

Dimming lamps. A wonderful idea.





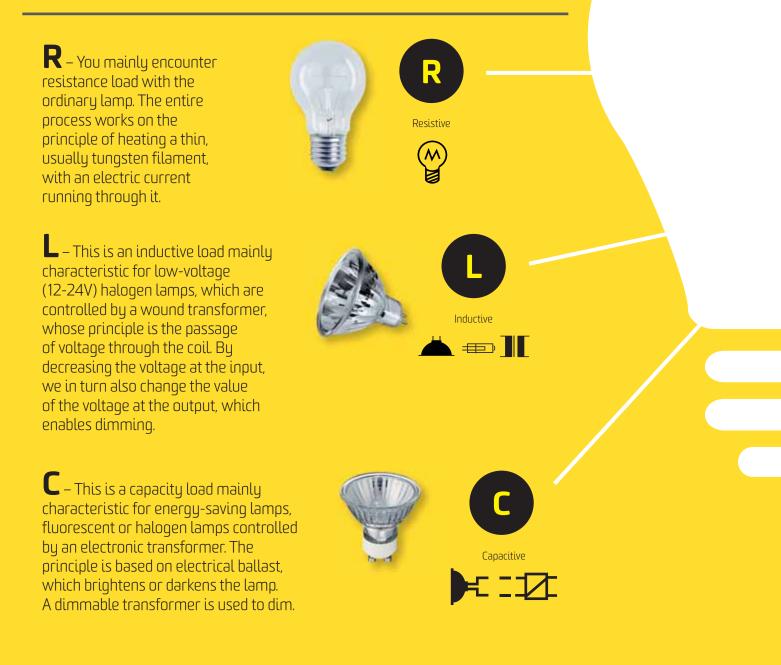




Dim it. Whatever you want.

Today we meet up with lots of types of light sources and it is relatively hard for the average person to keep up with all of them. Therefore, we will try to explain in the next section just what light sources you will find on the market, and how to control and/ or dim them. By dimming, you can save up to 20% of the electricity cost of lighting. Also, thanks to dimming, you can create a magical atmosphere - perfect for a party, reading or watching a movie...

Individual light sources differ from one another based on the principle of how they work - and we indicate them as a "load". Information on loads is important for selecting the right dimmer for your light.



Light-Emitting Diode

I FD



LED – A light-emitting diode (LED) is an electronic semiconductor component, which radiates a visible light. In the last few years, they have replaced the lamps in automobiles, streetlights and home appliances, and their popularity as active household illumination is constantly growing.

The basis of the LED is the P-N junction. The actual LED chip is often connected with a cooler for efficient removal of waste heat away from the chip, and is covered by an epoxy capsule. This design makes LEDs highly mechanically resistant. It is even more effective than a compact fluorescent lamp - and is up to 15x more efficient than a classic incandescent lamp.



ESL – Energy saving lamp, often called a compact fluorescent lamp. In its design it is a capacity load, but for better separability of this type of light source, a special designation was created for it. The principle is a glass tube with heating electrodes filled with mercury vapors, in which the discharge occurs. This falls upon the walls of the tube covered with a luminophore - and the lamp illuminates. Disadvantages of this lamp are its sensitivity to frequent switching and the luminous flux that decreases over time.

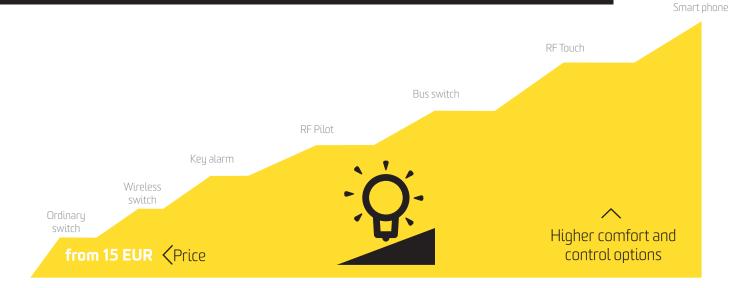
1-10V - This type of regulation is conditional to so-called dimmable electrical ballast with input for 1-10V. Consequently, at this input, the product is connected with the output 1-10V (RFDA-71B, LBC3-22M), which enables brightness control within this range. This mostly concerns dimming tube fluorescent lamps.

