
user guide

dimmer

PHASE-CUT-CV-UL

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- TECHNICAL FEATURES
 - DEVICE POWER SUPPLY AND CONNECTION TO THE LED MODULE
 - MODES OF OPERATION
 - 100KOHM LINEAR POTENTIOMETER MODE
 - 0-10V/1-10V PASSIVE (NON-ISOLATED) MODE
 - DALI2 MODE
 - PUSH MODE
 - PHASE CUT MODE
 - PHASE CUT MODE WITH SINGLE OUTPUT POLE DIMMER (PHASE OR NEUTRAL)
 - CHANGE PARAMETERS/MODE
 - PARAMETER CONFIGURATION
 - COMPATIBILITY LIST
 - WIRING COMPATIBLE PRODUCTS

PHASE-CUT-CV-UL

PHASE CUT input PWM constant voltage output

TECHNICAL FEATURES

- Power interface conductor diameter 14÷30 AWG (0.05÷2.08 mm²)
- Conductor diameter control interface 15÷30 AWG (0.05÷1.65 mm²)
- Control inputs: Phase cut (IGBT, TRIAC, MOSFET), isolated push button, DALI2, 100K linear potentiometer, 0-10V passive (non-isolated), 1-10V passive (non-isolated)
- Dimmer with active output short circuit protection*
- Synchronization outputs: PWM x1
- PWM frequency: 390 Hz
- UL Printed Circuit Board
- Protection class: IP20
- Protection against: reverse polarity, open circuit, voltage peaks, overtemperature

SAFETY WARNINGS

- A SELV power supply must be used to power the device in order to maintain the level of electrical safety required
- All connections must be made with de-energized equipment and carried out by specialized personnel
- Use only in dry environments
- Protection against accidental contact with live parts is provided by the lamp casing
- To remove the cables, unscrew the terminal screws
- The section of the power supply input conductors (DC IN), load output (OUT CV) and push/ DALI interface (DALI/P1 DALI/P2) is 14÷26 AWG (1.0 mm² IEC STANDARD)
- The conductor section of the DIMM dimming interface (D+ D-) is 14÷30 AWG (1.0 mm² IEC STANDARD)
- The device must be used in conjunction with a separately approved LED control gear as per IEC/EN 61347-2-13 specifications, SELV output, constant voltage, short-circuit proof
- Tc point max: 95°C
- Tc is positioned on the terminal screw corresponding to the Tc indication (see figure A)
- Note on 0-10V(1-10V): this control circuit is not isolated, use only an isolated 0-10V(1-10V) signal generator
- Isolated inputs, non-isolated outputs
- The DIMM interface circuit (D+ D-) is not isolated
- **WARNING!** More than one power source is present on the device



40x80x24,45 mm
plus KIT-COVER 40x100x24,45 mm

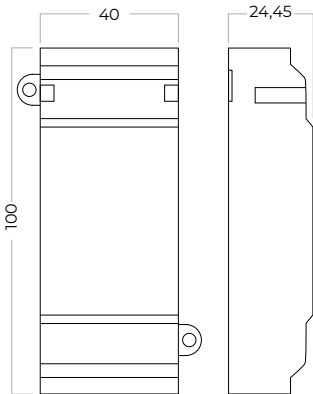
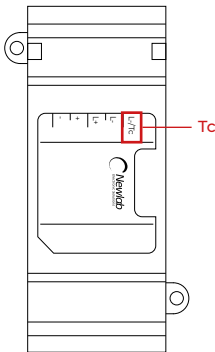


figure A



From firmware version 5.5 onwards, short-circuit protection is disabled.
To enable it, you need to purchase a SETUPPER interface, sold separately. (see pag. 8).



CODE	POWER RANGE	CURRENT	POWER	OUTPUT	INPUT	LOAD TYPE	PART NUMBER
PHASE-CUT-CV-UL	8÷53 V DC	12A	576W a 48V 288W a 24V 144W a 12V	1	PHASE CUT DALI2 / 0-10V / 1-10V / POT / PUSH	monochrome	L400MA04TIA20-UL



Maintenance: The appliance is maintenance-free.
Use a dry cloth to clean it.
The use of solvents or other aggressive substances should be avoided at all costs.



