TECHNICAL

Information

JISO

ILUMINACION

SPAIN

ERROR FOUND IN THE LED LUMINARY DRIVER

In the event of error of any products supplied by **JISO ILUMINACIÓN**, SL. we urge you, before removing the installation, to check if the problem lies within the **LED LUMINARY** or in the **DRIVER**, by following the instructions you can find in the frequently asked questions **(FAQ)** section. This is because, if the problem is located in the driver, it can be easily resolved by ordering said driver from its product store.

To do this, you must simply look for its reference number in the following chart, according to the **LED luminary** reference number (e.g. 50322, 50220, etc.) and its associated driver brand (e.g. JISO, ELT, TCI, etc.), and then contact its product store to order a replacement.

For example:

- **LED Luminary reference number 50308-2983-90** would have an associated JISO driver (non-adjustable standard) with Ref Nº 3008-29300.
- **LED Luminary reference number 50308-2283-90** would have an associated ELT driver (non-adjustable standard) with Ref Nº 3010-22350.
- **LED Luminary reference number 50308-5283-90** would have an associated ELT driver (adjustable through edge phase cut) with Ref Nº 3010-32350.
- **LED Luminary reference number 50308-3383-90** would have an associated TCI driver (1-10V adjustable and PUSH) with Ref Nº 3019-33MmA.

MODELO EMPOTRABLES	JISO (-29)	ELT (-22)	TCI (-23)	ELT TRAILING (-52)	TCI 1-10V & PUSH (-33)	TCI DALI (-43)
55011	3010-29280	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
55027	3026-29700	3025-22700	N/A	3025-32700	3030-33MmA	3030-43MmA
55035	3038-29900	3042-22MmA	N/A	N/A	3025-43350	3025-43350
55055	3052-29140	N/A	3056-23MmA	N/A	3055-33MmA	3055-43MmA
50110	3010-29280	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
50126	3026-29700	3025-22700	N/A	3025-32700	3030-33MmA	3030-43MmA
50138	3038-29900	3042-22MmA	N/A	N/A	3025-43350	3025-43350
50152	3052-29140	N/A	3056-23MmA	N/A	3055-33MmA	3055-43MmA
36536	3036-28900	N/A	N/A	N/A	N/A	N/A
36548	3048-28120	N/A	N/A	N/A	N/A	N/A
51010	3010-28350	3025-22350	N/A	N/A	3019-33MmA	3019-43MmA
51110	3010-28350	3025-22350	N/A	N/A	3019-33MmA	3019-43MmA
52010	3012-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
54207	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
54010	3012-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
54015	3018-29300	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
54025	3025-29300	3025-22300	N/A	N/A	3030-33MmA	3030-43MmA
54035	3036-29830	3042-22MmA	N/A	N/A	3025-43350	3025-43350
55108	3007-28300	3010-22350	N/A	N/A	N/A	N/A
55115	3015-28300	3025-22300	N/A	N/A	N/A	N/A
55122	3030-28700	3025-22700	N/A	N/A	N/A	N/A
50608	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
50615	3018-29300	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
50625	3025-29700	3025-22700	N/A	N/A	3030-33MmA	3030-43MmA
50708	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
50715	3019-29320	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
50725	3025-29600	3025-22600	N/A	N/A	3030-33MmA	3030-43MmA
54906	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
54912	3012-29300	3025-22300	N/A	3011-32300	3019-33MmA	3019-43MmA
54918	3025-29300	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA
54924	3024-29320	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA
54930	3036-29600	N/A	N/A	N/A	3030-33MmA	3030-43MmA
54940	N/A	3042-22MmA	N/A	N/A	3025-43350	3025-43350
51908	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
51915	3018-29300	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
51922	3024-29320	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA
51708	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
51715	3018-29300	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
51722	3024-29540	3025-22600	N/A	N/A	3030-33MmA	3030-43MmA
31936	3036-28901	3042-22MmA	N/A	N/A	3025-43350	3025-43350
31948	3048-28121	N/A	3056-23MmA	N/A	3055-33MmA	3055-43MmA
69314	N/A	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
69325	N/A	3025-22600	N/A	N/A	3030-33MmA	3030-43MmA
69414	N/A	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
69425	N/A	3025-22600	N/A	N/A	3030-33MmA	3030-43MmA
69628	N/A	2 x 3025-22300	N/A	2 x 3016-32350	2 x 3019-33MmA	2 x 3019-43MmA

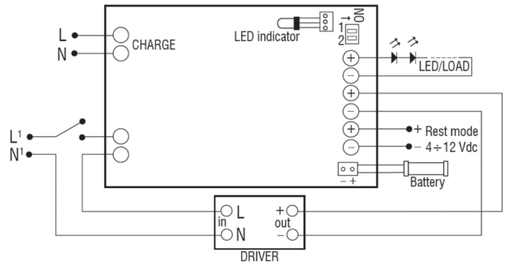
MODELO EMPOTRABLES	JISO (-29)	ELT (-22)	TCI (-23)	ELT TRAILING (-52)	TCI 1-10V & PUSH (-33)	TCI DALI (-43)
69650	N/A	2 x 3025-22600	N/A	N/A	2 x 3030-33MmA	2 x 3030-43MmA
59314	N/A	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
59325	N/A	3025-22600	N/A	N/A	3030-33MmA	3030-43MmA
59414	N/A	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
59425	N/A	3025-22600	N/A	N/A	3030-33MmA	3030-43MmA
59528	N/A	2 x 3025-22300	N/A	2 x 3016-32350	2 x 3019-33MmA	2 x 3019-43MmA
59628	N/A	2 x 3025-22300	N/A	2 x 3016-32350	2 x 3019-33MmA	2 x 3019-43MmA
59650	N/A	2 x 3025-22600	N/A	N/A	2 x 3030-33MmA	2 x 3030-43MmA
50915	3018-29300	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
50925	3024-29320	3025-22300	N/A	N/A	3030-33MmA	3030-43MmA
50930	3036-29850	3042-22MmA	N/A	N/A	3025-43350	3025-43350
51435	3036-29850	3042-22MmA	N/A	N/A	3025-43350	3025-43350
20020	Consult	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA
20030	Consult	3042-22MmA	N/A	N/A	3025-43350	3025-43350
*009	N/A	N/A	N/A	N/A	N/A	N/A
*002	3003-29300	N/A	N/A	N/A	N/A	N/A
55307	N/A	N/A	N/A	N/A	N/A	N/A
55507	N/A	N/A	N/A	N/A	N/A	N/A
51210	3012-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
54410	3012-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
54415	3018-29300	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
54425	3025-29300	3025-22300	N/A	N/A	3030-33MmA	3030-43MmA
54435	3036-29830	3042-22MmA	N/A	N/A	3025-43350	3025-43350
51507	3008-29450	N/A	N/A	N/A	N/A	>0,9
51510	3012-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
51515	3018-29300	3025-22300	N/A	N/A	3019-33MmA	3019-43MmA
51525	3024-29320	3025-22300	N/A	N/A	3030-33MmA	3030-43MmA
53522	N/A	3042-22MmA	N/A	N/A	3025-43350	3025-43350
53527	N/A	3042-22MmA	N/A	N/A	3025-43350	3025-43350
53530	N/A	3042-22MmA	N/A	N/A	3025-43350	3025-43350
53535	N/A	3042-22MmA	N/A	N/A	3025-43350	3025-43350
53540	N/A	3042-22MmA	N/A	N/A	3025-43350	3025-43350
53545	N/A	N/A	N/A	N/A	3025-43350	3025-43350
53550	N/A	N/A	3056-23MmA	N/A	3055-33MmA	3055-43MmA
54710	3010-29302	N/A	N/A	N/A	N/A	N/A
54717	3017-29302	N/A	N/A	N/A	N/A	N/A
54722	3022-29302	N/A	N/A	N/A	N/A	N/A
54810	3010-29302	N/A	N/A	N/A	N/A	N/A
54817	3017-29302	N/A	N/A	N/A	N/A	N/A
54822	3022-29302	N/A	N/A	N/A	N/A	N/A
55607	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
55630	3037-29300	N/A	N/A	N/A	3030-33MmA	3030-43MmA
55707	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
55730	3037-29300	N/A	N/A	N/A	3030-33MmA	3030-43MmA
50212	3012-29300	3010-22350	N/A	3011-32300	3019-33MmA	3019-43MmA
50220	3020-29320	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA

MODELO EMPOTRABLES	JISO (-29)	ELT (-22)	TCI (-23)	ELT TRAILING (-52)	TCI 1-10V & PUSH (-33)	TCI DALI (-43)
50520	3020-29320	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA
50308	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
50315	3018-29300	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
50322	3024-29320	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA
50330	3036-29300	N/A	N/A	N/A	3030-33MmA	3030-43MmA
50355	3055-29150	N/A	3056-23MmA	N/A	3055-33MmA	3055-43MmA
50408	3008-29300	3010-22350	N/A	3010-32350	3019-33MmA	3019-43MmA
50415	3018-29300	3025-22300	N/A	3016-32350	3019-33MmA	3019-43MmA
50422	3024-29540	3025-22600	N/A	N/A	3030-33MmA	3030-43MmA
31036	3036-29900	3042-22MmA	N/A	N/A	3025-43350	3025-43350
31048	3048-29120	N/A	3056-23MmA	N/A	3055-33MmA	3055-43MmA
31136	3036-29900	3042-22MmA	N/A	N/A	3025-43350	3025-43350
31148	3048-29120	N/A	3056-23MmA	N/A	3055-33MmA	3055-43MmA
31160	3060-28150	N/A	3056-23MmA	N/A	3055-33MmA	3055-43MmA
30180	2 x 3037-29300	N/A	N/A	N/A	N/A	N/A

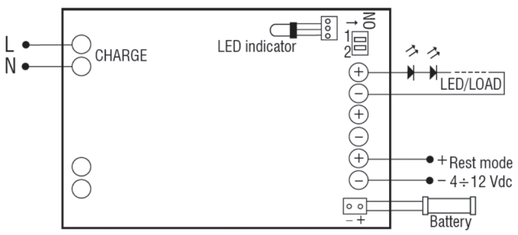
MODELO SUPERFICIE	JISO (-29)	ELT (-22)	TCI (-23)	ELT TRAILING (-52)	TCI 1-10V & PUSH (-33)	TCI DALI (-43)
29312	3012-27300	N/A	N/A	N/A	N/A	N/A
20120	Consult	N/A	N/A	N/A	N/A	N/A
20130	Consult	N/A	N/A	N/A	N/A	N/A
20508	3008-29320	3010-22350	N/A	3010-32350	N/A	N/A
20515	3018-29320	N/A	N/A	N/A	3019-33MmA	3019-43MmA
20522	3024-29300	N/A	N/A	N/A	3030-33MmA	3030-43MmA
20524	3023-29300	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA
20536	3036-29600	N/A	N/A	N/A	3030-33MmA	3030-43MmA
20408	3008-29320	3010-22350	N/A	3010-32350	N/A	N/A
20415	3018-29320	N/A	N/A	N/A	3019-33MmA	3019-43MmA
20422	3024-29300	N/A	N/A	N/A	3030-33MmA	3030-43MmA
20424	3023-29300	3025-22300	N/A	3025-32350	3030-33MmA	3030-43MmA

INSTALLATION OF EMERGENCY KIT ASSOCIEATED TO LED LUMINARIES AND LED STRIPS (REF NO: 2DCLEDK1 Y 2DCLEDK2)

PERMANENT USE (the luminary operates normally with its driver and also under specific conditions when there is a general mains failure)



NON-PERMANENT USE (the luminary is installed without a driver and only works under specific conditions when there is a general mains failure)



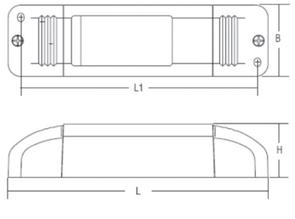
In the frequently asked questions section, you can find information on technical and installation conditions.

IMPORTANT: The LED luminary the emergency kit will be used for must be clearly indicated because when the LED luminary has been supplied by JISO ILUMINACIÓN, SL., additional connector cables may be provided in order to avoid handling of the driver output and the luminary input.

WARNING: The LED luminary set + emergency kit do not make up official emergency units according to regulations. They simply provide you with a back-up luminary of between 3W and 7W when they become activated during failures of the general power supply.