... ELKO EP dimmers can do the job

www.elkoep.com



Dim it. Whatever you like.



I require a lower price

1. Ordinary switch





Ordinary button

You control the lamp brightness by simply pressing the button. And it suffices only to connect the SMR-S to your existing electrical installation.



halogen lamp

ordinary

lamp

2. Wireless switch





Wireless switch RFWB-20

Place it anywhere in the apartment without having to cut or drill into anything - it is battery powered. Simply install the dimming actuator into the light fixture cover. RF



3. Key alarm





Using the key alarm RF Key, you can wirelessly control light, in which a dimming actuator is installed







I require higher comfort

4. RF Pilot



Wireless remote control with OLED display RF Pilot

This can control up to 40 light circuits, e.g. a lamp in the corner of a room using a dimmable socket. It enables creation of light scenes while watching a movie, reading a book or during a party, etc.



5. Bus switch



Intelligent switch WSB-40

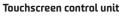
Smart solution that connects the switch with the iNELS electrical installation. Your home then reacts to you. And that is just the beginning.





6. RF Touch, EST





The touchscreen unit can control a group of lights wirelessly using RF Touch or a bus solution using the EST unit. With one touch, you can adjust the brightness of over 10 lights, and each one can have a different intensity.

EST and RF Touch are the size of a classic switch.



7. Smartphone



Smartphone

It suffices to have a smartphone or the iPhone application iNELS Home Control, with the help of which you can control lights individually or in a group.





We can adjust control of lamps to your needs. **Select from a wide range of dimming methods.**



Energy savings and solutions for you.

Dim it. Save up to 30 % energy on lighting.



Requirement:

<u>I want the cheapest dimmer for my</u> <u>apartment</u>

Solution:

get the SMR-U and connect it to your existing button

How to do it:

Install the dimmer in the installation box under your existing button. If you have a switch, you must replace the gadget with a push-button type.

How much will you save?

If you have 10 halogen lamps at home with a consumption of 40 W and you are using them 2 hours per day on average, you consume 292 KWh in a single year – a cost of roughly CZK 1,460.

If you get an SMR-U dimmer for CZK 696, you will decrease your costs by 30% thanks to dimming. In doing so, you will save CZK 438 per year, and the investment will return to you in a year and a half This does not include the added value enjoyed from creating a lighting atmosphere for watching movies, listening to music or reading.

Requirement:

<u>I want to maintain the same light</u> intensity in the room

Solution:

get the automatic lighting intensity controller LIC-1, and you do not have to keep checking your employees to see if they

How to do it?

Connect the product to your existing button (you need not cut into anything), from which you will control brightness or switch to an automatic mode.

How much will you save?

If you have a $40\overline{W}$ lamp on for 8 hours for 200 days per year = 64 KWh = CZK 384...and you have 10 of these lamps in a single office, that equals CZK 3,840.

If you use an automatic lighting intensity controller LIC-1, the intensity of the light remains just where you set it. This means if the sunshine is illuminating a room with high intensity, the lamp automatically lowers the brightness. In this way, you can save up to 50% of costs equaling CZK 1,600 for one office.





Dimming is not just a style. It also means savings.



Requirement:

<u>I want to dim a lamp in the living room</u> <u>corner</u>

Solution:

Get the SET of a dimmable socket and key alarm

How to do it?

You simply slide the dimmable socket into the existing socket. Then by entering the programming mode, you will assign the key alarm and that is it. Immediately you can thus create a pleasant atmosphere for reading a book or watching a movie.