Disposal: at the end of its useful life, the product described in this data sheet is classified as waste from electronic equipment according to the European Directive 2012/19/EU (WEEE recast), implemented in Italy with Legislative Decree no. 49 of 14 March 2014, and cannot be disposed of as unsorted municipal solid waste. **Important:** Improper disposal of the product may cause serious harm to the environment and human health. For proper disposal, inquire about the collection and treatment methods provided by the local authorities.

Device power supply and connection to the LED module

PHASE-CUT-CV-UL dimmers must be powered according to the polarity indicated in **FIG. 1** through the DC IN terminals (+ and -).

If the power supply polarity is reversed, the device does not suffer any damage.

The LED (PWR LED) on the board signals the presence of power. The LED (DIM LED) indicates the dimming status of the output.

The connection of the LED load must be made using the OUT terminals (L+ and L-).

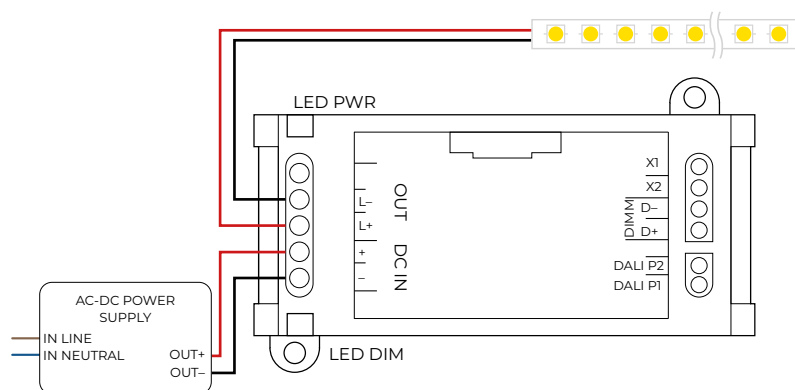


FIG. 1 - PHASE-CUT-CV-UL power supply and LED connection diagram

Mode of operation

100KOHM linear potentiometer mode

In order to activate this control/operation mode, simply connect a 100Kohm linear potentiometer between the D+ and D- inputs and disconnect the remaining inputs. By default the dimming curve follows a logarithmic* trend proportional to the resistance value set by the potentiometer.

A resistance value of less than 5 Kohm is interpreted as load off. The maximum brightness value is reached when the value of 95 Kohm is exceeded.

If the potentiometer is disconnected, the dimmer sets the output to zero.

When first starting up in this mode, it may be necessary to set the input to a value higher than 50% (55K or higher on input D- D+) in order to configure the dimmer in potentiometer mode.

*This setting can be configured via the interface code SETUPPER

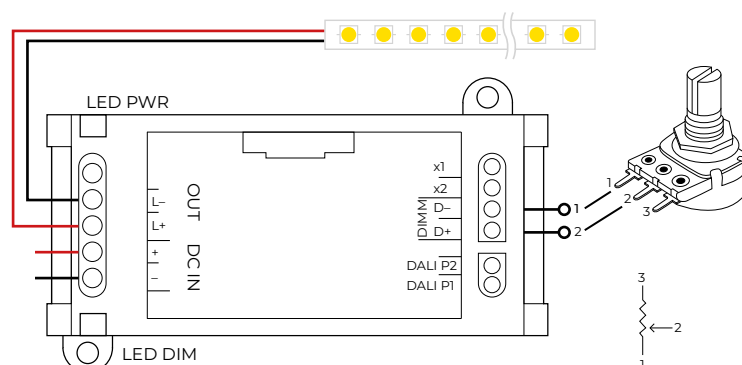


FIG. 2 - PHASE-CUT-CV-UL potentiometer connection

Mode of operation

0-10V/1-10V passive (non-isolated) mode

To activate this control/operating mode, simply connect the active 0-10V/1-10V control signal between the D+ and D- inputs (taking care to observe the correct polarity) and disconnect the remaining control signals. The maximum current absorbed by the dimmer from the 0-10V interface is 0.1 mA. By default, the dimming curve follows a linear trend proportional to the control voltage. A voltage value lower than 1V is interpreted as the load being off.

In the event of a 0-10V/1-10V signal disconnection, the dimmer sets the output to the maximum level Compliant IEC/EN60929. When starting up in this mode for the first time, it may be necessary to set the input to a value higher than 50% (5V or higher on input D- D+) in order to configure the dimmer in 0-10V/1-10V mode.