Physical conditions

The units used as an emergency kit (2DCLEDK1 and 2DCLEDK2), as well as the batteries which may be used, have the following dimensions:

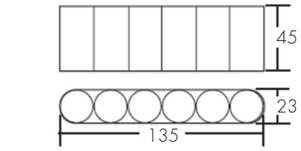


(mm)

L	L1	B	H
166	150	47	35

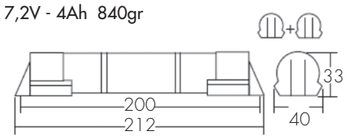
Dimensions of 2DCLEDK1 and 2DCLEDK2

7,2V - 1,6Ah 300gr



Battery 2DCLEDK1 (mm)

7,2V - 4Ah 840gr



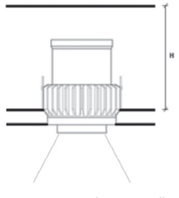
Battery 2DCLEDK2 (mm)

WARNING: Due to the aforementioned, it may be the case that, even if the luminary and the emergency kit are compatible, the unit and/ or batteries won't fit the cut-out hole made for the LED luminary, and therefore will not be able to be installed together.

To avoid problems during installation, we urge you to pay attention to the following table of height restrictions of false ceilings in relation to the diameter of the hole. As well as the height restriction, you must allow for lateral access because if the false ceiling has obstacles, it may not be possible to insert the emergency kit.
(See following page)

HOLE DIAMETER (mm)	H ≥ 6cm	H ≥ 8cm	H ≥ 10cm	H ≥ 12cm	H ≥ 16cm
	2DCLEDK1 2DCLEDK2	2DCLEDK1 2DCLEDK2	2DCLEDK1 2DCLEDK2	2DCLEDK1 2DCLEDK2	2DCLEDK1 2DCLEDK2
Ø30 mm (ó #)	NO	NO	NO	NO	NO
Ø73 mm (ó #)	NO	NO	NO	NO	YES
Ø75 mm (ó #)	NO	NO	NO	NO	YES
Ø80 mm (ó #)	NO	NO	NO	NO	YES
Ø90 mm (ó #)	NO	NO	NO	YES	YES
Ø105 mm (ó #)	NO	NO	NO	YES	YES
Ø110 mm (ó #)	NO	NO	YES	YES	YES
Ø125 mm (ó #)	NO	NO	YES	YES	YES
Ø145 mm (ó #)	NO	YES	YES	YES	YES
>Ø165 mm (ó #)	YES	YES	YES	YES	YES

NOTE: *Guideline values. If the hole diameter of your LED luminary is not shown in the table, please check the next lower figure (e.g. for Ø117mm refer to Ø110 mm).*

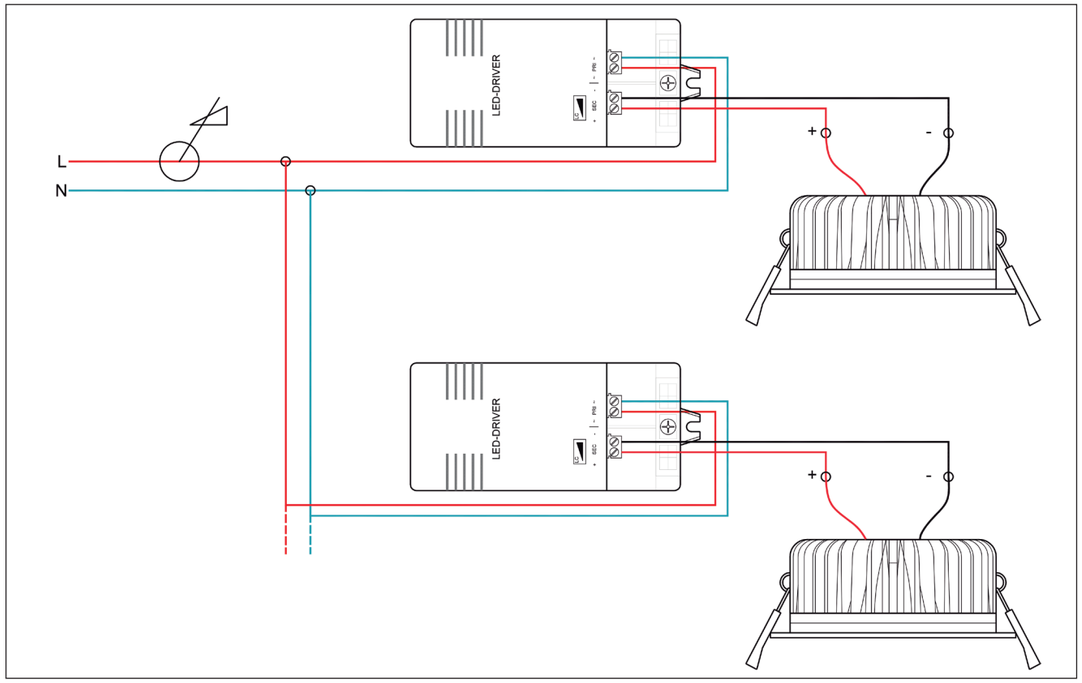


LED Luminary ceiling installation

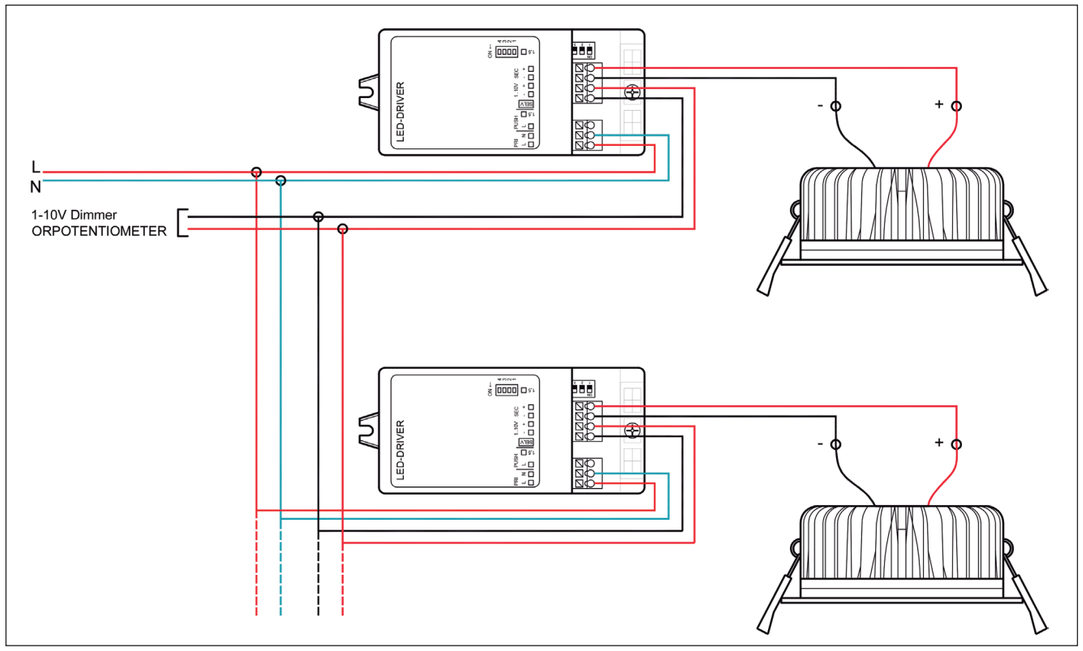
IMPORTANT

- Please discharge completely the battery before the first use.
- For the wiring please refer to enclosed wiring diagrams.
- Great attention must be paid to polarity during the installation of the battery.
- Keep batteries away from heat source (away from magnetic battery).
- In order to check the correct functionality we recommend charging of about 30 hours.
- This system is made to be powered only with the supplied batteries: do not connect any external battery charger.
- It is advisable to effect periodically (every 3 mounths) at least one discharge and charge cycle in order to assure max. efficiency.
- Replace the batteries every 4 years or after 500 charge/discharge cycles.
- Before every maintenance operation, disconnect all mains.
- This product contains materials which could be toxic if improperly disposed in the environment.
- Storage max. 6 months before installing.

TRAILING DIAGRAM

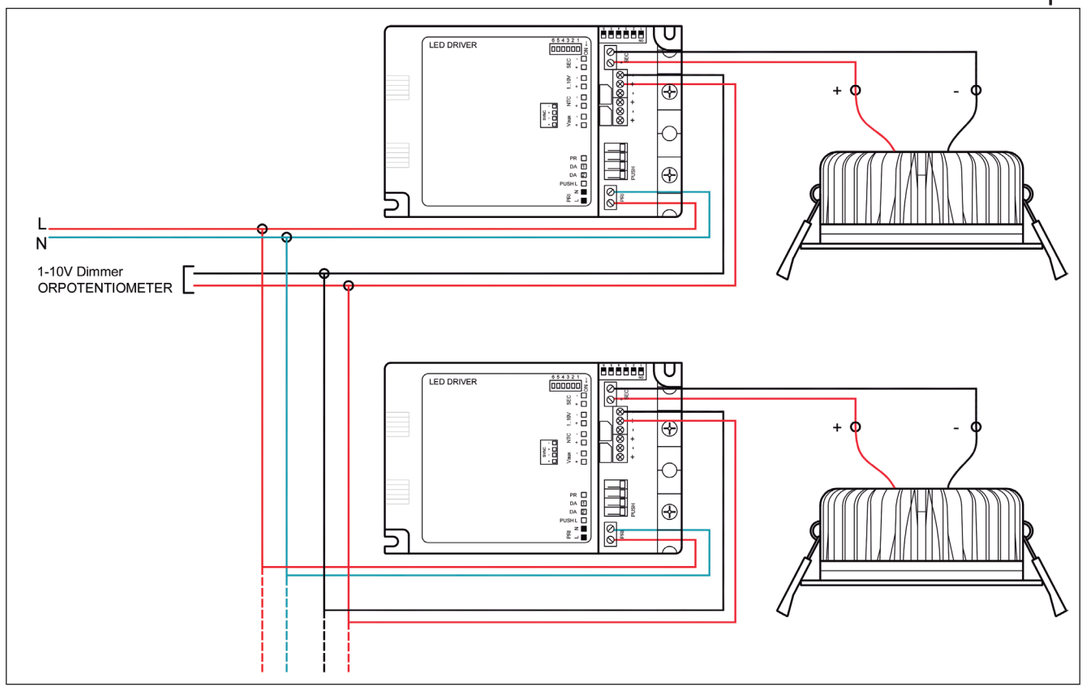


1-10V DIAGRAM - Op2

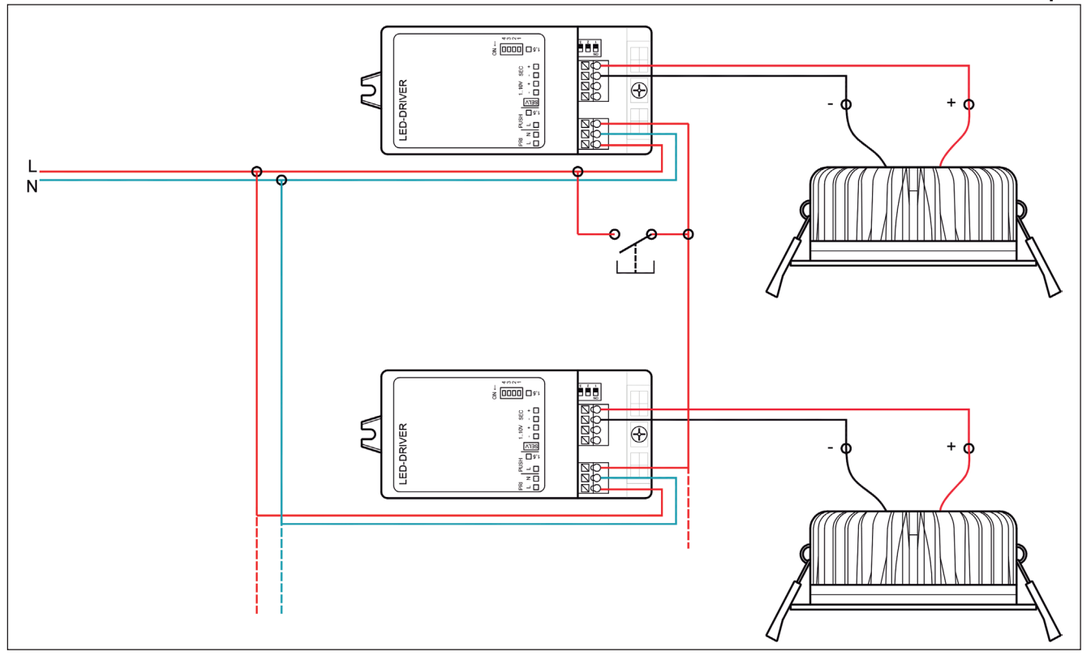


For installation conditioners or frequent problems, consult the product data sheet, installation instructions and / or FAQ section