You can always expand the iNELS RF Control and you will constantly have a single system for controlling the home instead of five controllers.





Set RFWB-20 + RFDA-11



Requirement:

<u>I rebuilt the bathroom but I forgot to</u> <u>install a switch</u>

Solution:

Get the set combining a wireless switch with a dimmer

How to do it?

Glue the switch to any desired location, connect the actuator to the light and everything is ready in just fifteen minutes. You have also just given yourself the option of dimming the lights. You can always purchase another actuator, which will be compatible with your wireless switch.

How much will you save?

Normally you would have to remove a tile, create grooves for the cable, connect the light fixture, smooth out the grooves, and replace the tile and grout. This takes a whole day and is costly.

Our solution altogether costs CZK 1,724, and features the option of implementing further iNELS actuators, which lead to savings.



We create ambiance with a play of lights



Requirement:

I want to control lights in a cinema, shopping center, bar or sports center

Solution:

get the performance dimmer DIM-6

How to do it?

Since this concerns a performance dimmer requiring technical knowhow, contact an electrical installation company, which will obtain the product and install it for you. Do not forget to choose the method of control (button, potentiometer, 1-10V, iNELS BUS).

The dimmer DIM-6 has in its base a load of 2 kWA, this output however can be set up to 10 kWA in conjunction with the power expansion module DIM-6-3MP.

works together in the classic way = button control
wirelessly = using the analogue actuator RFDAC-71
by the bus solution iNELS BUS = terminals for bus connection

Requirement:

I want to control lights in a group and create light scenes

Solution:

<u>get one of the applicable controllers:</u> <u>RF Pilot, RF Touch, EST, smartphone</u>

How to do it?

Using the price offer configurator (www.elkoep.cz/reseni), you create your price calculation for the installation. Send the inquiry to the address in the configurator. Within two working days, an ELKO EP technician will respond to you to specify the order details. He or she will recommend a system partner to perform the installation. All system partners are expertly qualified and trained in installing the iNELS system.

- 1. wireless remote control in combination with iNELS RF Control dimming actuators
- 2. touchscreen control of the RF Touch unit in combination with iNELS RF Control actuators
- 3. bus touchscreen control unit in combination with iNELS BUS System actuators
- 4. your smartphone + our smart box in combination with iNELS Smart Home Solutions actuators

What you need: RF Pilot,



What you need: RFDA-73/RGB,



Requirement:

I want to control LED strips in the living room using my smartphone

Solution:

Get the dimmer RFDA-73/RGB with the "smart box" eLAN-RF

How to do it?

Install the dimmer RFDA-73/RGB according to the length of the LED strip that you want to control (offered at eshop.elkoep.cz).

Install the LED strip and connect the dimmer RFDA-73/ RGB, which you will place into the switchboard in the ceiling. Connect the smart box (eLAN-RF-003) to your router and perform network setup.

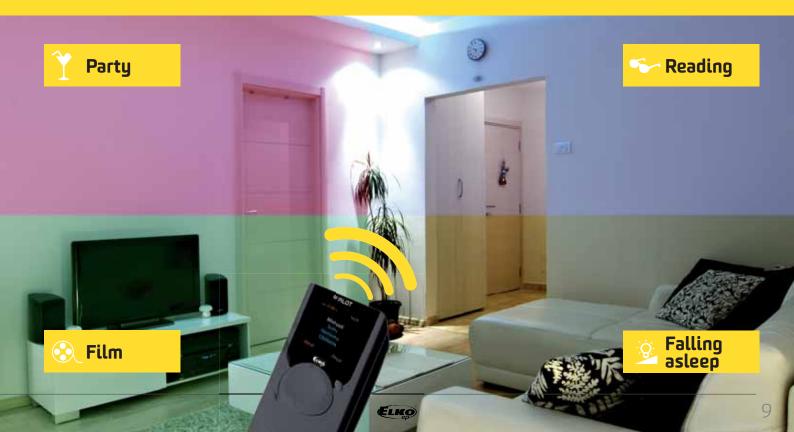
Download the free application iHC-MARF at Google.play, or iHC- MIRF from iTunes. Install the application in your smartphone and pair it with the introduced actuator using the address on it. Control color, brightness, groups, scenes...it is up to you!

