to do.
The device automatically measures the switch-on and switch-off times of the lighting installation over the past three days. The switch-on and switch-off times are typically the times at which the sun sets and rises. The midpoint of these two reference points is the time referred to as Virtual Midnight. The overall time interval between switch-on and switch-off points is called On Time.

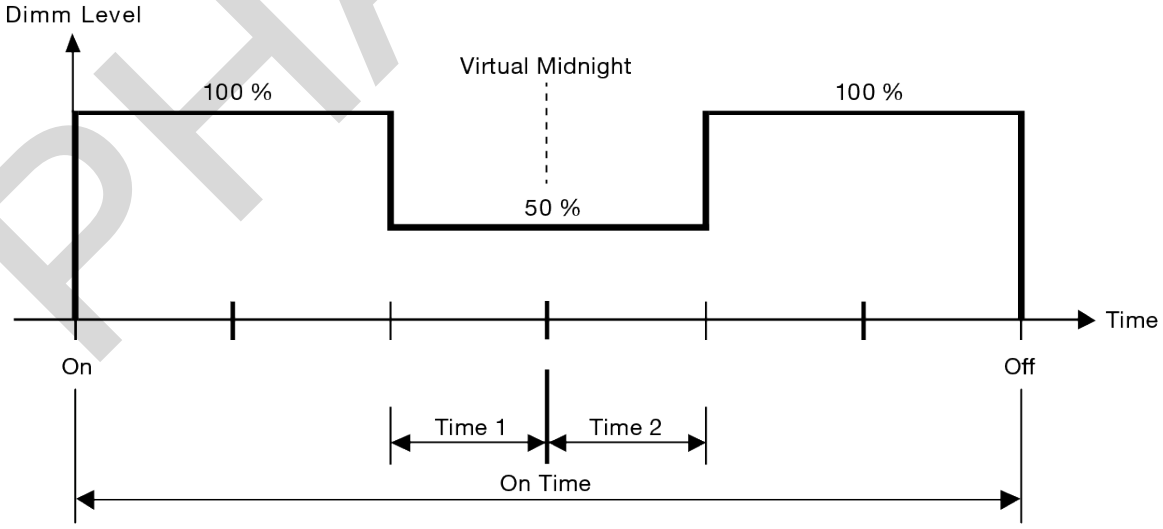
**NOTICE**

When calculating the On-Time, only values between 2 and 24 hours are counted. Values less than 2 hours could indicate a power failure and are therefore not saved. For settings longer than 24 hours, 24 hours is saved as the maximum possible value.

Two different output profiles are used to adjust the function settings. These profiles define which parameters can be adjusted.

## Profiles

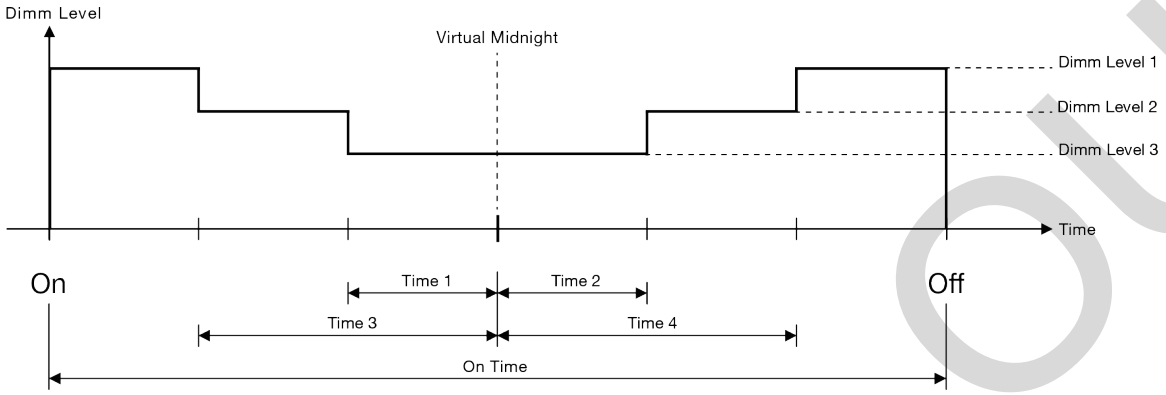
### Profile 1 - Setting Time 1 and Time 2




Two time intervals can be defined using Profile 1 (formerly U6M): Time 1 defines how many hours before Virtual Midnight the lighting is dimmed to a lower level; Time 2 defines how many hours after Virtual Midnight the dimming

level is raised again.
The two dimming levels are preset to fixed percentage values.