1-10V DIAGRAM - Op1

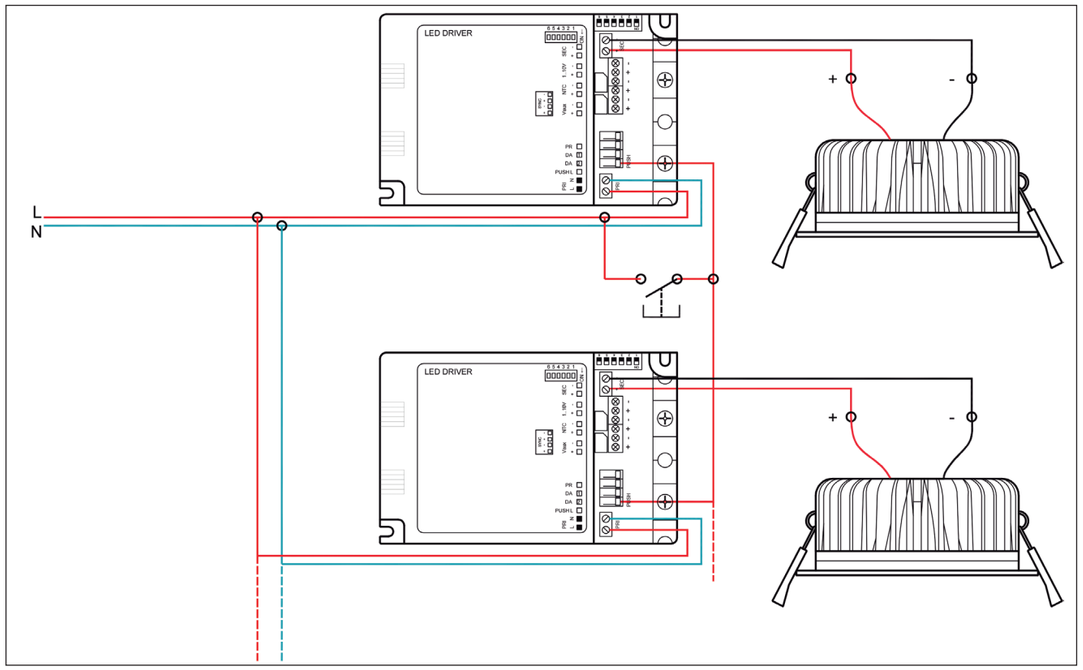


PUSH DIM DIAGRAMA A4 - Op2

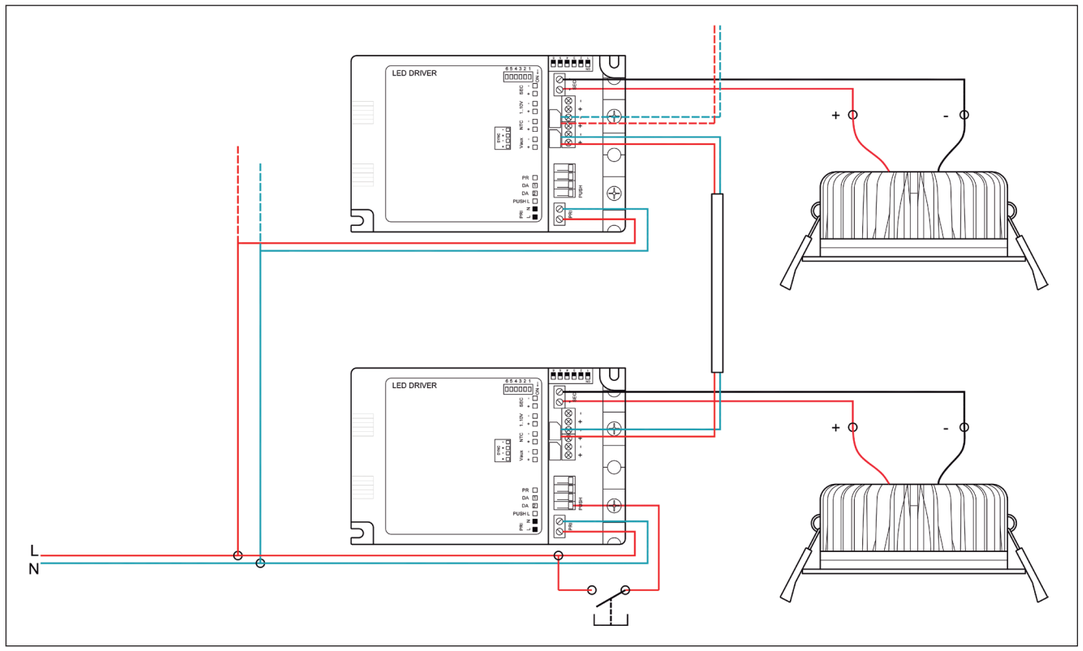


For installation conditioners or frequent problems, consult the product data sheet, installation instructions and / or FAQ section

PUSH DIM DIAGRAMA A4 - Op1



PUSH DIM DIAGRAMA 4B (only to be used with drivers with syncronitation option)



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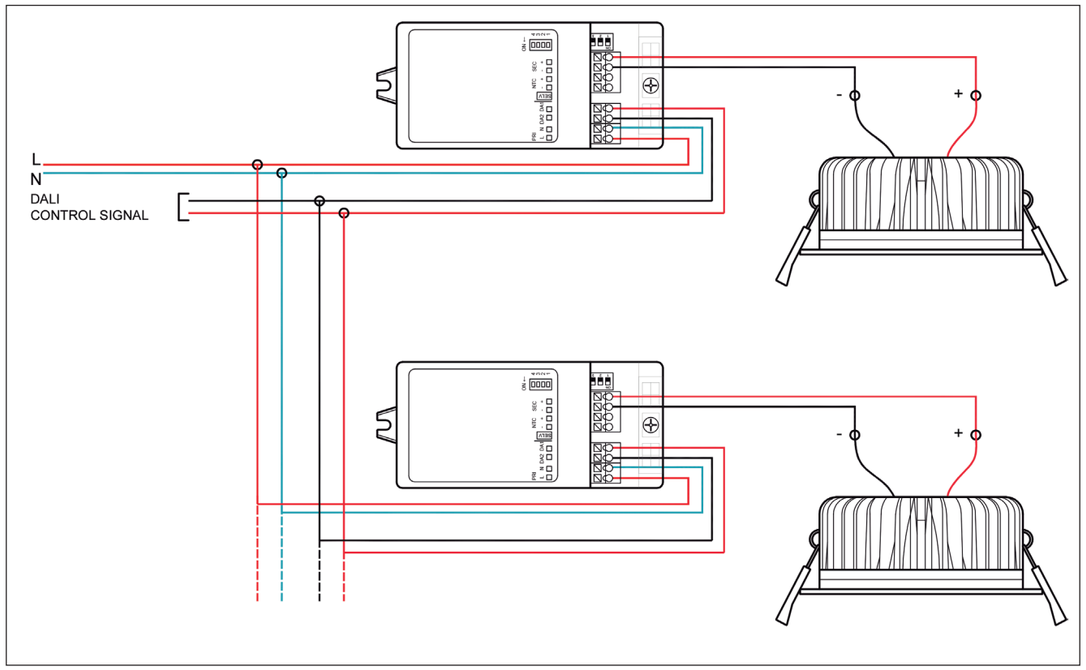
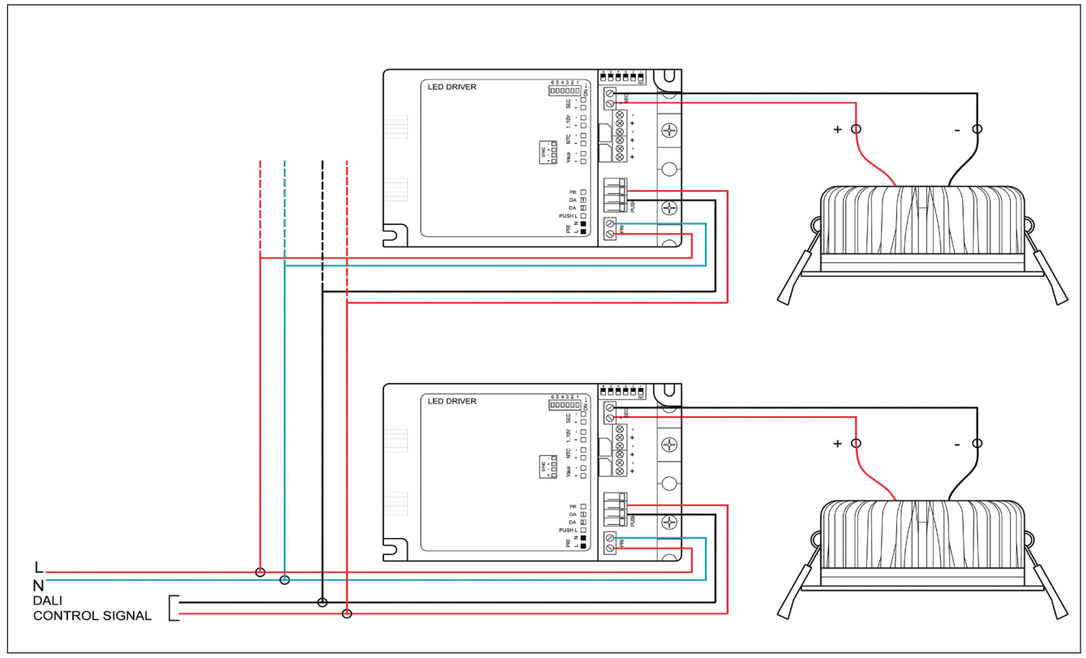
DALI DIAGRAM - Op1



DALI DIAGRAMA - Op2



For installation conditioners or frequent problems, consult the product data sheet, installation instructions and / or FAQ section

IMPORTANT NOTE

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Check for the most up to date information on the website: www.jisoiluminacion.com

JISO ILUMINACIÓN is not responsible for any errors that may appear in this document.

Remember that electrical installations must be carried out by qualified personnel.

If your question is not answered in this document, JISO ILUMINACIÓN, SL. invites you to make further inquiries related to our products through your usual supply warehouse or by contacting us by phone at (0034) 96 252 3061 or by email: asistenciatecnica@jisoiluminacion.com.

Part 1. LED Luminaries

1.1. 1.1. General queries concerning LED luminaries.

Why does my LED luminary flicker or not turn off (residual light)?

LED technology, although apparently similar to traditional lighting, has differences which must be taken into account for their normal functioning:

General recommendations:

1- Firstly, follow the installation and connection order for the different elements:
   A. Perform line checks, the neutral without direct current to DRIVER/LUMINARY and the phases to switch elements.
   B. Connection order: connect the LED luminary to your DRIVER, then connect the Driver to the Line and finally introduce the current.
2- Each DRIVER with the appropriate LED luminary! The power supplies (DRIVERS) are electronic devices and not merely transformers. They deliver regulated voltages and currents and have direct current outputs, so respect connections and polarities. CAUTION especially in installations which feature different LED luminary models. Check the driver, the type of current, the voltage and the polarity, taking into account that the current can be 300mA, 350mA, 600mA, 700mA, 1000mA, etc., and that the output current of the driver is continuous.
3- Wiring. Splices and Connections. It is important to use suitable section wiring, considering that the current required is very small. The splices require welding and insulation with heat shrink tubing or tape. Observe the connections, whether they are series or in parallel according to the manufacturer's installation recommendations.
4- It may be that the LED luminary is giving off any light but always remember that current is still circulating in the system.

If you encounter any issue, please give us the opportunity to resolve it before returning the product. Most technical assistance questions can be answered through our knowledge base on the website: www.jisoiluminacion.com, or via the technical support service by email: asistenciatecnica@jisoiluminacion.com. The use of the electronic elements and parts of the installations can cause some very specific and sporadic incidents which do not damage the LEDs but which are striking, such as residual luminescence (brightness), flickering or switching off shortly after installation (temporary block which works by removing and returning the switch).

All these effects existed previously but were not detected because lighting technologies were not as efficient; a lot of energy was needed for their operation and the "residual" voltages, the induction generated voltages, the commuted point installations and the mechanisms with light signal did not affect them.