Dim it. And enjoy yourself.

Alter the illumination in your household so that it always fits with the current film scene or the music that is playing. With a single press of a button, you control lights and adjust the brightness in the entire home.

The solutions from ELKO EP always feature an elegant design with flawless function, and that brings users perfect control when regulating home appliances and equipment. Now we offer control of LED strips and RGB LED strips, enabling a comfortable selection of colors and brightness adjustment. The Light Scenes mode enables group control of receivers, which dims lights with a single press of the button automatically to 30 %, the shutters roll down and the LED strip lights up in the chosen color based on how you want to create it.

Do you like horror films? Bathe your living room into some decent light scene and let the LED shine in dark colors... On the contrary, conjure up rainbow scenes with intense colors while watching fairytales.





Solution:

classic solution that can be added simply to your existing electrical installation

When purchasing a dimmer from ELKO EP, you will certainly look forward to sunset.

That is because you will be shown for the first time what your lights can do:

- » universal solution for all light sources
- » fuse-protected against surges and short circuits
- » elimination of a flashing light source by built-in protection against voltage fluctuation
- » option of setting minimum brightness
- » custom-control the network





SMR-S

R, **L** dimmer for mounting under button with three-wire connection (without NEUTRAL) SMR-S is a dimmer controlled by the existing button (under which it is also located) for controlling ordinary lamps and halogen lamps (with wound transformer). It is the most affordable from the series of dimmers with simple assembly. You turn the light on or off by clicking the button, by holding you regulate brightness. After the set value and switching back on, the light intensity returns to the brightness last set. The device is protected by a replaceable fuse. Its advantage lies in its connection, where there is no connection of a neutral wire, which makes it the right choice for mounting in older installations as well.



SMR-U

R, **L** dimmer for assembling under button with four-wire connection SMR-U is a dimmer controlled by the same principle as the previously mentioned SMR-S = clicking to switch on/of - holding dims. It has one extra quality however, which is dimming capacity loads = halogen light sources with an electronic transformer. It also has implemented protection, where the dimmer shuts off upon a short or surge. It can handle almost 200% of the load that the SMR-S can.

300 VA







500 VA





DIM-15, SMR-M

Dimmer for LED lamps and dimmable energy-saving lamps

DIM-15, SMR-M are dimmers designed especially for control of LED light sources and energysaving lamps (dimmable). The difference in them is only in the installation method. SMR-M is designed for installation below the button (into the installation box), DIM-15 is designed to be mounted on a DIN rail to your distributor. These dimmers have several qualities that rank them amongst the best on the market:

- **1** Option of setting the minimum brightness of the lamp which eliminates flashing.
- 2 It features built-in protection where the light source will neither flash nor change brightness upon fluctuation of the input voltage. This dimmer is best applied in a house, apartment or office.

DIM-6

Dimmer for dimming lamps and halogen light fixtures

DIM-6 is a dimmer designed to handle dimming of a light source with output up to 2,000 VA. And if that were not enough, using the auxiliary power module (DIM-6-3MP), this can be expanded up to 10,000 VA. There are several ways to control it: 1, button 2, potentiometer, 3, signal 1-10V 4, iNELS BUS system. The dimmer has a built-in fan - a necessity when handling such outputs. The load capacity is determined for light sources R, L, C and features electronic protection against surges and short circuits. It is designed for assembly in switchboards, and in practice it is most frequently found in cinemas, shopping centers, bars, restaurants and offices.