### Profile 2 - Setting Time 1, 2, 3, and 4 and Dimming level 1, 2 and 3




Profile 2 can be used to define four time intervals and three dimming levels. The combination of values allows more precise control of the dimming level at different times before and after Virtual Midnight.

## Configuration

Some of the parameters of Profile 1 and Profile 2 can be adjusted using programming modes1 and 2, and some using masterCONFIGURATOR.

The following table provides an overview of the parameters and how they can be modified:

| On-Time | Scene No | Description | Time 1 | Time 2 | Time 3 | Time 4 | Dimming level 1 | Dimming level 2 | Dimming level 3 |
|---|---|---|---|---|---|---|---|---|---|
| 5 s | 0 | Profile 0, chronoSTEP disabled | - | - | - | - | mC (1) | - | - |
| 10 s | 1 | Profile 1, Standard | PM + mC | PM + mC | - | - | mC (1) | - | - |
| 15 s | 2 | Profile 2, Variant 1 | mC | mC | mC | mC | mC (1) | mC | mC |
| 20 s | 3 | Profile 2, Variant 2 | mC | mC | mC | mC | mC (1) | mC | mC |
| 25 s | 4 | Profile 2, Variant 3 | mC | mC | mC | mC | mC (1) | mC | mC |
| 30 s | 5 | Profile 2, Variant 4 | mC | mC | mC | mC | mC (1) | mC | mC |

PM = can be adjusted using programming modes 1 and 2
mC = can be adjusted using masterCONFIGURATOR
(1) Dimming level ("Intensity 1") is grayed out in the masterCONFIGURATOR and can only be changed indirectly. For this the Power On Level must be changed.

## Adjusting Profile 1

The Time 1 and Time 2 parameters can be adjusted using programming mode 1 or using masterCONFIGURATOR (see Reference list).

## Adjusting Profile 2

Adjusting the parameters Time 1, 2, 3 and 4 and Dimming level 1, 2 and 3 involves using a combination of masterCONFIGURATOR and programming mode 2:

- In masterCONFIGURATOR, the parameters are set and are assigned to a scene
- In Programming mode 2 the predefined output currents can be selected

# Optical Balancing function

## Description

The Optical Balancing function lets you split the available output current between two channels. Each channel can be assigned values between 170 and 700 mA or be disabled. The total current for both channels must not exceed 1 Amp maximum (Ch1 + Ch2 <= 1 A). The various combinations of output currents can be used to implement a range of lighting schemes.

## Configuration

The function is configured using a combination of masterCONFIGURATOR and programming mode 2:

- In masterCONFIGURATOR (see Reference list), the current level for each channel is set and assigned to a scene
- Programming mode 2 is used to assign the newly defined scene to Output Profile 2

# Programming modes

## How they work

Two programming modes are provided for configuring the chronoSTEP function and the Optical Balancing function. Both modes have a standard configuration structure, which is divided into Initialisation, Configuration and Confirmation (ACK) blocks. Configuration is performed by applying a predefined sequence of On/Off cycles to the mains input (phase L1), causing the device to run through the blocks. The values themselves are set in the Configuration block. To switch the On/Off cycles, you simply need to connect a suitable switch to the phase of the device.

**⚠ CAUTION!**

To obtain correct configuration results, the length of the various On/Off cycles must be timed precisely as follows:

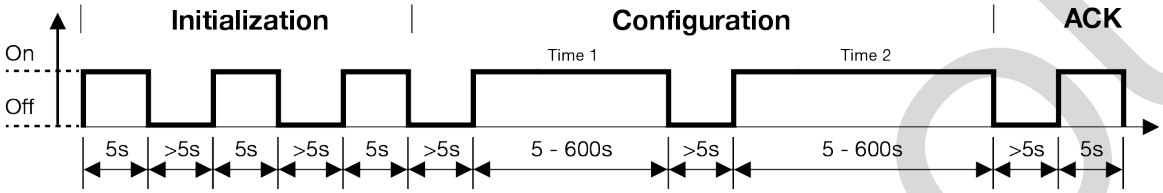
- On cycles: the ideal value for the On cycles of the Initialisation block is 5 seconds. The maximum tolerance is +/- 3 seconds, i.e. values between 2 and 8 seconds are recognised as valid On cycles. Values less than 2 seconds are ignored. Values longer than 8 seconds will reset the internal counter.
- Off cycles: the Off cycles must be at least 5 seconds long. The Off cycle is not recognised for shorter values. Longer Off cycles are possible.
- Special case: the On cycle of the Confirmation block differs in length. It equals 5 seconds for programming mode 1 and 15 seconds for programming mode 2. This is used to distinguish between the two programming modes so that the chosen values can be assigned correctly.