Most frequent causes of the effects mentioned above:

1- The switches of the electrical installation cut the neutral whereby the phase reaches the LED.
2- Current flows through the neutral, due to earthing shunt or other causes.
3- Induced current. This can be generated by the presence of large household appliances or industrial machinery.
4- Pilot signalling switches (Neon or LED). This type of switch admits a current of 12 to 30 volts.
5- In switched-point installations, a residual voltage may be produced (due to the length of the crossing lines) which acts as a capacitor generating small voltages which can maintain some brightness, flickering or blocking of the LED luminary driver.

Possible solutions:

In points 1, 2 and 5, we recommend checking the electrical installation.

Neutral direct to Driver - Phase to switch

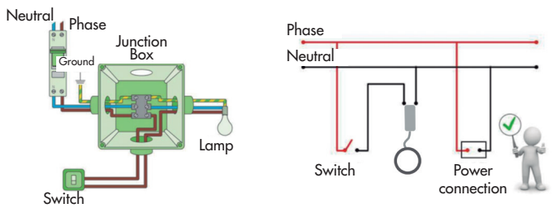
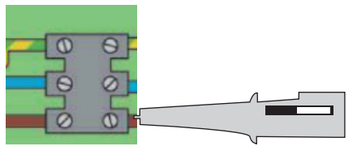


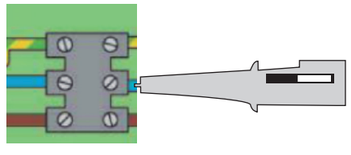
Image 1. LED luminary connection diagram + switch

To easily check if it is neutral or phase, we can use a pole detector, or Multimeter/Tester.

- When you touch the phase conductor with a pole detector, the neon light shines. In the new models with an LCD display showing the voltage, when you touch the phase it will read 220v.



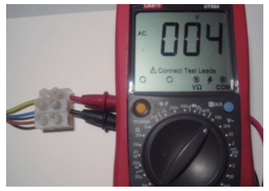
- In pole detectors, neither the neutral nor the earth triggers the neon light. And in the pole detectors with an LCD display, no voltage is indicated for the neutral or earth.



With the Multimeter or tester using Voltmeter AC 750V function

Between phase - neutral 220V-240V will be indicated

Between neutral and earth 0V.



And between phase-earth 220V-240V.

Another possible solution in cases of residual current would be to install a capacitor of 0.47uF 400V (Solution points 3 and 4).

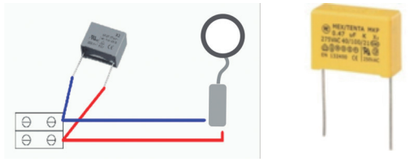
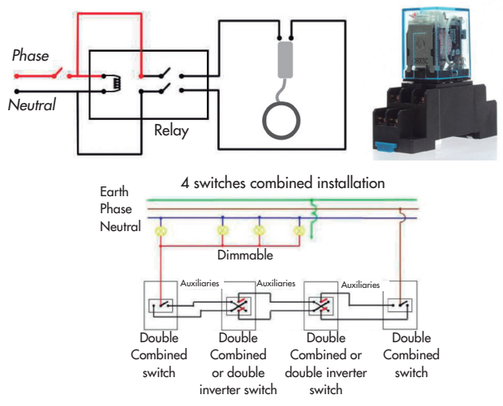


Image 2. Condenser REF. DCCONDEN-1

You can also use bipolar switches or contactors to count the current flow to the lighting lines. (Solution points 3 and 4



- Image 3. Contactor REF. DCCONTACT-1

My home network features two active poles ("biphasic"). Might there be any incompatibility with JISO ILUMINACIÓN, SL. LED luminaries?

Yes.

In this type of installation, in which the two cables which arrive to the luminary driver contain voltage, with no difference between phase and neutral, it is possible that the drivers will block themselves (in self-protection) or that the light emitted by the LED luminary is visible even with the switch open (since only one of the phases is cut).

This is because the JISO ILUMINACIÓN, SL. LED luminaries which include the JISO driver have a voltage supply which generally ranges from 100-240V and, like the conductor cables of the installations discussed, have a potential such that they are capable of activating these drivers at any time due to the generation of a voltage, according to potential difference, greater than 100V and less than 240V. This potential difference causes the driver to activate and powers the SMD LED chips at low strength.

In order to avoid problems with this type of installation, the following options exist:

If you have not yet ordered the material:

- Select a reference number that incorporates a driver with a voltage range between 220-240V. This does not mean that the driver will not continue to have a permanently connected active pole (phase) but, since a potential difference greater than 220-240V is required for its activation, the LEDs will not receive power from the driver.

If you have already ordered the material (choose one of the two options):

- Add an omnipolar circuit breaker which, when cutting the two active poles on the switch, will leave the driver completely unpowered whenever the switch is used to turn off the light.
- Add a relay to generate an effect similar to that achieved by the omnipolar circuit breaker.

Can I install a fan on the same line?

It is recommended that you do not do this on the same line as booting the fan/extractor may damage the luminary driver.

This can also occur when the power supply of the fan or any other equipment that needs high intensities to boot is close enough to the power wiring of the luminaries. This is because electromagnetic inductions can be generated which damage the drivers and generate flickers or residual light in the luminaries, among others.

Which driver is compatible with the luminary I purchased?

On p. 322 of the catalogue you can find the table showing the reference numbers of the drivers compatible with each luminary model. These drivers can be either adjustable or non-adjustable.

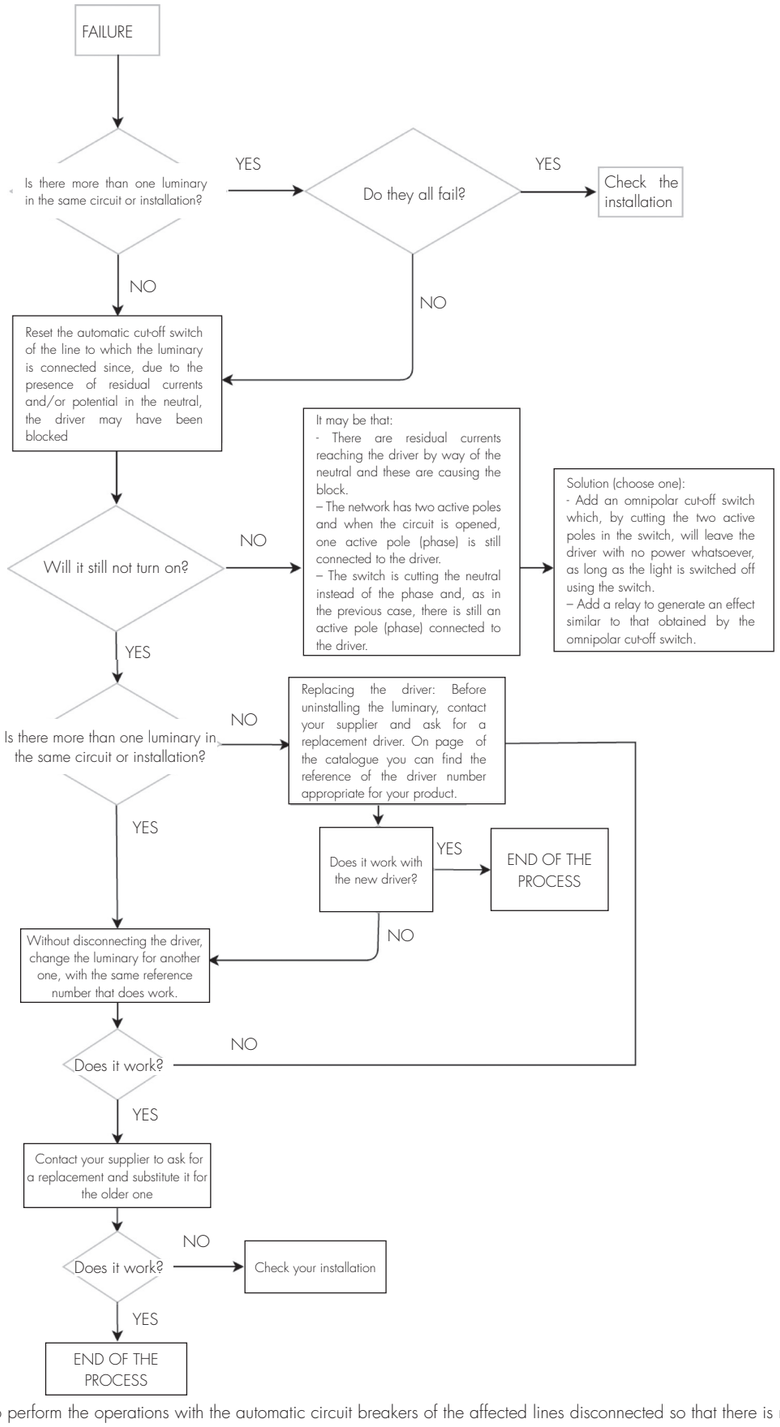
If you need a replacement driver or an adjustable driver compatible with any of the JISO ILUMINACIÓN, SL. luminaries, refer to the aforementioned table in order to request the reference number that best suits your needs.

Is it possible to leave the luminary hanging before placing it in its final position?

NO.

Remember that when any equipment supplied by JISO ILUMINACIÓN is being installed, it should be placed in its final position, attached to the ceiling, so as to avoid unforeseen stress on the connection cables between the driver and LED modules.

What should I do if my luminary has been turned off and will not turn on again?



NOTE: Remember to perform the operations with the automatic circuit breakers of the affected lines disconnected so that there is no supply voltage in the affected circuits.

Is it possible to use triple lighting luminaries with a commuting switch?
It depends.
Commuted circuits, depending on the length of the wiring, can generate electromagnetic induction that activates the drivers and, therefore, does not allow for the resetting of same after being powered off for between 10-15 seconds.
The consequence of this would be an incoordination between the luminaries of the installation and its consequent inconvenience to the user.

I have an installation with triple lighting luminaries and I would like the lighting cycle to start in position 3. Is that possible
NO.
Currently this type of function is not provided since the operation of the driver associated with this LED luminary is as follows:
1st lighting: Power from the driver to the SMD LED strip (indirect light)
2nd lighting: Power from the driver to the COB chip (focused light)
3rd lighting: Power from the driver to the SMD LED strip and the COB chip

Due to the above, the design of the driver does not allow for start-up directly in the 3rd lighting.

JISO ILUMINACIÓN, SL. is working to modify these features in the future but, to date, there is no way we can change the configuration outlined in the catalogue.

Is it possible to use switches with indicator lights on circuits with LED luminaries?
Using these switches with the LED luminaries is NOT recommended since, due to the way the light-emitting diode works, a residual current capable of activating the LED chips, albeit at low light intensities, will always reach the LED luminary and still generate residual light with the switches open.

Is it possible to install LED luminaries and other kinds of luminaries (compact fluorescent, halogen, etc.) in the same circuit?
NO.
The mix of technologies in the same circuit can generate incompatibilities that cause serious faults both in the LED luminaries and in the other kinds of luminaries.

I have a display and only half lights up. Is this normal?
NO.
In those of 60x60cm the light is generated by two LED strips, with constant current, connected in parallel and facing each other so that, if only half lights up, one of them has stopped working and you should contact your supplier in order to solve the problem.

Is it possible to connect several luminaries by means of the same driver?
NOT recommended (even if technically possible).
JISO ILUMINACIÓN, SL. supplies its luminaries with the appropriate driver according to their internal characteristics (Vdc and Idc).

It is technically possible to use several luminaries, in series or in parallel, with a single driver that meets the needs of the designed installation. However, our past experience means that we DO NOT recommend this type of installation. If attempted, the warranty of the products supplied will no longer be valid.

It should be remembered that each luminary comes with its associated driver (or drivers). DO NOT connect one driver to several of our luminaries without the express authorisation of JISO ILUMINACIÓN, SL.

Where can I get the .ISO or .LDT files for JISO ILUMINACIÓN, SL. LED luminaries?
Currently these files are not available on our website so we recommend that you contact us in order to request them.

In the coming months this information will be updated and placed on our website, www.jisoiluminacion.com, for our customers to access.

Is it possible to keep my JISO ILUMINACIÓN, SL. LED luminaries turned on 24 hours a day?
NO.
As a general rule, continuous operation for 24h/day is NOT possible since they are designed for a maximum use of 14h/day.

If you need to use the luminaries for more hours per day, contact us for personalised information.

1.2. Control systems for LED luminaries.
DALI
What terminals of the driver does the DALI controller connect to?
(See DALI installation diagrams on page 333.)

