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

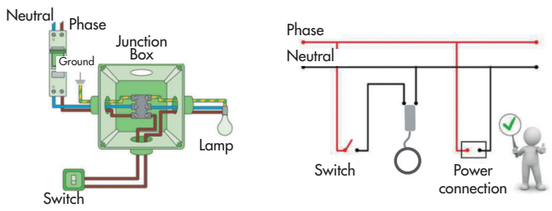
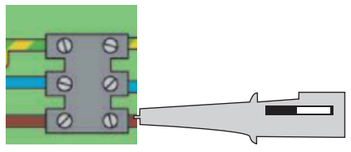


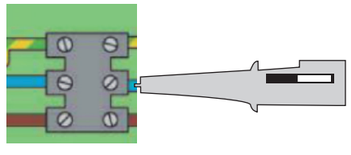
Image 1. LED luminary connection diagram + switch

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.



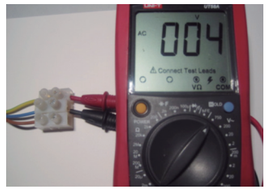
- In pole detectors, neither the neutral nor the earth triggers the neon light. And in the pole detectors with an LCD display, no voltage is indicated for the neutral or earth.



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).

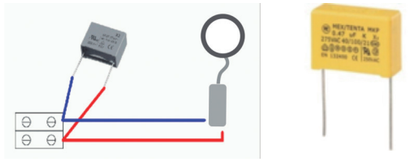
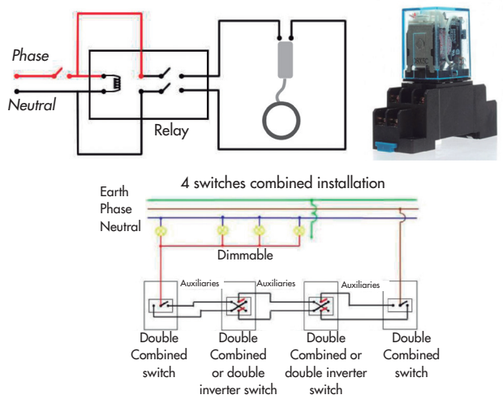


Image 2. Condenser REF. DCCONDEN-1

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.

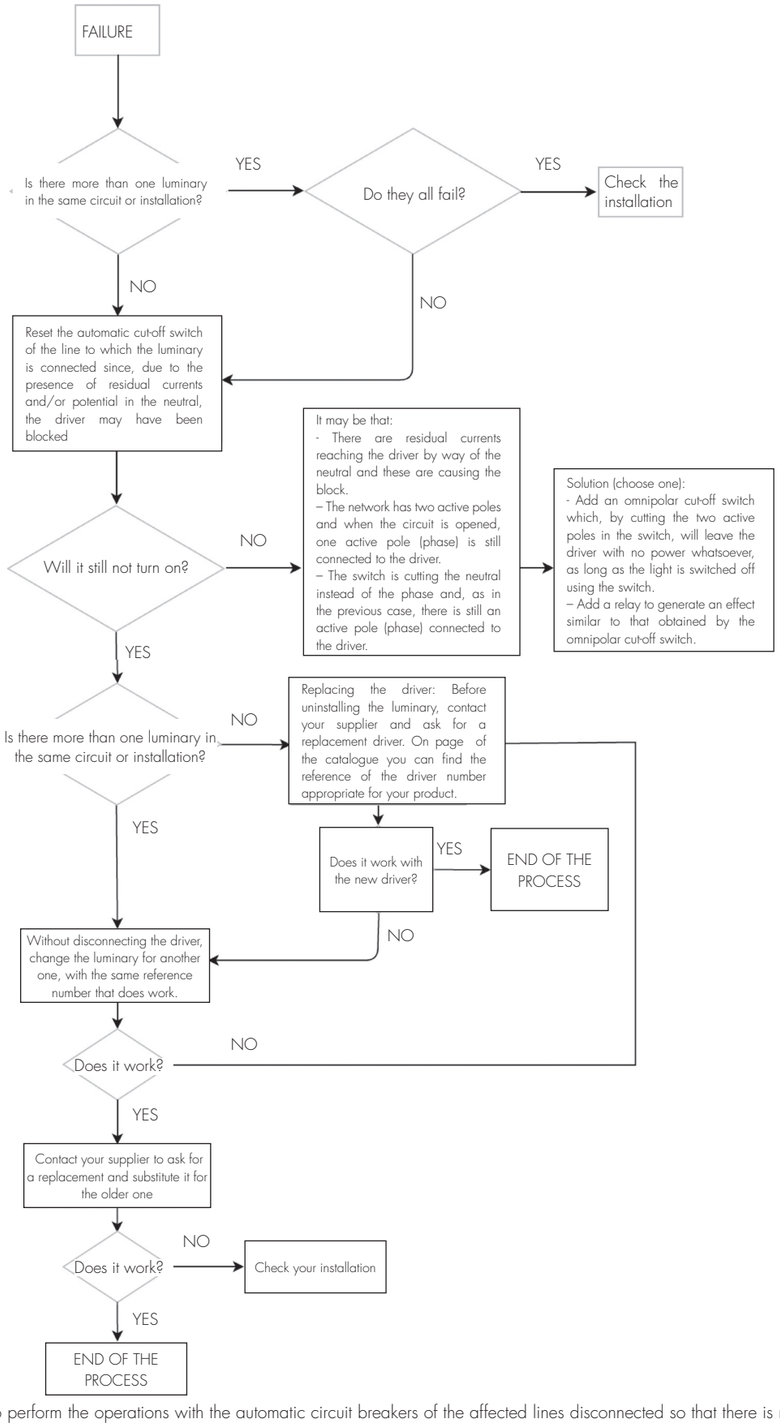
If you need a replacement driver or an adjustable driver compatible with any of the JISO ILUMINACIÓN, SL. luminaries, refer to the aforementioned table in order to request the reference number that best suits your needs.