**ⓘ NOTICE**

Changes to settings are not effective immediately but are only apparent after completing the configuration.

# Programming

## Programming mode 1

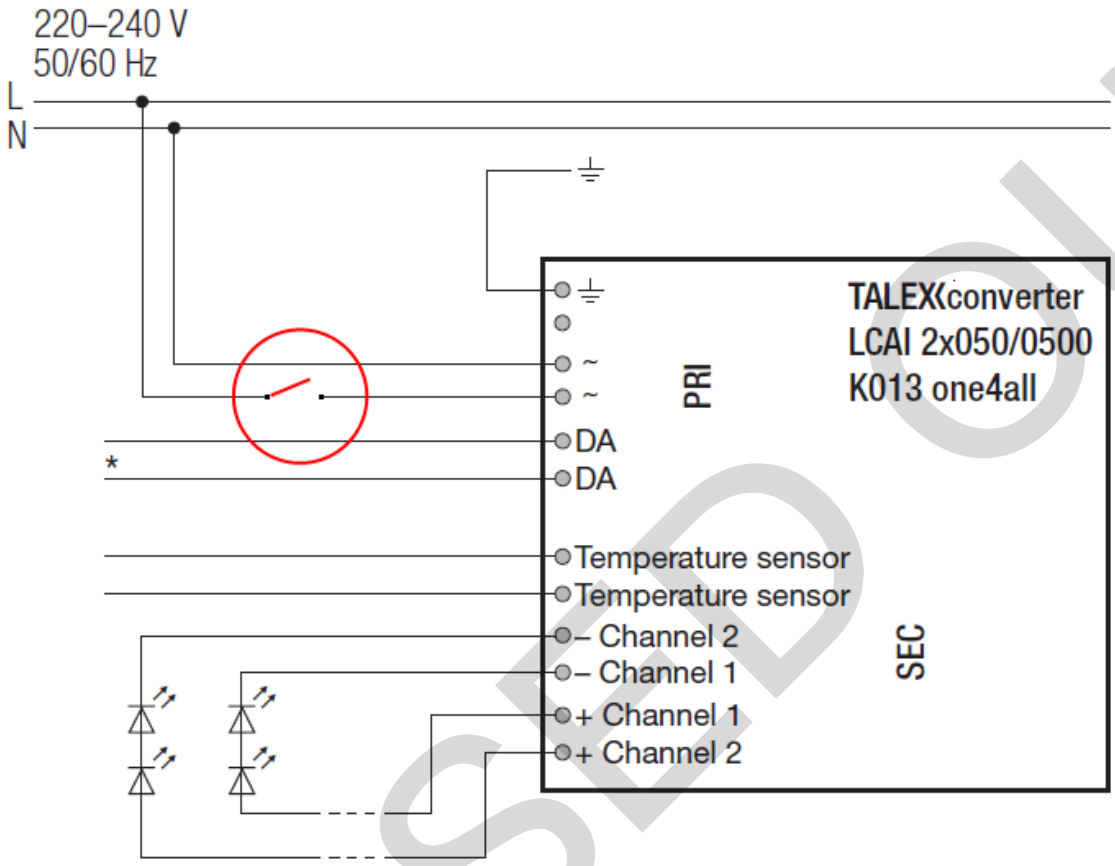



Programming mode 1 is used for setting the values Time 1 and Time 2 for Profile 1 of the chronoSTEP function.
The values are defined by the length of the relevant On cycles in the Configuration block.
1 second for the On period equates to 1 minute for Time 1 or Time 2. The values are rounded to 5 minutes.

**⚠ CAUTION!**

When making the settings for Time 1 or Time 2, if the On period exceeds the maximum length of 600 seconds (equivalent to 600 minutes or 10 hours), the device terminates the configuration and switches into normal operating mode.

## Requirement




- Suitable switch connected to phase to switch the device On/Off.