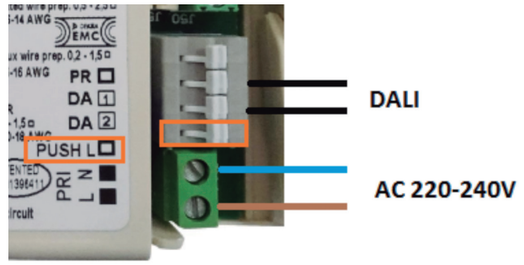


Image 4. Example of connection with driver 3025-43350

The drivers supplied with the DALI controllable luminaries include two terminals marked DA 1 and DA 2. These terminals are used to connect the cables from the DALI controller.

It should be noted that in the options in which the driver allows for PUSH control as well as DALI control, the terminal for the former is located next to the AC power supply (L and N) and, therefore, between the DA1 and DA 2 input, and the AC supply will always remain an intermediate terminal to which nothing will be connected and which will correspond to the PUSH connection.

Is it possible to control DALI luminaries in an analogue manner?
DALI is a digital and addressable communication interface for lighting systems and so, by definition, it is not possible to use an analogue controller with it.

I have purchased a DALI controllable luminary but I want to use a push-button to control it. Is this possible?
It depends.
The JISO ILUMINACIÓN, SL. luminaries compatible with DALI control systems, depending on the characteristics of the included driver, may have, apart from the DALI control option, the option of controlling via push-button (PUSH) or 1-10V system.

This option is a feature of the DALI luminaries which include drivers with reference number:
- 3025-43350
- 3030-43MmA
- 3055-43MmA

On page 322 of our catalogue you can check in which luminaries the aforementioned drivers are used.

PUSH
Which terminals of the driver does the push-button (PUSH) connect to?
(See PUSH installation diagrams on page 332.)

IMPORTANT: This type of driver does not need any additional control pad. It is controlled directly in the driver from the pulses generated by the push-button.

Three wires need to be passed to the luminaries. These are shown in the following image.

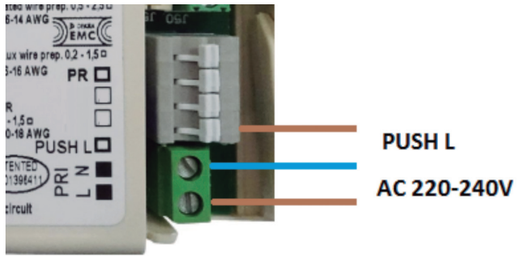


Image 5. Connection example with driver 3030-33MmA

The drivers supplied with the PUSH controllable luminaries have a terminal marked PUSH L. This terminal is used to connect the push-button return cable. Through this cable, the push-button sends the pulses to the driver to switch on or off or to regulate the light intensity. In addition to the push-button return cable, a continuous power supply must be connected via the AC input connection (L and N).

How many devices can be connected in a circuit controlled by a push-button (PUSH)?
It is usually not recommended to connect more than four devices per push button. In some cases, when several devices are connected to the same push-button, the system may become unsynchronised. This problem can be solved by following these steps:
1. Turn on the devices.
2. Hold the button down for more than one second and then press it for less than a second.
3. The devices should switch off.
4. Hold the button down for longer once more and it will be synchronised again.

Some devices allow the use of a synchronisation cable (Ref. JISO_3SIN-C1,5 or 3SIN-C4,0) to handle control of the devices connected to a push-button using the "Master and slave" system, so that the push-button return would be connected to a single driver and from this, through the use of the synchronisation cable, the rest will be interconnected.

With this system it is possible to add up to 10 drivers per circuit (1 master and 9 slaves).

This option is a feature of the PUSH luminaries which include drivers with reference numbers:
- 3025-43350
- 3030-33MmA
- 3055-33MmA

NOTE: The synchronisation cable is supplied as a separate reference number and must be taken into account during the design of the installation.

The "Master and slave" system is also compatible with the drivers included in the following DALI and 1-10V luminaries:

1-10V	DALI
3025-33350	3025-43350
3030-33MmA	3030-43MmA
3055-33MmA	3055-43MmA

Can I install a dimmable luminary with a push-button with a position indicator?
NO.
Luminaries supplied by JISO ILUMINACIÓN, SL., which include controllable drivers cannot be installed with this type of controller

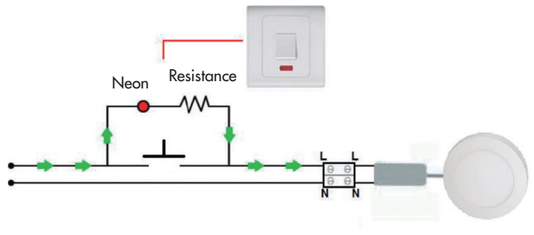


Image 6. Residual current due to push-button with indicator light

As shown in the above image, when a push-button with an indicator light is used, even if it is in the open position, power continues to flow in the downlight supply circuit. This causes the PUSH function of the driver not to work properly or at all.

How does the push-button work?
Controllable luminaries with the PUSH option allow for switching ON/OFF and dimming via a push-button without an indicator light.

This is done as follows:
- A short push of the push-button turns the luminary on or off.
- A long hold increases or decreases the intensity of the light.
- When the minimum or maximum is reached by holding down the button, it stops controlling.

Can I control with a push-button from various points?
JISO ILUMINACIÓN, SL. adjustable luminaries with the PUSH option allow for control by way of adding several push-buttons to the same circuit. It is, however, recommended that you use the synchronisation cable where this is an option because this reduces the risk of desynchronisation.
For installation with this type of configuration, it must be taken into account that the push-button returns will be connected to the PUSH L terminal of the circuit driver or drivers. A basic schematic is shown below by way of example.

1-10V
To which driver terminals does the 1-10V controller connect?
(See 1-10V installation diagram on page 330-331.)

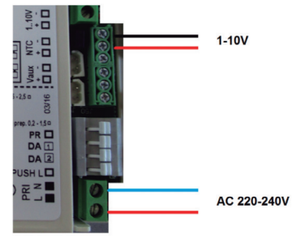


Image 7. Example connection with driver 3030-43350

The drivers supplied with 1-10V controllable luminaries have two terminals labelled 1-10V: "+" and "-". These terminals are the ones that must be connected with the control cables coming from the 1-10V controller. Through these cables the controller increases or decreases the light intensity from 1% - 100%.
Depending on the type of controller chosen, to handle the 1-10V control, it will be possible to perform power on and off as well as dimming.
It should be noted that each luminary will have four cables connected to it, one phase (L), one neutral (N), one "+" and one "-" (for 1-10V control).

Can I control using a 1-10V dimmer from several points?
NO.
This type of control can only be carried out from one point. The only thing that is possible, depending on the type of dimmer, is commuting the ON/OFF with a conventional switch, so that from one point it can be turned on, turned off and dimmed but from the other points, you can only turn it on and off at the last setting.

GENERAL (DALI//1-10V//PUSH)
Restoring factory settings. I have a luminary connected to a push-button but I want to change the controller for a 1-10V dimmer. Is this possible?
The devices with 1-10V, PUSH and/or DALI control from our supplier TCI can be reset in order to change the use for which they were configured.
In other words, if I have a driver that allows for control using 1-10V and PUSH and I have been using it for a while with a push-button and then I want to change it for a 1-10V controller, it is possible to restore the factory settings so that the new controller can be connected with a change of function.

For the above it is important to note the following:
- The drivers do not generally have a preset function from those possible due to its characteristics. When a controller connects when it is first turned on, this control is the one that is set.
- The driver can only control in the system that is indicated in its specifications so, if control IS NOT possible in a certain system (for example, DALI), it can never be controlled by dimmers from that system.
- When you want to change the configuration of a driver which is being controlled by a certain system, in order to use another type of compatible control or, when you wish to restore the factory settings because these, instead of coming with open configuration come with a set control configuration, the following must be performed:
  1. Disconnect the system from the supply system to avoid the risk of electrical contact.
  2. Connect the AC 220-240V input cables to the driver (L and N).
  3. Make a jumper (short circuit) between the "+" and "-" terminals of the 1-10V control of the driver.
  4. Connect the luminary.
  5. Power the system for at least one second.
  6. Remove the jumper (short circuit) between the "+" and "-" terminals of the 1-10V control of the driver.
  7. The light of the luminary will turn on and the device will have the factory settings restored and be ready to be connected to a new controller.

(See the image on the page)

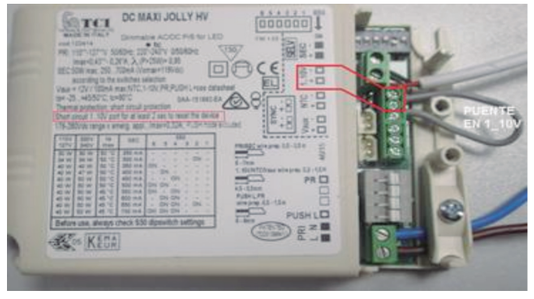


Image 8. Example connection with driver 3030-33MmA

TRAILING (cut-off at the end of phase)
How is the TRAILING controller connected?
(See TRAILING installation diagrams on page .)
The TRAILING control does not need additional control wiring for its connection since it connects directly, in series, between the power line and the driver.
This allows for control in zones where it is difficult for the wiring to reach the point of light.

Which controller should I use to control TRAILING luminaries?
The one to use with the TRAILING luminaries supplied by JISO ILUMINACIÓN, SL. must be for **cut-off at the end of phase and compatible with LED technology.** This is extremely important as people usually try to use phase cut-off controllers used for old technology which causes problems with LED technology. These old technology controllers have an operating power range that typically starts at 40W (minimum) up to about 200W-400W (maximum), while LED-compatible phase cut-off controllers have a minimum of 1W and a maximum of over 100W (depending on the device to be used).

When using an end of phase cut-off controller which is not compatible with LEDs, issues such as flicker, no dimming, excessive noise etc., may occur. This is due to the fact that since LED luminaries operate at low power, it is very easy to be below the minimum power of the controller when dimming. For example, if we connect five 10W luminaries (50W in total), with a dimming setting below 80% of the strength, the power consumed would be inferior to 40W and, therefore, would be outside the control range of the mechanism.

On the other hand, the controllers to be used with TRAILING luminaries are usually marked as follows:

Imagen 9. TRAILING and TRAILING & LEADING control symbols

TRAILING: Compatible with control via cut-off at the end of phase.
TRAILING & LEADING: Compatible with control via cut-off at start and/or end of phase.

Finally, it is recommended that the chosen controller feature a selector that allows one to adjust the light intensity to low intensities. This allows you to avoid problems with flickering since we will use the selector to set the minimum in the position immediately before the point where the flickering begins.

Is it possible that the installation with TRAILING control flickers at low light intensities?
Yes.
Due to the characteristics of the type of control that is done, at low intensities, the control via phase-cut-off, both at the beginning and at the end, can generate flicker at low light intensities, which is why the dimmers suitable for this type of control usually feature a selector that allows the minimum level of light control.

To avoid this flickering, the minimum light level should be set at just before the flickering begins.

Is it possible to control LEADING controllable JISO ILUMINACIÓN, SL. products by cutting off at the start of phase?
It depends.

The TRAILING controllable JISO ILUMINACIÓN, SL. products, in some cases, allow for control via cut-off at the beginning and/or end of phase. This depends on the type of product and the driver associated with it.

Generally, when the driver that the luminaries include is TRAILING from the ELT brand, then the driver bears the inscription shown below and is therefore compatible with the two types of control.

Image 10. Symbol of compatibility with TRAILING and LEADING control systems

The adjustable 7W bulbs DO NOT allow for LEADING control.

Is it possible to control this type of luminary with push-button control pads?
It depends.
The drivers compatible with TRAILING control that incorporate JISO ILUMINACIÓN, SL. luminaries can be used, along with control pads (Dinuy RE-PLA-LE1, ELT eDIM or similar), provided that these are compatible with TRAILING controllable LED luminaries (cut-off at end of phase).

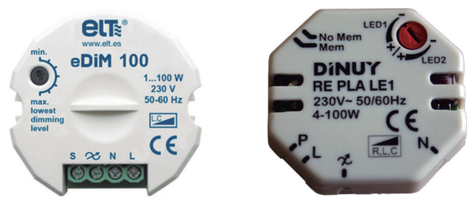


Image 11. Push-button control pads compatible with TRAILING drivers

This type of control, by push button, avoids having to add additional wires from the mechanism to the luminary. The wiring is modified in the interior of the mechanism or in the connection box.