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.)

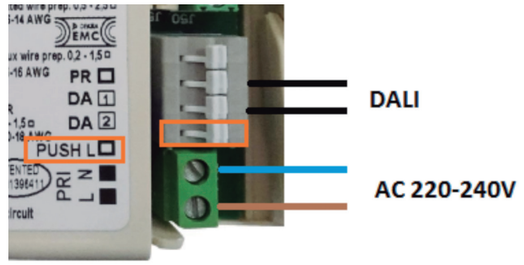


Image 4. Example of connection with driver 3025-43350

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.

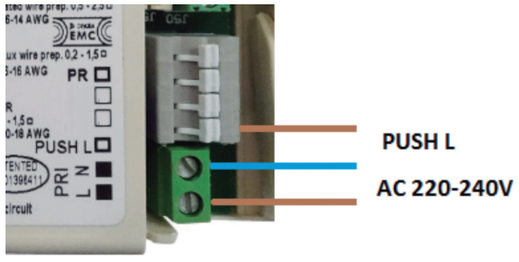


Image 5. Connection example with driver 3030-33MmA

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

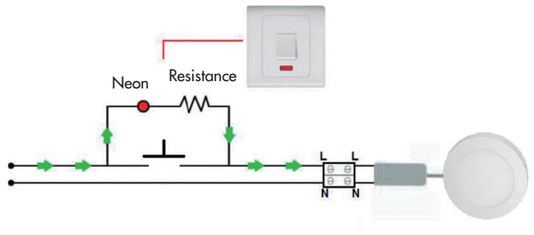


Image 6. Residual current due to push-button with indicator light

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.)

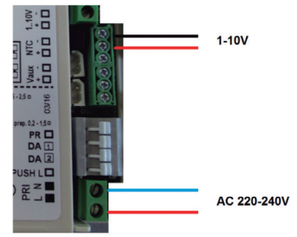


Image 7. Example connection with driver 3030-43350

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)

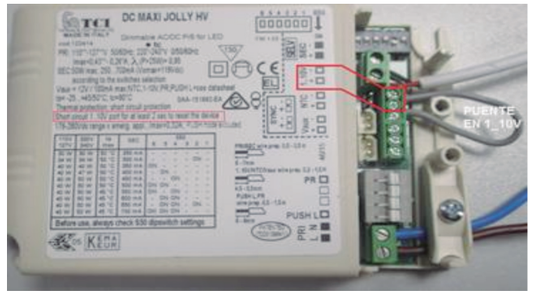


Image 8. Example connection with driver 3030-33MmA

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).

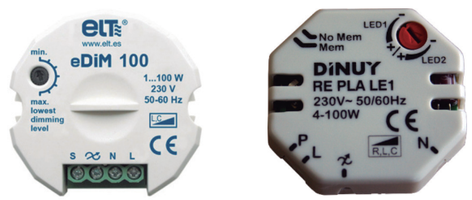


Image 11. Push-button control pads compatible with TRAILING drivers

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)

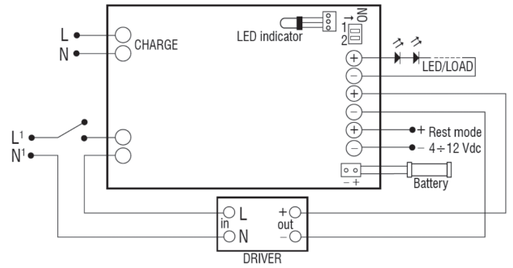


Figure 12. Connection diagram Emergency Kit for permanent use

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)

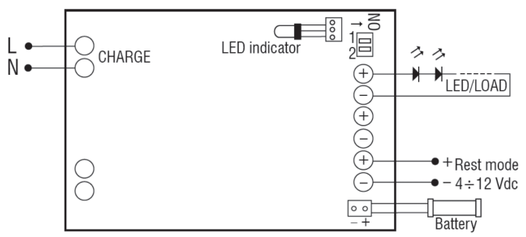


Figure 13. Connection diagram Emergency Kit for non-permanent use

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)