## Block 1: Initialisation

- Switch device on and off again 3 times in succession (On period: 5 s; Off period: > 5 s)
  → device is ready for setting Time 1 and Time 2

## Block 2: Configuration

### Setting Time 1

- Switch device on (On period: 5-600 s)
  → device sets Time 1 on the basis of the length of the On period:
  An On period of 1 second equates to 1 minute for Time 1
- Switch device off again (Off period: > 5 s)
  → device is ready for setting Time 2

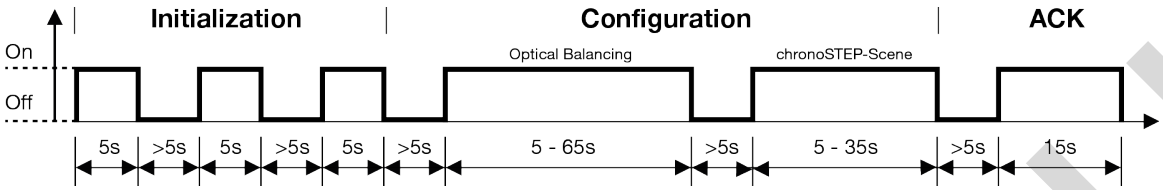
### Setting Time 2

- Switch device on (On period: 5-600 s)
  → device sets Time 2 on the basis of the length of the On period:
  An On period of 1 second equates to 1 minute for Time 2
- Switch device off again (Off period: > 5 s)
  → device is ready for confirmation of configuration

## Block 3: Confirmation

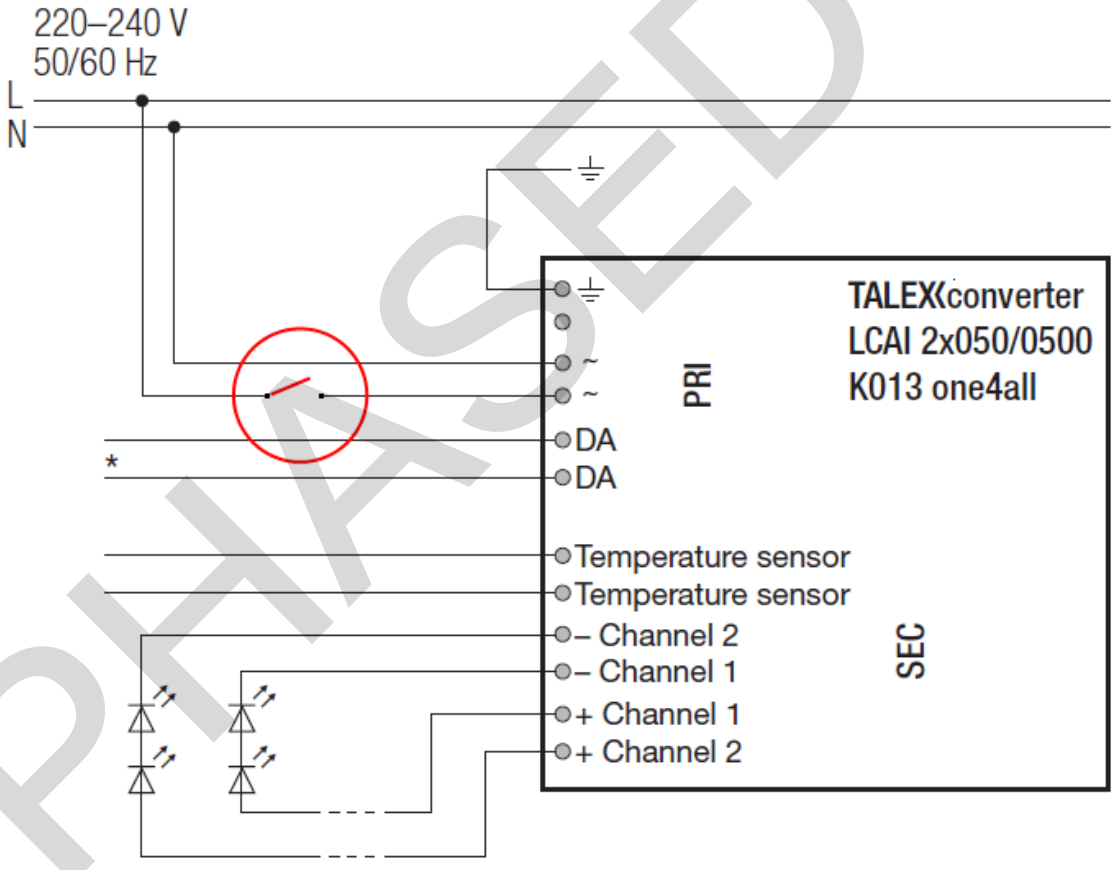
- Switch device on (On period: 5 s) and switch off again
  → device closes the configuration

# Programming mode 2




Programming mode 2 is used for selecting preset values for the Optical Balancing function and for selecting a scene from the chronoSTEP function. Which preset value or scene is selected is determined by the length of the relevant On cycle in the Configuration block. This is done by mapping the length of the On cycle onto a scale of 13 presets (for the Optical Balancing function) or a scale of 6 scenes (for the chronoSTEP function).