These devices can be controlled via several push-buttons in parallel and so, during the design of the installation, consult the technical data sheets to check the characteristics of same as well as their connection requirements.

Can I control using TRAILING dimmers from several points?
NO.
This type of control can only be performed from one point. The only thing possible is, depending on the type of dimmer, to commute the ON/OFF with a conventional switch in such a way that it can be turned on and off and adjusted but from the other points it can only be switched on and off at the last control setting.

To control the TRAILING controllable LED luminaries from several points, see the previous frequently asked question.

1.3. Complimentary LED lighting systems for emergencies.
Are any of the JISO ILUMINACIÓN, SL. luminaries compatible with emergency lighting in accordance with regulations?
NO.
JISO ILUMINACIÓN, SL. luminaries are not, in any case, emergency luminaries in accordance with the applicable regulations. However, there is the possibility of connecting the luminaries to an Emergency KIT which allows a reduced illumination to be maintained during a fixed time in case of a general mains failure.

These Emergency Kits consist of a control device, which manages the power supply of the luminary, and one or more NiCd batteries, which accumulate energy to be released in the event of a general mains failure.

These Emergency Kits, depending on the model, can keep supplying power to the luminaries with a power level between 3 and 7W for 1 hour or 3 hours, depending on the battery. In addition, it can be installed in the following two modes:

1. Permanent use (the luminary functions as per usual with its driver and it also functions, under certain conditions, when there is a general mains failure)

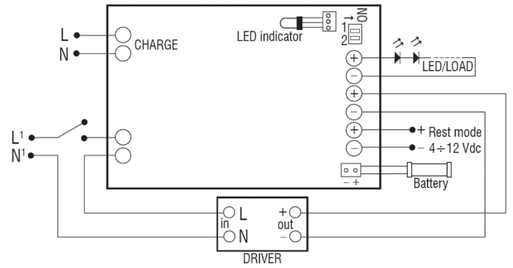


Figure 12. Connection diagram Emergency Kit for permanent use

2.2. Non-permanent use (the luminary is installed without a driver and only works, under certain conditions, when there is a general mains failure)

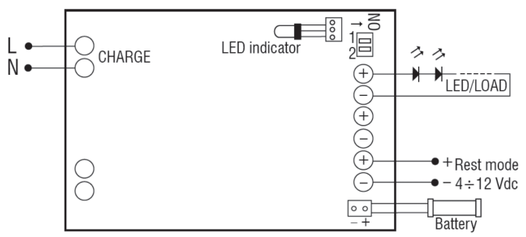


Figure 13. Connection diagram Emergency Kit for non-permanent use

I want to add an Emergency Kit to my LED luminary. Are there any limitations with regard to doing this?
Yes.
The LED luminary used cannot have a direct current (DC) voltage that is higher or lower than that indicated in the technical data sheets of the Emergency Kit (request a technical data sheet or look up www.jisoiluminacion.com).

If the voltage does not match that indicated, the LED luminary may not turn on when the mains supply fails and the battery should come into operation.

Models of Emergency Kit also exist which have a maximum voltage selector per option selected (Ref. 2DCLEDK1 and 2DCLEDK2). In these cases, depending on the LED luminary, the selector should be set to the correct position.

	A	B	C	D
	12 V	24 V	48 V	60 V
1	ON	ON	-	-
2	ON	-	ON	-

Image 14. Example of selector settings in Ref. 2DCLEDK1 and 2DCLEDK2

Is it possible to add an Emergency Kit connected to LED strips?
It depends.
YES, this is possible in Ref. 2DCLEDK1 and 2DCLEDK2, but it is conditional on a maximum potential of LED strip installed depending on the voltage of same.
- 12V → 24W
- 24V → 30W

In the case of Ref. 2DCLEDK5, 2DCLEDK6, 2DCLEDK7 and 2DCLEDK8, the limitation of the device is conditional on the operating current, and cannot exceed 2.5A.

Part 2. LED strips (coming soon...)

(See LED strips section for information concerning installation)

DESIGN AND INSTALLATION GUIDE FOR LED STRIPS

INDEX

0. IMPORTANT NOTE (mandatory reading)
1. BASIC GUIDELINES AND RECOMMENDATIONS
PRIOR TO INSTALLATION
-Use of different types of LED strips in the same installation
-Basic information on LED strips
-Power supplies
-LED strip installation areas and/or power supply location
DURING INSTALLATION
AFTER INSTALLATION
2. TECHNICAL INSTRUCTIONS FOR ARRANGEMENT OF LED STRIPS
DIAGRAM TYPE FOR LED STRIP INSTALLATION
3. TECHNICAL INSTRUCTIONS FOR THE INSTALLATION OF POWER SUPPLY UNITS FOR LED STRIPS
DIAGRAMS FOR THE CORRECT INSTALLATION
-Standard power supply
-Adjustable power supply
-Power supply IP ≥ 65

0. IMPORTANT NOTE

Before any installation with this product line, please consider the following instructions and recommendations in order to guarantee a correct and long-lasting installation.

The warranties for the LED strips supplied by JISO ILUMINACIÓN, SL. are subject to compliance with the warrantee conditions included in the current catalogue, to current technical-legal standards concerning these types of installations and to the considerations outlined in this guide, according to standards agreed upon by leading manufacturers and installers.

Reading of the information included in this document is mandatory for ensuring the correct design and installation of LED strips supplied by JISO ILUMINACIÓN, SL., as the new LED lighting technologies, specifically LED strips, require, on the art of the qualified professional, the necessary knowledge and careful attention and observations that we sum up in this document.

*JISO ILUMINACIÓN, SL. **WILL NOT** be held responsible for any faults of their products, if they are the result of an installation that fails to take into account the standard guidelines and recommendations and the technical instructions stated in this manual.*

The non-compliance of these standard guidelines and recommendations and technical instructions will result in the invalidation of the product warranty.

This document annuls and replaces the previous ones. The company JISO ILUMINACIÓN, SL. reserves the right to effectuate technical, formal and dimensional modifications at any given time and without prior notice. The complete or partial copying of the current manual is forbidden, unless there is written authorisation from the manufacturer.

Check the most up to date information on the website: www.jisoiluminacion.com.

JISO ILUMINACIÓN is not in any way responsible for errors that may appear in this document.

1. BASIC STANDARDS AND RECOMMENDATIONS

BEFORE INSTALLATION

Use of different types of LED strips in the same installation

- The use of strips from other manufacturers in the same installation with strips supplied by JISO ILUMINACIÓN, SL. is **NOT** recommended. The differences in design, component quality, LEDs, PCB strip, tapes, etc., can cause major installation problems, strip damage, variations in colour temperature or light intensity, damage to the power supplies or control units.
- **Do NOT under any circumstances** mix different models with different power capacities, voltages, chip types, colour temperature, IP protection, etc., including JISO ILUMINACIÓN, SL. LED strips.

Basic information on LED strips

- Depending on the model as well as the packaging label, on the side labelled PCB, where the electronic components are located, are some basic captions that allow us to determine at the very least;

A. The power supply voltage. (In this example DV12V, Direct Current of 12V)
B. Polarity for the connection of the supply line.
C. Cutting line.

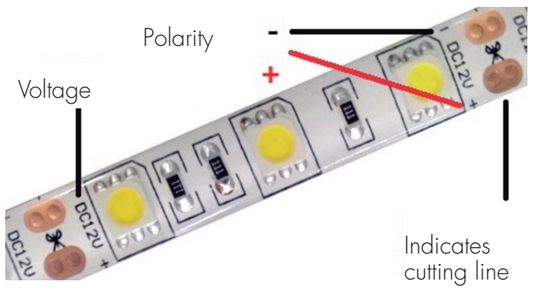


Image 0. LED Strip features

- LED strips with a continuous length of more than 10m must **NOT** be installed when they have an IP 20 protection class. This is because a strip that is longer than the one shown, could generate a loss of light intensity in the end segments, and it may also overheat the LED strip's PCB due to an excess of intensity circulating through the printed circuits boards.
- Led strips of more than 5m continuous length must **NOT** be installed when they have an IP 65 protection class. This is because connections of this type of strip are not recommended as they may cause a weak point as far as the conservation of the IP protection class is concerned.
- The LED strips are not designed to remain operational for a continued period of 24H.

(See "After installation" section)

Power supplies (Refer to point 3 in this document for further information on the current document)

- The LED strips connect to direct current and low voltage power supplies with voltages of 12V, 24V… that should be supplied or validated by JISO ILUMINACIÓN, SL. The use of power supplies that do not comply with the aforementioned may be considered reasons for warranty invalidation with **NO** claims being accepted. (See Table on compatibility between power supplies and LED strips depending on length in Annex I which shows the compatibility of the drivers supplied by JISO ILUMINACIÓN, SL. with the LED strips according to their length).

- Always check that the voltage of the LED strip matches the voltage of the power supply.**" LED Strip 24V + Power Supply Unit 24vV "**
- When using standard power supplies from the JISO ILUMINACIÓN, SL. catalogue, one should ALWAYS overcharge by between around 15% and 25% due to the efficiency of these types of power supplies.

E.g. Installation of 5m LED strip of 14.4 w/m.
14.5 x 5 = 72W → 72 x 1.25 = 90W

In the previous case the first possible power supply option capable of providing 90W which coincides with a power supply of 100W will be selected (EX.: Ref. 3100-2524V or 3100-2924V) (see Table of compatibilities between power supplies and LED strips depending on length in Annex I which shows the compatibility of the drivers supplied by JISO ILUMINACIÓN, SL. with the LED strips according to their length). It is extremely important that this is clear and understood, as the failure to comply with this condition may result in warranty invalidation.

- With regards to the use of adjustable power supplies from the JISO ILUMINACIÓN, SL. catalogue, one should **ALWAYS** try to adjust the charge level to the power supply capacity without overcharging, except in the case of reference no. 3100-4424V and 3150-4424V, which **MUST** be overcharged in the same way as the standard supplies.
- Bear in mind that excessive overcharging may result in a decrease of the desired output.
- For large-space installations, it is preferable to use several standard power supplies, rather than one high voltage power supply with several metres of cable from the power supply to the LED strips.
- From the power supply to the LED strip, the less power cable you have, the better. This will ensure correct operation, avoiding voltage drops, loss of intensity or differences in brightness between the different sets of strips, etc.

When installing the power supply unit at greater distance from the LED strip, the cable section must be increased exactly as indicated below, depending on the metre count:

o 0.10 cm. to 1 m: Cable section 0.25mm²
o From 1 m to 3 m: Cable section 0.50mm²
o Do not install at more than 3 metres without prior examination of the installation features

- It is necessary for the power supplies to have adequate ventilation in order to avoid overheating. Some of the power supplies include forced ventilation which may produce a disagreeable noise and this factor should be considered prior to its design and installation. This occurs in the standard power supplies with 240W voltages (3240-2524V) and 320W (3320-2524V).
- Before any design or installation of power supplies, it must be taken into account that the number of units for installation on one single circuit depends on the type of circuit breaker (thermal magnetic) of the line where it is being installed. In the following table you can see the number of recommended units by the manufacturer of the power supplies provided by JISO ILUMINACIÓN, SL. This information was taken from the current technical information sheets of the manufacturer.
- The information shown on the above table must be taken into account because if the maximum amount of units per circuit breaker is exceeded, the circuit breaker will react during initiation as the current peak which limits it will be passed. This table references the adjustable power supplies and/or IP ≥ 65 power supplies. We do not have this information for the standard power supplies so you should check the technical information sheets for the power supply and the selected circuit breaker before installing them.

Installation points of LED strips and/or location of power supply

- To maintain consistency with regard to the light effect generated by the LED strips, it is recommended that you check that the surfaces where the LED strips will be laid out are even and consist of the same features (paint, material base, surface shape, etc.) before design and installation. This is because the same strip, depending on the type of surface over which the light reflects, can generate shades of light different to the one chosen in the design.