DIM-6-3MP - expanding output module to the product DIM-6



Lighting intensity controller

LIC-1 is a dimmer at the highest dimming level. It can autonomously adjust the brightness of a lamp to the required lighting intensity in the room. It will never happen again that you forget a light on, needlessly burning both energy and money. It is especially appropriate for offices, restaurants and indoor public places. To be utterly inconspicuous, it is designed for installing in a switchboard. The sensor that senses the lighting intensity in a room is located in the ceiling or on the wall, and anywhere that it will not be influenced by a different light source. This dimmer is universal, i.e. you can connect any light source to it.



Classic. But modern.



Everything works just they way you are accustomed to. Pressing the button turns on the light, and pressing it again turns it off. Meanwhile, it remembers the set level of previous lighting and again provides the same level of brightness.





glass



ARBORE wood



METALLO Noble metal

ELKO



Solution

wireless dimming with iNELS RF Control is the right solution when reconstructing an apartment, house, room, etc.





RFDA-71B

Dimming RF actuator with 7 programs

is a dimmer from the series iNELS RF Control, which you can include in your electrical installation at any time without tearing into walls or performing other modifications. Why is it so easy? The dimmer communicates with the wireless switch completely without cables using RF technology. Its design makes it appropriate for mounting into an installation box, ceiling, light fixture cover, etc. It is designed for light sources R,L,C, i.e. ordinary incandescent lamps and halogen lamps.





RCR

RFDEL-71B

Dimming actuator for LED lamps and dimmable energy-saving lamps

This dimmer communicates with all wireless transmitters of iNELS RF Control (switch, key alarm, remote control, touch unit, etc.). It is the most universal in terms of use of a light source (loads R, L, C, LES, ESL), but also in terms of installation (everywhere the installation permits). It can simulate the smooth increase or decrease of the light (at times of your choosing), which you will use to create light scenes. Another advantage of this dimmer is the option of combining it with an existing button.

RFDA-73M/RGB

Dimming actuator for LED strips and RGB LED strips

This dimmer is designed to control up to 3 independent, single-color LED strips and RGB LED strips, where it is possible to change color, brightness or switch to an automatic color blending/fading mode. Control is performed using the remote controller RF Pilot, a touchscreen control unit or even an application in your smartphone. The dimmer can be grouped with other dimmers of the same character, thus creating light scenes both for rooms and for the entire home.





RFDAC-71B

Analogue RF actuator for smooth regulation

This dims ordinary tube fluorescent lamps that are controlled by a so-called dimmable ballast, which has an input of 1-10 V, to which you connect this product. The result is brightness control of the fluorescent lamp in a range of 10-100%. The product enables light scene creation and is controlled wirelessly using all controllers. iNELS RF Control (touchscreen unit, wireless controller, key alarm, Android application, etc.). Its design makes it useful for installing in a ceiling or light fixture cover.