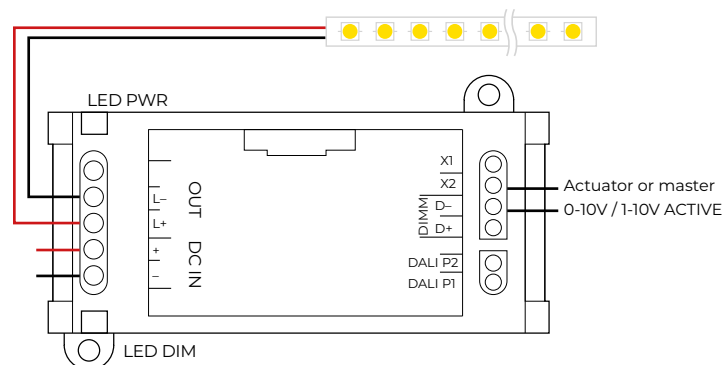


FIG. 3 - PHASE-CUT-CV-UL 0-10V connection

Mode of operation

DALI2 mode

To activate this control/operating mode, simply connect the active 0-10V/1-10V control signal between the D+ and D- inputs. When the dimmer receives its first correctly formatted DALI packet, it configures itself in DALI mode. Once configured in DALI mode and disconnected from the DALI bus, the dimmer switches to the POWER ON LEVEL status set via the DALI bus.

The maximum current absorbed by the DALI bus is approximately 2mA.

The device has active short-circuit protection with feedback on the DALI bus*.

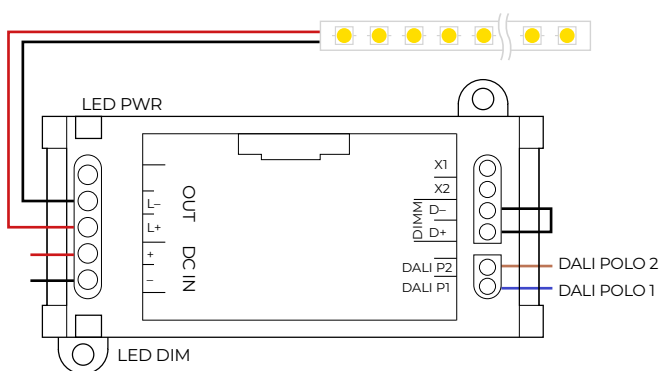


FIG. 4 - PHASE-CUT-CV-UL DALI connection

Standard commands implemented

DIRECT ARC POWER
OFF
UP
DOWN
STEP UP
STEP DOWN
RECALL MAX LEVEL
RECALL MIN LEVEL
STEP DOWN AND OFF
ON AND STEP UP
GO TO SCENE (0-15)
RESET

STORE ACTUAL LEVEL IN THE DTR
STORE THE DTR AS MAX LEVEL
STORE THE DTR AS MIN LEVEL
STORE THE DTR AS SYSTEM FAILURE LEVEL
STORE THE DTR AS POWER ON LEVEL
STORE THE DTR AS FADE TIME
STORE THE DTR AS FADE RATE
STORE THE DTR AS SCENE (0-15)
REMOVE FROM SCENE (0-15)
ADD TO GROUP (0-15)
REMOVE FROM GROUP (0-15)
STORE DTR AS SHORT ADDRESS

QUERY STATUS
QUERY BALLAST
QUERY LAMP POWER ON
QUERY LIMIT ERROR
QUERY RESET STATE
QUERY MISSING SHORT ADDRESS
QUERY VERSION NUMBER
QUERY DEVICE TYPE
QUERY PHYSICAL MINIMUM LEVEL
QUERY POWER FAILURE
QUERY CONTENT DTR1
QUERY CONTENT DTR2

QUERY ACTUAL LEVEL
QUERY MAX LEVEL
QUERY MIN LEVEL
QUERY POWER ON LEVEL
QUERY SYSTEM FAILURE LEVEL
QUERY FADE TIME/FADE RATE
QUERY SCENE LEVEL (0-15)
QUERY GROUPS (0-7)
QUERY GROUPS (8-15)
QUERY RANDOM ADDRESS H
QUERY RANDOM ADDRESS M
QUERY RANDOM ADDRESS L