REF. JISO	FAN	INRUSH CURRENT (A)	T50 (us)	B16 (Ud.)	C16 (Ud.)
3020-6524V	NO	70	215	8	14
3035-6524V	NO	55	510	4	7
3040-4512V	NO	50	210	9	16
3040-4524V	NO	50	210	9	16
3060-4524V	NO	55	265	9	16
3060-6524V	NO	60	525	3	6
3080-4524V	NO	70	485	3	6
3100-4524V	NO	60	415	4	8
3100-6524V	NO	75	100	2	3
3120-4524V	NO	60	375	5	9
3150-4524V	NO	65	425	4	7
3150-6524V	NO	60	900	2	3
3185-4524V	NO	65	445	4	7
3240-4524V	NO	75	570	2	4
3320-4524V	NO	70	1010	1	2

Table 1. Power supply number by circuit breaker type

B16 = Circuit breaker Curve B of 16A
C16 = Circuit breaker Curve C of 16A

- When choosing a LED strip model, you should consider whether it will be installed in a profile without a diffuser, with a diffuser or if those are strips with an IP level in which, due to the light reflection over the protective material that illuminates the white area of the LED strip, the colour tone may vary and change to colder shades.
- Installation of any LED strip supplied by JISO ILUMINACIÓN, SL. **MUST** be carried out on a technical aluminium profile (see Jiso base board ref no: 700 or Jiso range profiles).
- Installation of any LED strip supplied by JISO ILUMINACIÓN, SL. must **NOT** be carried out on other surfaces which are not a technical aluminium profile. This may include: wood, tiles, Pladur®, Alucobond®, plaster, iron or steel / stainless steel, etc. These have characteristics which are less favourable than those of aluminium in order to ensure heat dissipation from the high temperatures generated by the LED.
- The room temperature of the location where the strips are installed must not exceed 60° C, nor should it fall below -25° C. If it does, the lifespan or operability of the LED strips could be affected in the short-term.
- Preserve the LED strips in their original packaging and remove them only at the time of use, as the LED technology may be affected by static electricity and damaged involuntarily.
- The optimal storage temperature should not exceed high temperatures (80°C), nor be below extremely low temperatures (-40°C).
- It is **NOT** recommendable to place LED strips on the ground as they may be damaged by environmental factors as well as physically due to the use of the location where they are placed (human transit, cleaning products, etc.).

DURING INSTALLATION

- Installation of LED strips must be carried out by a qualified professional with experience in design and installation.

Handling of strips during installation

- Do **NOT** step on, fold excessively, damage, force, place on surfaces with static electricity, handle with hands/gloves with residue of solvents, adhesives or other products that may alter the functional features or damage the LED strips.
- It should be taken into account that LED strips have, in their base support, where the LED chips, IC resistances or other components (known as PCB flexible) are welded, an electrical circuit (it is NOT an inert strip) that must maintain the proper continuity so that the energy flow runs adequately along the entire PCB.

Precautions concerning installed LED strips

- Once an LED strip is installed, it is recommended that they are adequately protected during painting work on nearby surfaces as they may suffer damage from direct contact with painting tools, the dripping of excess paint, paint fumes and/or sprays, brought about by mechanical painting tools.
- The consequences of lack of protection will alter the functionality of the LED strips, changing their shading, producing continuity failures in the internal circuits and can even cause overheating that damages the LED chips, with failures in sections of the LED strips.

WARNING: It is extremely important that those who are responsible for painting work are aware of the locations where LED strips have been installed, as they may not know of the existence of these types of installations and may cause them involuntary damage. This is quite common in locations like false ceilings, dark areas and other difficult to access areas.

Locations of the power supplies

- Power supplies should be located in open spaces and should not be enclosed, so that they are adequately ventilated and overheating can be avoided.
- The polarity of the connection with the strip must be checked in order to avoid activation problems. This is because if it is not properly connected, they will not activate since the LED chips are polarised (pole "+" and "-").

AFTER INSTALLATION

- Adequate maintenance must be carried out, avoiding damage to the LED strips during the process and for this reason, in the entire installation, it must be noted that static electricity in the chips and components must be avoided, as well as residue deposits of any kind that can alter the lighting conditions of the LED strips.
- It is of vital importance that the room temperature where the strips are installed does not exceed 60° C nor should it be less than -25° C. Otherwise, the lifespan of the LED strips may be shortened and may even lead to short-term failures and loss of functionality of the LED stripes.

REMINDER: It is very important that those who are responsible for painting work in places where LED strips have been installed are informed, as they may not know of the presence of these types of installations and may cause them involuntary damage. This is quite common in locations like false ceilings, dark areas and other difficult to access areas.

- All users of LED strips supplied by JISO ILUMINACIÓN, SL. should be aware that said LED strips are **NOT** designed to operate for a continuous period of 24 hours.
- For optimum performance and durability, the strips should **NOT** be operational for a continuous period of more than 14 hours per day. Otherwise, it may lead to problems with the performance and operation of the LED strips, and may lead to failure and even loss of warranty.

2. TECHNICAL INSTRUCTIONS FOR THE FITTING OF LED STRIPS

– Correct fitting of LED strip-Technical Profile, using the double-sided strip adhesive (3M) which incorporates the unexposed side of the PCB of the LED strip.

Image 1. LED strip adhesive

1. With the top cover of the profile removed, clean the surface of the profile just before fitting the LED strip. It is of vital importance that there is no type of dust, humidity, residues of metallic materials, paint, etc., on the surface where the LED strip adhesive will be fitted.

Remember, DO NOT stick LED strips on the profile without having first cleaned any residues of dust, humidity, metal chips, paint, plastic residue, lubricants, etc

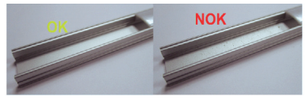


Image 2. Profile cleaning (OK=Correct and NOK="NOT OK"=Incorrect)

2. We recommend that the removal of the adhesive's protective tape so that the active part remains visible is done while the LED strip is in the process of being fitted to the profile. Otherwise, suspended dust, clothes or any materials suddenly falling to the ground could leave bits sticking to the LED strip, thus causing it to lose its sticking capacity, which may in time cause this material to weaken and detach from the strip.

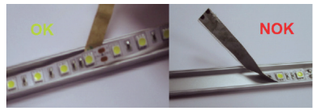


Image 3. Fitting the LED strip while removing the protective adhesive

3.Apply pressure to the zones of the strip without chips in order to reach a better adhesion between the LED strip and the profile. Poor adhesion = **POOR HEAT DISSIPATION/SHORTER LIFESPAN OF THE LED.**

This pressure may be applied manually, avoiding the transmission of static electricity to the LED strip, or by using soft rubber-rollers that cannot damage the LED chips or transmit static electricity.

Image 4. Pressure on the gaps between chips in order to improve adhesion

4. We do **NOT** recommend the immediate activation of the LED strips after fitting them on the profile nor do we recommend the fitting of LED strips while they are turned on.

- When the LED strips are fitted, forming a geometric pattern with angles like squares, triangles, rectangles, etc., the correct way to make the turns is by leaving a small amount of extra cable, of 5 to 10cm, which will allow you to make the turn correctly without having to force the LED strip.
- We recommend that you avail of the personalized service for strips offered by JISO ILUMINACIÓN, SL. Otherwise, you should follow the instructions below:

1. Take the necessary measures for each section, bearing in mind the cutting lengths according to the model you have chosen
2. Cut the strips at the length chosen on the indicated areas only.

Image 5. LED strip cutting OK y NOK

3.Cut and prepare the connection wiring between sections (5-10cm, or as required bearing in mind the possible problems with voltage drops).
The appropriate connection wire should be used for each welded connection, avoiding overcharging so no overheating or short-circuits due to proximity are produced.

Image 6. Examples of OK y NOK weldings

4. Welding should be done correctly leaving the points with sufficient space between them and with wiring between the strips.

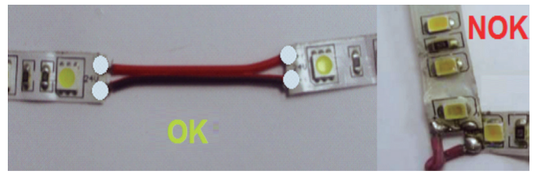


Image 7. Preparation for corner, turn or direction change

5. Finally, protect the area of the connection by covering it with heat-shrink material in order to avoid unwanted offshoots and contact.

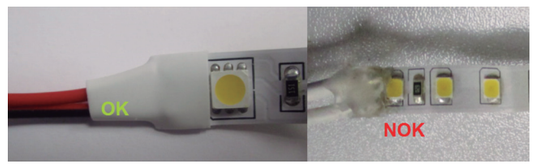
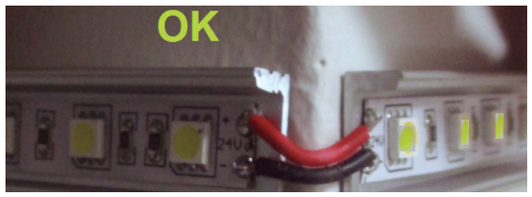
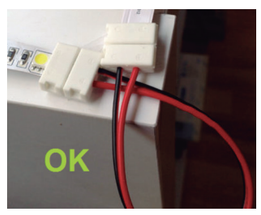


Image 8. Protection of the LED strip - connector cable using heat-shrink material

Below you can see several cases of incorrect fittings of LED strips in areas with angles and direction changes:





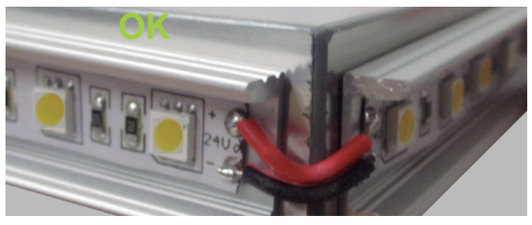


Image 9. Examples of NOK corners, turns and direction changes

– Just like when LED strips are fitted in the previous situations, when it is necessary to perform cuttings, junctions and connections, **we recommend that you avail of the personalised service for strips offered by JISO ILUMINACIÓN, SL.** Otherwise, you should follow the instructions below, mentioned beforehand. Carefully observe the above and the images of the incorrect installations as these kinds of bad practices can cause problems in the installation and the devices, as well as loss of warranty for the products supplied by JISO ILUMINACIÓN, SL.

WARNING: We do not recommend cutting, connecting or handling of the interior of the LED strips with IP ≥ 65 because this type of handling could affect the waterproofing capacity, as well as the warranty of the LED strip itself.

– JISO ILUMINACIÓN, SL. has a range of CONNECTORS/ JUNCTIONS/SPLICES to facilitate the correct and simple performance of same. Various examples of these are shown below:

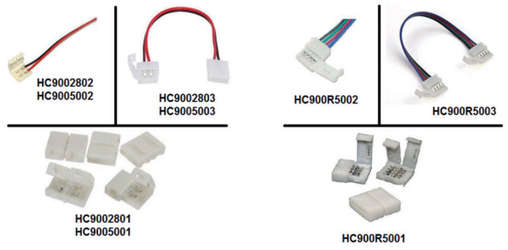
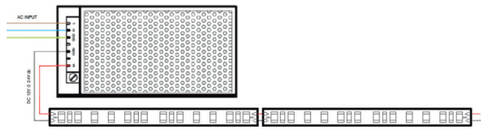


Image 10. Examples, with their reference no., of non-welded connectors

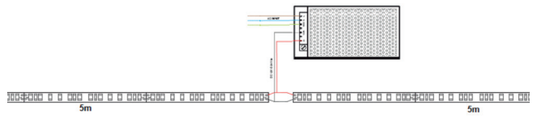
REMINDER: The IP65 LED strip will no longer be classified as such after a connection is performed. In order to maintain its waterproofing capacity, we must apply a sealing product to the connection area. The JISO ILUMINACIÓN, SL. warranty will remain valid as long as said section is ordered with the connection which is custom pre-assembled in the factory.