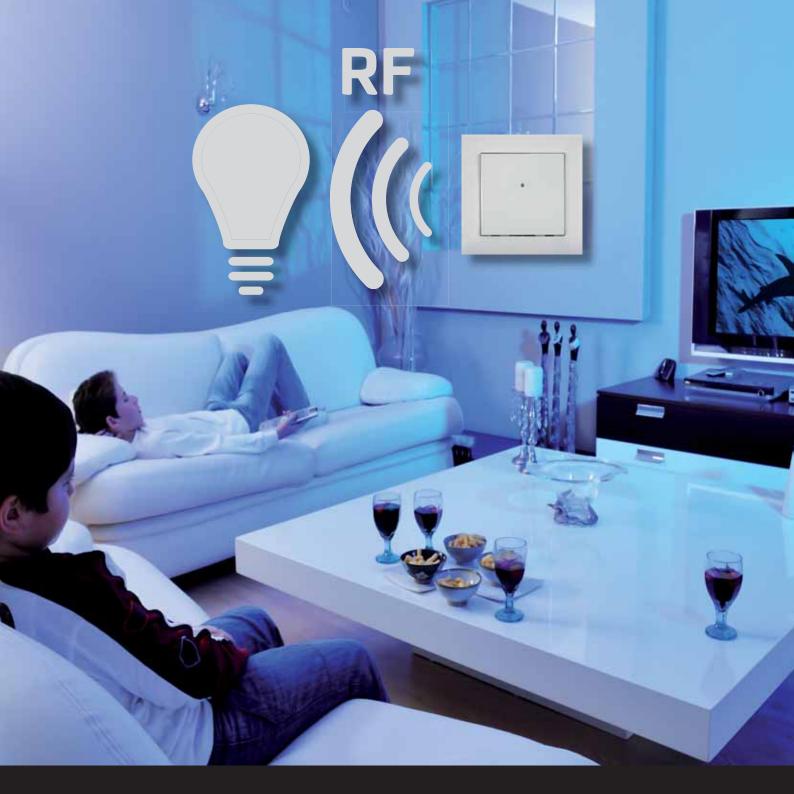
RFDSC-11/71

Wireless dimmed socket

The dimmer with the socket design is a unique and the simplest solution of turning your corner lamp into something much more. It enables you to control brightness of the lamp or create light scenes (smooth light dimming/brightening). At any time, you can assign this dimmer to other dimmers of the series iNELS RF Control and control everything with just one controller. This dimmed socket is universal in terms of light sources. It also features built-in protection against surges or short circuits.

12





No wires, no cutting.

The iNELS RF Control wireless communication system represents a unique wiring solution for home reconstruction. Installing the wiring is easy and requires no demolition or cutting into walls. Actuators may be installed directly in the wiring box, in a light cover, switchboard and anywhere else the wiring system permits.



Solution

wireless, bus solution iNELS BUS opens up a new dimension in home automation





DA3-22M

Universal bus dual-channel actuator

This dimmer is of course universal, so it is possible to connect it to any light source. The dimmer is designed for installation on a DIN rail (= in the switchboard), and can run two utterly independent light circuits up to a load of 400 VA. This dimmer is of course universal, so it is possible to connect it to any light source. To avoid unpleasant flashing of light sources, we have given it the built-in option of setting the minimum brightness (to eliminate this phenomenon). Control is performed using bus buttons, an application or via the iMMM multimedia center.



LBC3-02M

Dimming two channel actuator for fluorescent lamps

This is designed for control by the iNELS BUS system to control tube fluorescent lamps that are connected to dimmable ballast. These dimmers can be grouped into a number of 576 units in a single system, which predetermines it for extensive implementation in halls, offices, shopping centers, cinemas or restaurants (any place using fluorescent lamps). You can control it with a single command via the PC or independently of each other, in groups. You can also use applications for Android or iOS, bus switches or the iMM multimedia center.

HOW MUCH DOES THE INELS SYSTEM COST?



Using the configurator, it is simple and fun to create a price offer.

http://www.elkoep.com/solutions/

ELKO



Comfort without limits.

The intelligent electrical installation system iNELS BUS is the most comfortable and highest level of home automation. The system controls heating regulation, lighting, roll blinds and other appliances, and can secure your home and protect your property. It can recognize changes in functions of the system against the required status, and inform you of these changes by mobile phone or Internet.

LED light sources that save.

ELKO EP has always strived for maximum universal application of the products it manufactures. The dimmers DIM-15, SMR-M,LIC-1, RFDEL-71B and RFDSC... these are a practical example of this - in terms of the breadth of applicable light sources. And since the area of dimmable LED lighting – just like dimmable energy-saving lamps - is a relatively new advancement and there are still just a few manufacturers to produce these light sources, we will regularly test and expand the table provided below to include further types of tested lights. We welcome your input - tell us about new types of tested lights on the market!