Change parameters/mode Setupper

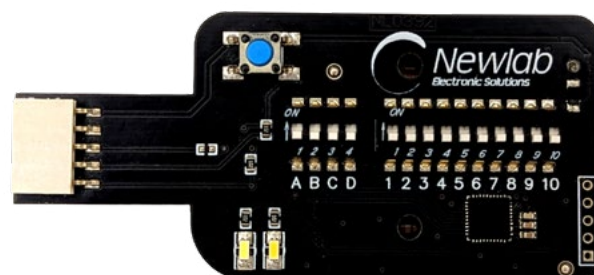
Newlab dimmers can be configured in different operating modes or with different functional parameters. The operating mode, as well as other operating parameters (e.g. DMX-512 address, fade, etc.), must be programmed using the optional **SETUPPER** programmer.

The following pages indicate the modes supported by the dimmer and any parameters that can be set.

The **SETUPPER** parameter programmer is a programming interface, available separately, which allows parameters and configurations to be transferred to Newlab dimmers. The **SETUPPER** is equipped with two blocks of Dip Switches. The first block, marked with the letters A, B, C and D, identifies the 'Parameter' command. The second block, marked with the numbers 1 to 10, identifies the parameter value. The onboard button is used to start the programming procedure.

The POWER LED indicates that the **SETUPPER** is correctly powered; The CHECK LED confirms that the command/parameter has been programmed.

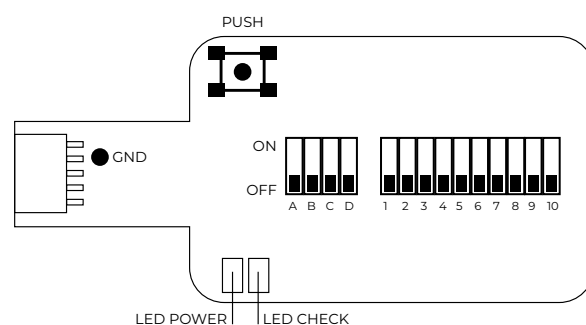
The **SETUPPER** can be powered by **AAA batteries** or by a **powered dimmer** (it is recommended to remove the batteries when using a powered dimmer)



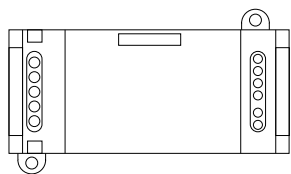
SETTING PARAMETERS/COMMANDS PROCEDURE

- 1) Set the SETUPPER dip switches as indicated in the product manual.
- 2) Insert the SETUPPER into the 5-pin strip on the product, observing the polarity.
- 3) If powered by a DIMMER (without AAA batteries), check that the **POWER LED** is on.
- 4) Press and hold the PUSH button:
 - if powered by a dimmer, wait until the CHECK LED lights up.
 Both LEDs lit confirm that the parameter has been programmed.
 - if powered by battery, the POWER LED lights up and after a few seconds the CHECK LED also lights up.
 Both LEDs lit confirm that the parameter has been programmed.
- 5) Turn the dimmer off and on again.

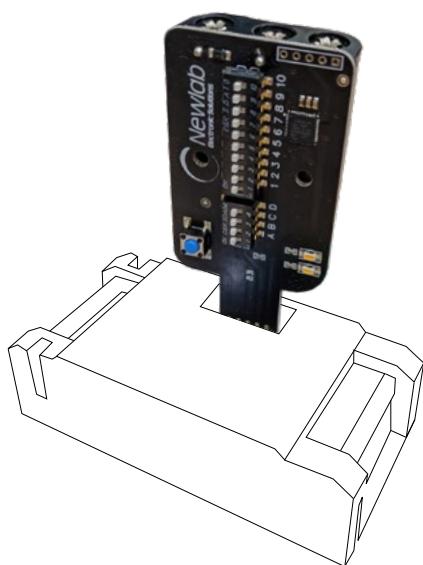
Repeat the steps described above for each parameter you want to set on the dimmer.