TYPE DIAGRAMS FOR LED STRIP INSTALLATIONS

Monocolor Strip LED

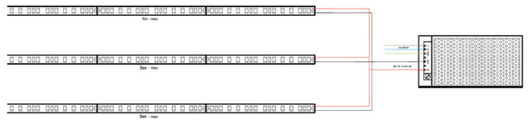


1. Installation 2 monocolor strips to driver.

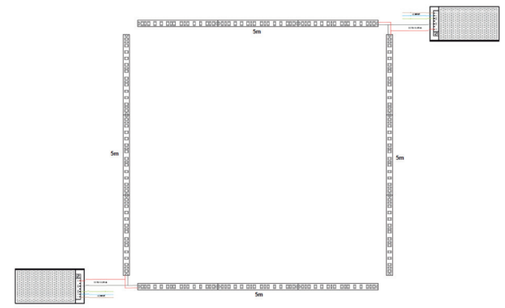


2. Installation basic monocolor+ strip

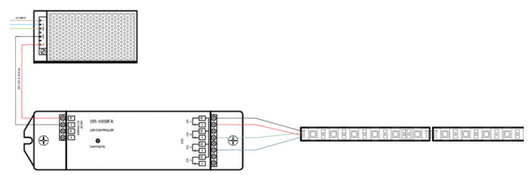
3. 4 monocolor strips in parallel installation



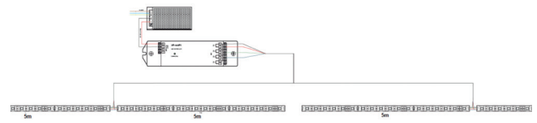
4. Installation of 4 strip lights making a Square shape



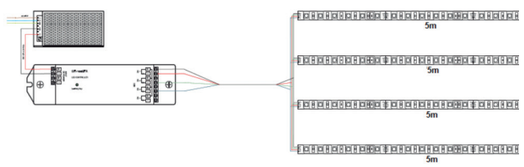
RGB LED STRIP



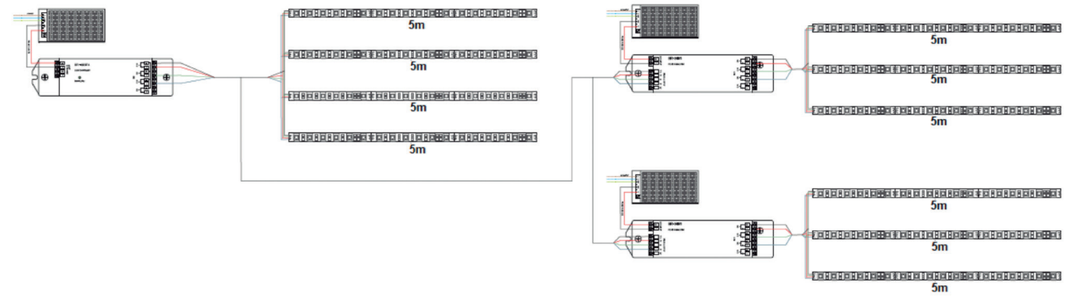
1. Installation of 4 RGB LED RGB



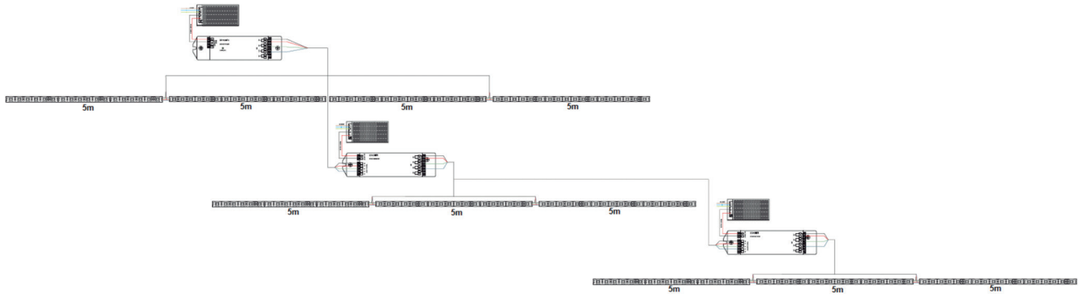
2. 4 RGM Led strips in parallel installation



3. Installation of more than 20 meters of Led strips. Type 1



4.Installation of more than 20 meters of RGB Led strips. Type 2.

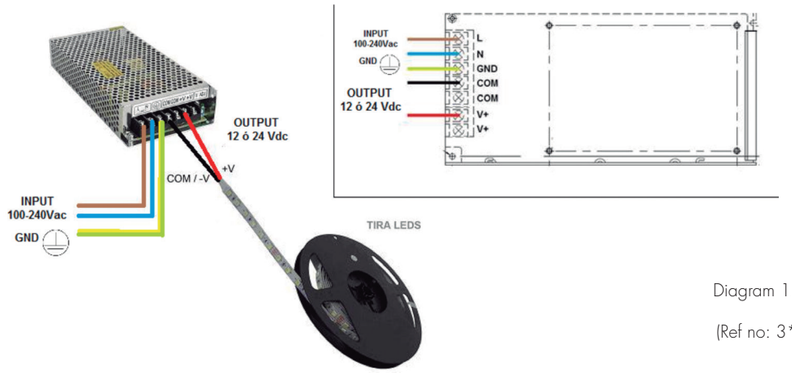


3. TECHNICAL INSTRUCTIONS FOR THE INSTALLATION OF LED STRIP POWER SUPPLY UNITS

- You must NOT connect the power supply to the LED strip without first checking that the voltages of both elements match. If this is not checked and the voltages are not the same, they may be damaged, the installations may overheat and result in greater damage. It is very important that this is clear and understood, as the failure to comply with this requirement may result in warranty invalidation. Normally, 12V or 14V LED strips are used and the power supplies must also be 12V or 14V respectively.
- We recommend the connection and location of the power supplies to be as close as possible to the LED strips in order to avoid unnecessary wiring and the possible voltage drops that this could lead to.
- We do NOT recommend using a cable longer than 1m from the power supply to the LED strip without calculating the possible voltage drops. Whenever you are going to make an order or connection with a longer cable length, you must calculate the voltage drops in order to avoid it causing substantial reduction in input voltage to the LED strip. When installing the power supply at a greater distance from the LED strip depending on the metres, you should increase the section of the cable exactly as is indicated below:
  - o 0.10 cm. to 1 m.: Cable section 0.25mm²
  - o From 1 m to 3 m: Cable section 0.50mm²
  - o Do not install at more than 3 metres without a previous study of the characteristics of the installation.

DIAGRAMS FOR CORRECT INSTALLATION

Standard power supply



NOTE: For more information, you can request technical data sheets of the selected product or check the website: www.jisoiluminacion.com.

Diagram 1. Standard power supply connection

(Ref no: 3***-2512V, 3***-2524V ó 3***-2924V)

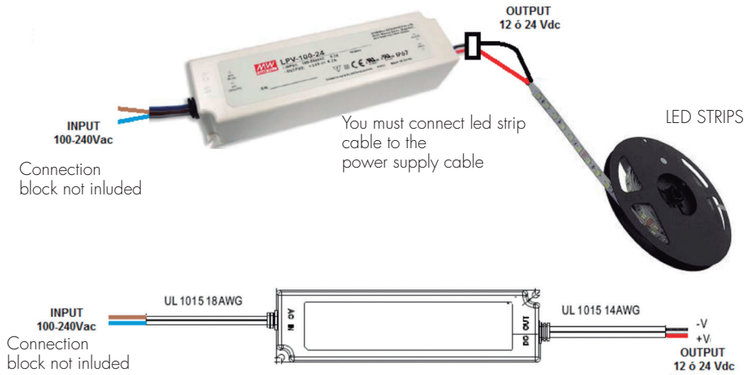
Compatibilities between power sources and LED strips depending on length

MODEL	POWER (W/m)	VOLTAGE (V)	≤ 1m		1m < L ≤ 2m		2m < L ≤ 3m		3m < L ≤ 4m	
			Standard	Dimmable	Standard	Dimmable	Standard	Dimmable	Standard	Dimmable
90004-2493	4,8	24	3015-2524V	3040-4524V	3015-2524V	3040-4524V	3025-2524V	3040-4524V	3025-2524V	3040-4524V
90004-2494	4,8	24	3015-2524V	3040-4524V	3015-2524V	3040-4524V	3025-2524V	3040-4524V	3025-2524V	3040-4524V
90009-2493	9,6	24	3015-2524V	3040-4524V	3025-2524V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V
90009-2494	9,6	24	3015-2524V	3040-4524V	3025-2524V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V
90014-2493	14,4	24	3025-2524V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3075-2524V ó 3075-2924V	3060-4524V	3075-2524V ó 3075-2924V	3060-4524V
90014-2494	14,4	24	3025-2524V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3075-2524V ó 3075-2924V	3060-4524V	3075-2524V ó 3075-2924V	3060-4524V
90014-249R	14,4	24	3025-2524V	n/a	3050-2524V ó 3050-2924V	n/a	3075-2524V ó 3075-2924V	n/a	3075-2524V ó 3075-2924V	n/a
90018-2493	18	24	3025-2524V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3075-2524V ó 3075-2924V	3060-4524V	3100-2524V ó 3100-2924V	3090-4524V
90018-2494	18	24	3025-2524V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3075-2524V ó 3075-2924V	3060-4524V	3100-2524V ó 3100-2924V	3090-4524V

• The adjustable power supplies, excluding reference numbers: 3040-4524V, 3060-4524V, 3090-4524V and 3120-4524V, can be adjusted using:

- 1-10V (if it is not connected to a switch controller you may not be able to operate the ON/OFF function)
- PWM
- Resistance

IP ≥ 65 Power supply

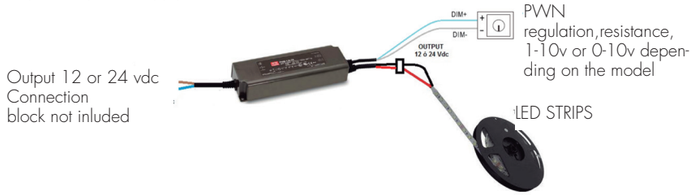


NOTE: For more information, you can request technical data sheets of the selected product or check the website: www.jisoiluminacion.com.

Diagram 2. IP > 65 Power supply connection

(Ref no: 3***-6512V ó 3***-6524V)

Adjustable power supply



NOTE: For more information, you can request technical data sheets of the selected product or check the website: www.jisoiluminacion.com.

Diagram 3. Adjustable power supply connection

(Ref no: 3***-4512V ó 3***-4524V)

4m < L ≤ 5m		5m < L ≤ 6m		6m < L ≤ 7m		7m < L ≤ 8m		8m < L ≤ 9m		9m < L ≤ 10m	
Standard	Dimmable	Standard	Dimmable	Standard	Dimmable	Standard	Dimmable	Standard	Dimmable	Standard	Dimmable
3050-2524V ó 3050-2924V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3075-2524V ó 3075-2924V	3060-4524V	3075-2524V ó 3075-2924V	3060-4524V
3050-2524V ó 3050-2924V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3050-2524V ó 3050-2924V	3040-4524V	3075-2524V ó 3075-2924V	3060-4524V	3075-2524V ó 3075-2924V	3060-4524V
3075-2524V ó 3075-2924V	3060-4524V	3075-2524V ó 3075-2924V	3060-4524V	3100-2524V ó 3100-2924V	3090-4524V	3100-2524V ó 3100-2924V	3090-4524V	3150-2524V ó 3150-2924V	3090-4524V	3150-2524V ó 3150-2924V	3120-4524V
3075-2524V ó 3075-2924V	3060-4524V	3075-2524V ó 3075-2924V	3060-4524V	3100-2524V ó 3100-2924V	3090-4524V	3100-2524V ó 3100-2924V	3090-4524V	3150-2524V ó 3150-2924V	3090-4524V	3150-2524V ó 3150-2924V	3120-4524V
3100-2524V ó 3100-2924V	3090-4524V	3150-2524V ó 3150-2924V	3090-4524V	3150-2524V ó 3150-2924V	3120-4524V	3150-2524V ó 3150-2924V	3120-4524V	3200-2524V Ó 3200-2924V	3120-4524V	3200-2524V Ó 3200-2924V	3150-4524V
3100-2524V ó 3100-2924V	3090-4524V	3150-2524V ó 3150-2924V	3090-4524V	3150-2524V ó 3150-2924V	3120-4524V	3150-2524V ó 3150-2924V	3120-4524V	3200-2524V Ó 3200-2924V	3120-4524V	3200-2524V Ó 3200-2924V	3150-4524V
3100-2524V ó 3100-2924V	n/a	3150-2524V ó 3150-2924V	n/a	3150-2524V ó 3150-2924V	n/a	3150-2524V ó 3150-2924V	n/a	3200-2524V Ó 3200-2924V	n/a	3200-2524V Ó 3200-2924V	n/a
3150-2524V ó 3150-2924V	3120-4524V	3150-2524V ó 3150-2924V	3120-4524V	3200-2524V Ó 3200-2924V	3150-4524V	3200-2524V Ó 3200-2924V	3185-4524V	3250-2924V	3185-4524V	3320-2524V	3240-4524V
3150-2524V ó 3150-2924V	3120-4524V	3150-2524V ó 3150-2924V	3120-4524V	3200-2524V Ó 3200-2924V	3150-4524V	3200-2524V Ó 3200-2924V	3185-4524V	3250-2924V	3185-4524V	3320-2524V	3240-4524V

•The adjustable power sources 3040-4524V, 3060-4524V, 3090-4524V and 3120-4524V can be adjusted using:

- 0-10V
- PWM
- Resistance

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