Overview of tested types of light sources and their loads

Light sources of ELKO Lighting	Socket	Dimmable	DIM-15	SMR-M	LIC-1	RFDSC-11 RFDSC-71	RFDEL-71B
ELKO Lighting DLB-806-2K7	E27	yes	30 pc	16 pc	30 pc	30 pc	16 рс
ELKO Lighting LED DLSL-GU10-250-3K	GU-10	yes	50 pc	26 pc	50 pc	50 pc	26 рс

Other types of tested light sources can be found here: www.elkoep.cz/reseni

Classic-shaped LED lamps



Special-shaped LED lamps



ELKO









Luminious flux: 6000 Lm



It will brighten up your ideas



Ultimately, illuminate yourselves!

www.elkolighting.cz



We can dim anything!

	SERIES PRODUCT	PRODUCT		AUTOMATIC LOAD DETECTION	EAN CODE	R B	L DE CINE low voltage lamps 12-24 V wound transformers	C low vol 1: electric
DIMMERS CHART	ELECTRONIC DEVICES		DIM-2 - Staircase switch with dimming, gradual brightness increase/decrease, 500 VA	-	8595188112475	~	~	
			DIM-5 - Dimmer - short press ON/OFF, pressing and holding dims, 500 VA	-	8595188115612	✓	✓	
			DIM-14 – Like DIM-5, also suitable for loads L. Dims loads R, L, C	~	8595188135955	✓	~	
			DIM-15 - Dimmer for LED lamps and dimmable efficient fluorescent lamps, potentiometer brightness setting	-	8595188140690	-	-	
			DIM-6 - Expandable power module for increasing output of connected load to DIM-6 by 1kVA	-	8595188139106	✓	✓	
			SMR-S - Like DIM-5, pushbutton control, for mounting into KU68, dims by pressing and holding button, 300W	-	8595188123518	✓	✓	
			SMR-U - Like DIM-14, pushbutton control, for mounting into KU68, dims by pressing and holding button, 500W	~	8595188130738	✓	✓	
			SMR-M - Like DIM-15, pushbutton control, for moun- ting into KU68, LED dimming and dimmable efficient fluorescent lamps	-	8595188143776	-	-	
		Ŷ	LIC-1 - Dimmer maintaining set light intensity in Lx, including SKS photo-sensor	-	8595188144933	✓	✓	
	WIRELESS SOLUTION		RFDA-11B - Dimming actuator basic program light scene, OFF function	~	8595188136846	✓	~	
			RFDA-71B - Dimming actuator - 7 programs, 4 lighting scenes, sunset and sunrise simulation, ON/OFF	~	8595188136273	~	~	
			RFDEL-71B - Dimming actuator - 7 programmable functions, 6 light functions, ON/OFF function	-	8595188145121	✓	✓	
			RFDAC-71B - Analog actuator - 7 programs, 6 light functions, ON/OFF function	-	8595188142809	1 x Output O/	′1-10 V =∎	
		V	RFDA-73/RGB - Dimming actuator for RGB dimming sources	_	8595188146814		-	
	N		DA3-22M-V2 - Dimming double-channel actuator 2 channels (500W/channel), 2 x 230VAC IN, Thermo input	~	8595188132626	✓	~	
	BUS Solution		LCB3-02M - Dimming double-channel actuator 2 x relays, 2 x 1 - 10 V	_	8595188132688	2 x Output 0/	′1-10 V =∎	

	ESL EED						
		LED CATEGORY 1 CATEGORY 2 CATEGORY 3					
ltage lamps 2-24 V transformers	Efficient dimmable fluorescent lamps	Mostly "multiple LED" illumination sources, power provided by LINEAR source limiting current (sharper dimming), lower price.	Sources that have 1-3 power LEDs, power provided by SWITCHING the source regulating brightness based on the input voltage (smoother dimming), higher price GUIO have a higher body	CATEGORY 3 LED with DC and current regulation. Designed fordimming LED chips, LED strips, RGB LED			
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