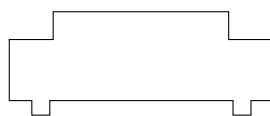
DIMMER



- 1) Use a screwdriver to remove the programming cover located on the top of the box.
- 2) Insert the programmer.
- 3) Program the mode or parameters.
- 4) Remove the SETUPPER and close the cover.

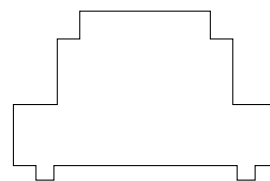


DIMMER

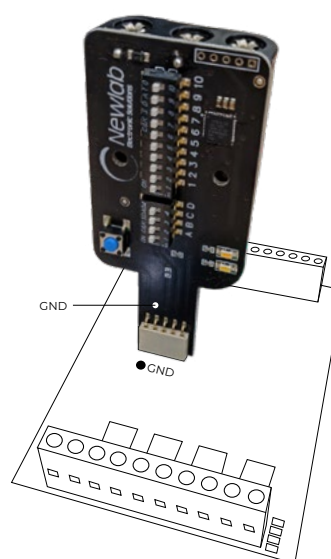


- 1) Use a screwdriver to remove the bottom base of the box.
- 2) Remove the card from the box.
- 3) Insert the SETUPPER into the 5-pin strip on the dimmer, observing the polarity.
- 4) Program the mode or parameters.
- 5) Remove the SETUPPER, reinsert the card into the box and close it, ensuring that the box is rotated in the correct direction and that the label is correctly positioned.

DIMMER -DIN



- 1) Use a screwdriver to remove the top panel.
- 2) Insert the SETUPPER into the 5-pin strip on the dimmer, observing the polarity.
- 3) Program the mode or parameters.
- 4) Remove the SETUPPER and close the top panel, ensuring that it is rotated in the correct direction and that the label is correctly positioned.



Note: Be sure that the two GND points are on the same side.

Parameter configuration

Click on the desired configuration to show the programmer image

RESET														
CONFIGURATION	A	B	C	D	1	2	3	4	5	6	7	8	9	10
RESET	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

DIMMING CURVE														
CONFIGURATION	A	B	C	D	1	2	3	4	5	6	7	8	9	10
LOGARITMICA	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
LINEARE	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

FADE														
CONFIGURATION	A	B	C	D	1	2	3	4	5	6	7	8	9	10
FADE OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
FADE ON	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

DIGITAL SHORT CIRCUIT PROTECTION														
CONFIGURATION	A	B	C	D	1	2	3	4	5	6	7	8	9	10
OFF	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
ON	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

Compatibility list

Phase cut

BRAND	DEVICE
BTICINO	K4411C 4411C L4411C N4411C NT4411C L4411N* N4411N* NT4411N*
VIMAR	ARKÉ 19595 PLANA 14135* PLANA 14135.1 PLANA 14136.1 PLANA 14139 PLANA 14595 EIKON 20595.0 LINEA 30805
NEULAB	PUSH-230V-AI DALI-230V DALI-230V-500W DALI-230V-1KW
TECNEL	TE7636 TE7637
FINDER	TYPE 15,91
RELCO	RTMOMEGA A RN 0865*
DALCNET	DAC-230-1CH-DALI DAC230-1CH
ARENALUCI	LC1019ZGSAC-HP
EKINEX	EK-GD1-TP-4-HV EK-GD1-TP-4-HV-N EK-GD2-TP-1-HV EK-GD2-1-HV EK-GD2-DL-1-HV EK-GD1-DL-4-HV
SUNRICHER	SR-ZG9101SAC-HP SR-2303SAC-HP
*(additional load required at the output of the phase cutting dimmer)	