## Requirement




- Suitable switch connected to phase to switch the device On/Off

## Block 1: Initialisation

- Switch device on and off again 3 times in succession (On period: 5 s; Off period: > 5 s)
  → device is ready for setting the optical balance and the required scene

## Block 2: Configuration

### Setting the Optical Balancing

**HINWEIS**

Setting the Optical Balancing with Programming Mode 2 is only possible if both outputs are active. In case one of the two outputs was deactivated via the masterCONFIGURATOR Programming Mode 2 doesn't have any influence on the setting.

- In order to set the Optical Balancing via Programming Mode 2 both outputs must first be activated again in the masterCONFIGURATOR

- Switch device on (On period: 5-65 s)
  → device defines the adjustable output current on the basis of the length of the On period.
  In this case, the length of the On period is mapped onto a scale of 13 presets

The following table provides an overview of the preset values for the Optical Balancing function:

| On period | Scene No | Output current, channel 1 | Output current, channel 2 |
|---|---|---|---|
| 5 s | 1 | 300 mA | 700 mA |
| 10 s | 2 | 333 mA | 667 mA |
| 15 s | 3 | 367 mA | 633 mA |
| 20 s | 4 | 400 mA | 600 mA |
| 25 s | 5 | 433 mA | 567 mA |
| 30 s | 6 | 467 mA | 533 mA |
| 35 s | 7 | 500 mA | 500 mA |
| 40 s | 8 | 533 mA | 467 mA |
| 45 s | 9 | 567 mA | 433 mA |
| 50 s | 10 | 600 mA | 400 mA |
| 55 s | 11 | 633 mA | 367 mA |

| | | | |
|---|---|---|---|
| 60 s | 12 | 667 mA | 333 mA |
| 65 s | 13 | 700 mA | 300 mA |

- Switch device off again (Off period: > 5 s)
  → device is ready for selecting a scene

### Selecting a chronoSTEP scene

- Switch device on (On period: 5-35 s)
  → device sets the selected chronoSTEP scene on the basis of the length of the On period:
  In this case, the length of the On period is mapped onto a scale of 6 chronoSTEP scenes

The following table provides an overview of the preset values for the various chronoSTEP scenes:

| On-Time | Scene No | Description | Time 1 | Time 2 | Time 3 | Time 4 | Dimming level 1 | Dimming level 2 | Dimming level 3 |
|---|---|---|---|---|---|---|---|---|---|
| 5 s | 0 | Normal operation: chronoSTEP disabled | - | - | - | - | 100% | - | - |
| 10 s | 1 | Profile 1 | 2 hr | 5 hr | - | - | 100% | - | 50% |
| 15 s | 2 | Profile 2, Option 1 | 0 hr | 6 hr | - | - | 100% | - | 75% |
| 20 s | 3 | Profile 2, Option 2 | 2 hr | 6 hr | - | - | 100% | - | 66% |
| 25 s | 4 | Profile 2, Option 3 | 4 hr | 6 hr | - | - | 100% | - | 50% |
| 30 s | 5 | Profile 2, Option 4 | 1 hr | 1 hr | 2 hr | 2 hr | 100% | 75% | 50% |

- Switch device off again (Off period: > 5 s)
  → device is ready for confirmation of configuration

## Block 3: Confirmation

- Switch device on (On period: 15 s) and switch off again
  → device closes the configuration

# Reference list

## Related documents

- DALI manual: http://www.tridonic.com/com/en/download/technical/DALI-manual_en.pdf
- masterCONFIGURATOR documentation: http://www.tridonic.com/com/en/download/Manual_masterConfigurator_en.pdf
- Data sheets: http://www.tridonic.com/com/en/data-sheets.asp
- Declarations of conformity: http://www.tridonic.com/com/en/declarations-of-conformity.asp
- Certificates: http://www.tridonic.com/com/en/certificates.asp
- ENEC certificate: http://www.tridonic.com/com/en/download/certificates/ENEC_IK-1549_LCAI_K013_one4all.pdf

## Downloads

- Tridonic software: http://www.tridonic.com/com/en/software.asp
- Download masterCONFIGURATOR: http://www.tridonic.com/com/en/software-masterconfigurator.asp