Wiring compatible products

PHASE CUT

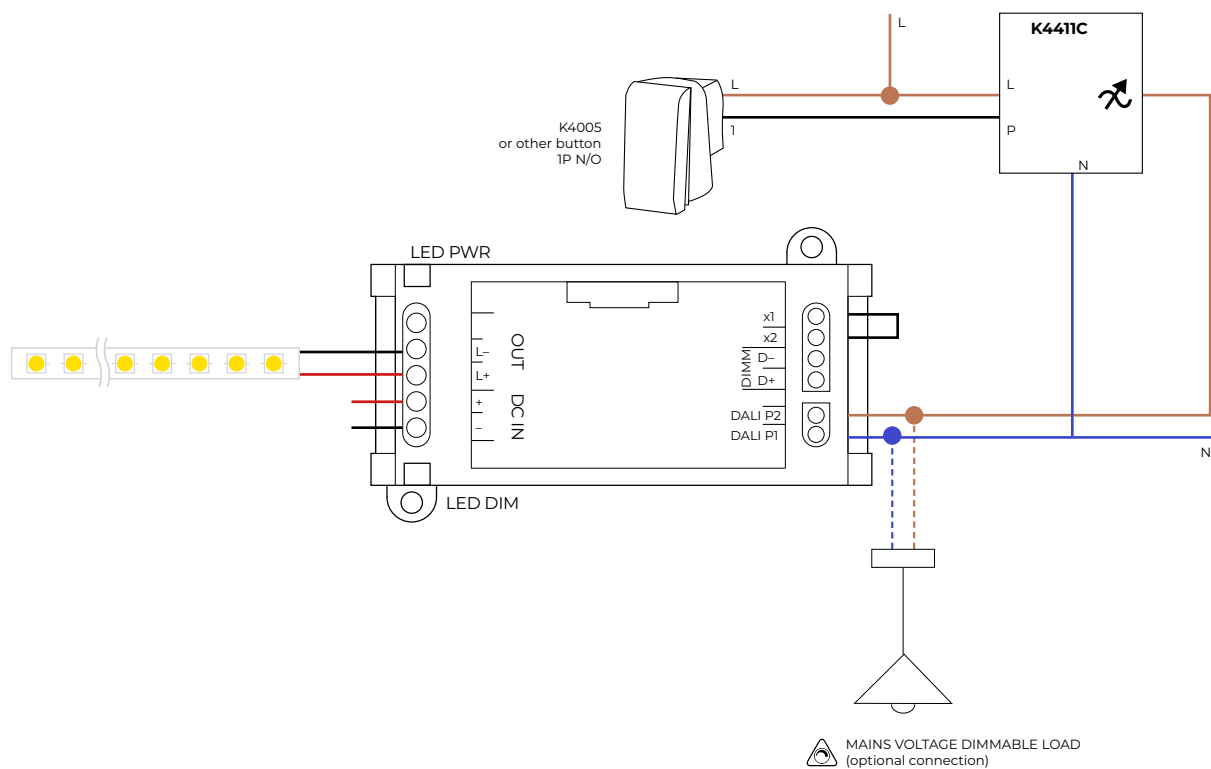


FIG. 8 - PHASE CUT connection 1 pole phase cut + **BTICINO K4411C**

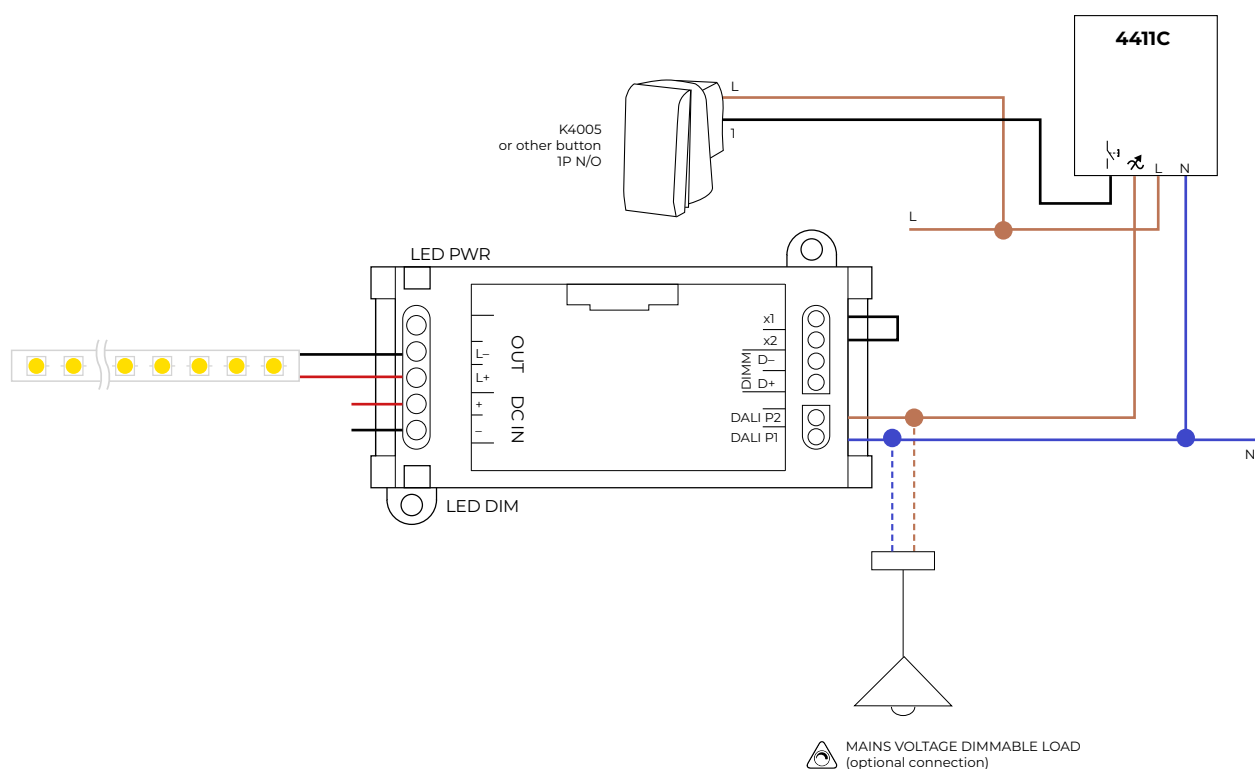


FIG. 9 - PHASE CUT connection 1 pole phase cut + **BTICINO 4411C**

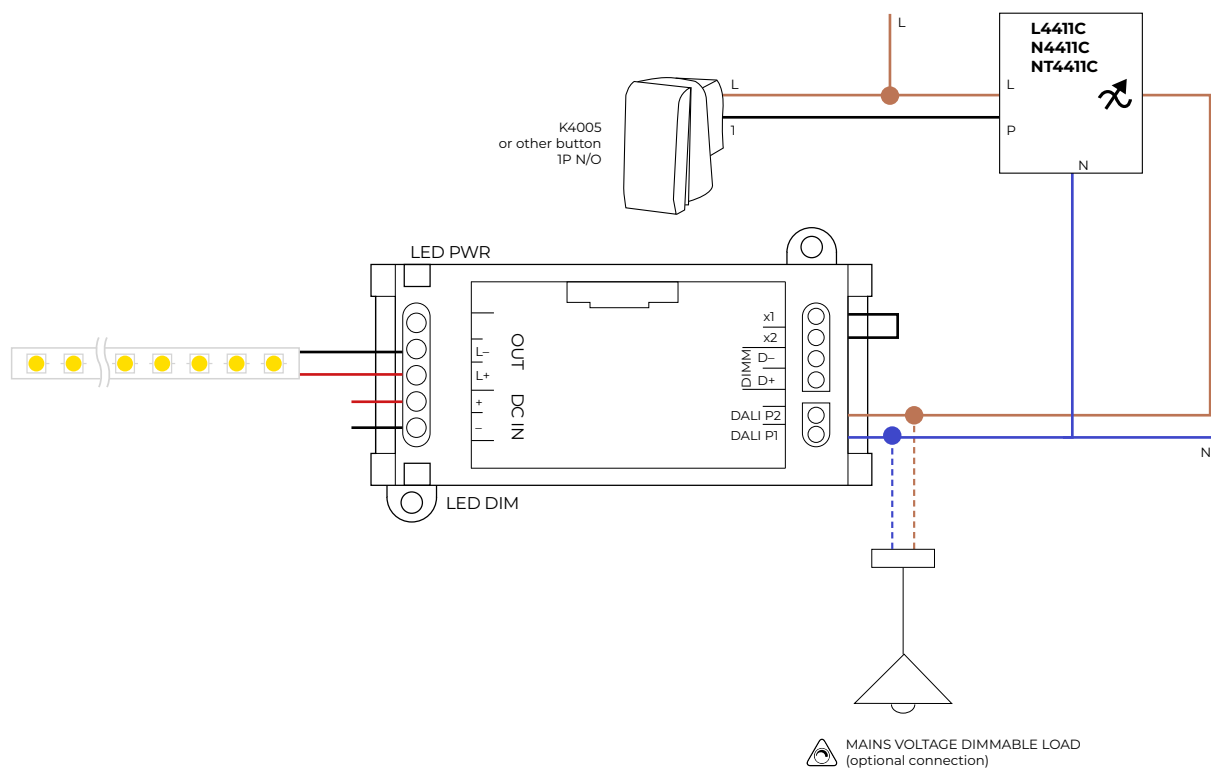


FIG. 10 - PHASE CUT connection 1 pole phase cut + BTICINO L4411C / N4411C / NT4411C

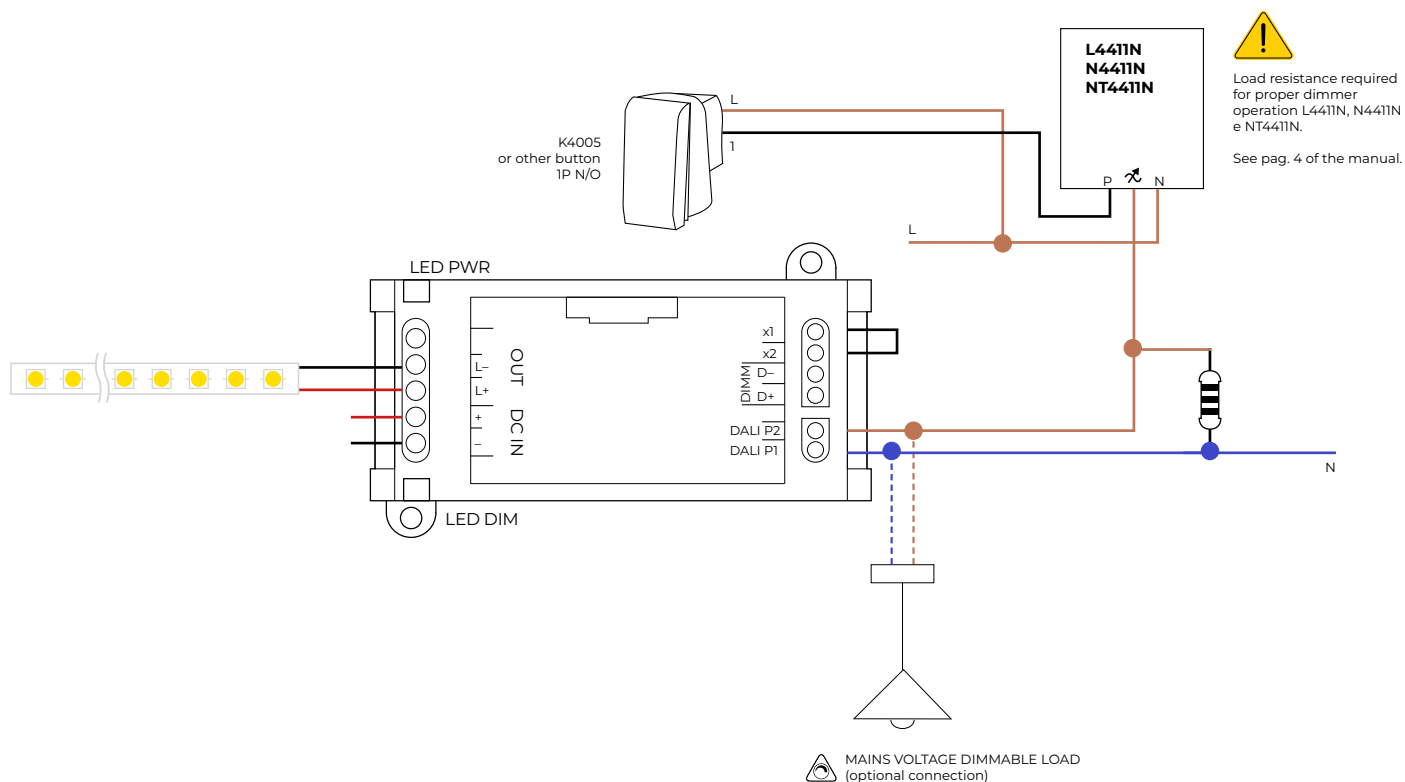


FIG. 11 - PHASE CUT connection 1 pole phase cut + BTICINO L4411N / N4411N / NT4411N