

# DDSR 12

DIGITAL POWER CONTROL UNIT  
“DIMMER SWITCHER”



## PASSPORT AND INSTRUCTION MANUAL

Russia. Moscow 2022

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# 1. INTRODUCTION

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Thank you for purchasing the digital power control unit “dimmer-switcher”  
DDSR 12.

The power control unit is manufactured in accordance with TU 9683-001-68164894-2015.

Registration number of the declaration of conformity: EAEU RU Д-РУ.ВЯ0.В.16423.

Made in RUSSIA.

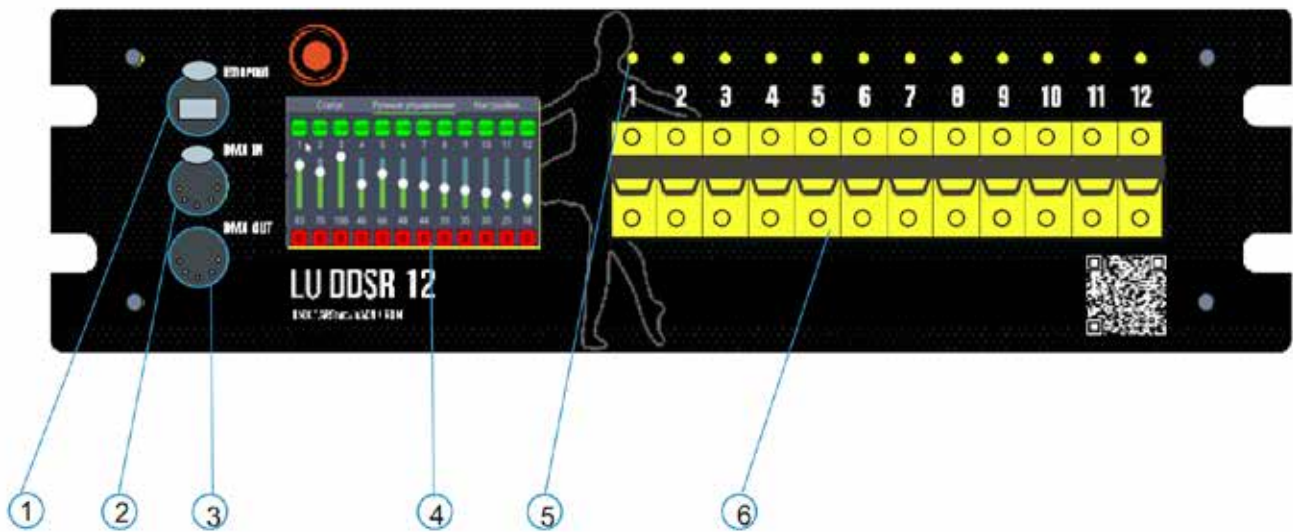
Please read this manual carefully before using the instrument.

## MAIN FEATURES OF DDSR 12:

- 12 channels of 3 kW each, working in dimmer-switcher mode.
- Configuration and management can be done using the LUnet Manager program  
The program can be downloaded at <https://www.equivalent.pro/catalog/control-systems/light-control-programs-for-pc/lunet-manager/>.
- Management is carried out according to the protocols DMX-512 1992, sACN, Art-Net, with support RDM, as well as manually, using the touch indicator and through the web interface.
- There are 3 basic control methods (each channel is configured separately).
  - “**Dimmer**” - the use of a channel for smooth adjustment of the power of the final dimmable devices.
  - “**Relay**” - devices will be in one of 2 states - ON, or TURNED OFF.
  - “**Jointly**” more economical method, less heat generation. Is used for devices that operate at maximum power for a long time. At reaching the maximum power, the triac turns off, the relay turns on.
- It is possible to set the operating mode for each channel. The operating mode determines the curve of change in the power supplied to the load, relative to the control level, in including:
  - “**Power**” - the power changes in proportion to the signal level;
  - “**Voltage**” - the voltage changes in proportion to the signal level;
  - “**Angle**” - the power at the load changes linearly in accordance with the specified “angle”.
  - “**LED**” - the power on the load changes linearly, in proportion to the level control signal, while, at the moment of switching on, the load is supplied with a minimum power for stable operation of LED lamps (no flashing). This mode used to dim LED lamps that support this mode. Dimming is performed from 20% to 100% of power;
- Touch display and convenient operation in the “Manual control” mode.
- Continuous operation at maximum load.
- Setting the levels of heating, power limitation, individual settings for each channel.
- Static mode.
- Smooth start.
- Ability to set the DMX address for each channel.
- Hold the last value when the control signal fails or go to static mode.
- Choice of menu language.
- Temperature indication.
- Overheat protection.
- Protection of each channel against short circuit and excess of rated current.
- Noise suppression filters at the outputs.

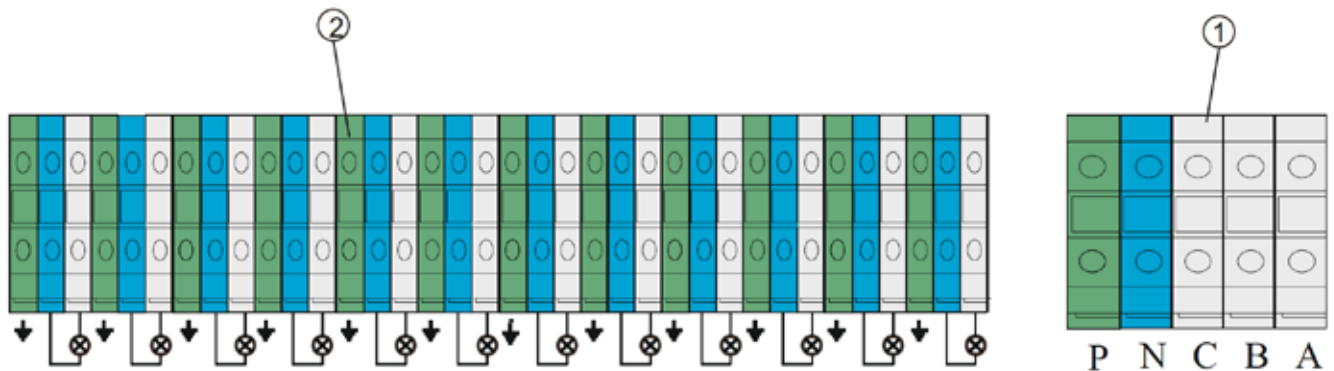
## 2. CONTROLS AND INDICATORS

### CONTROLS ON THE FRONT PANEL



- 1.ETHERNET input
2. DMX output
3. DMX input (galvanically isolated)
4. Touch display
5. Load monitoring LED indicators.
6. Automaton

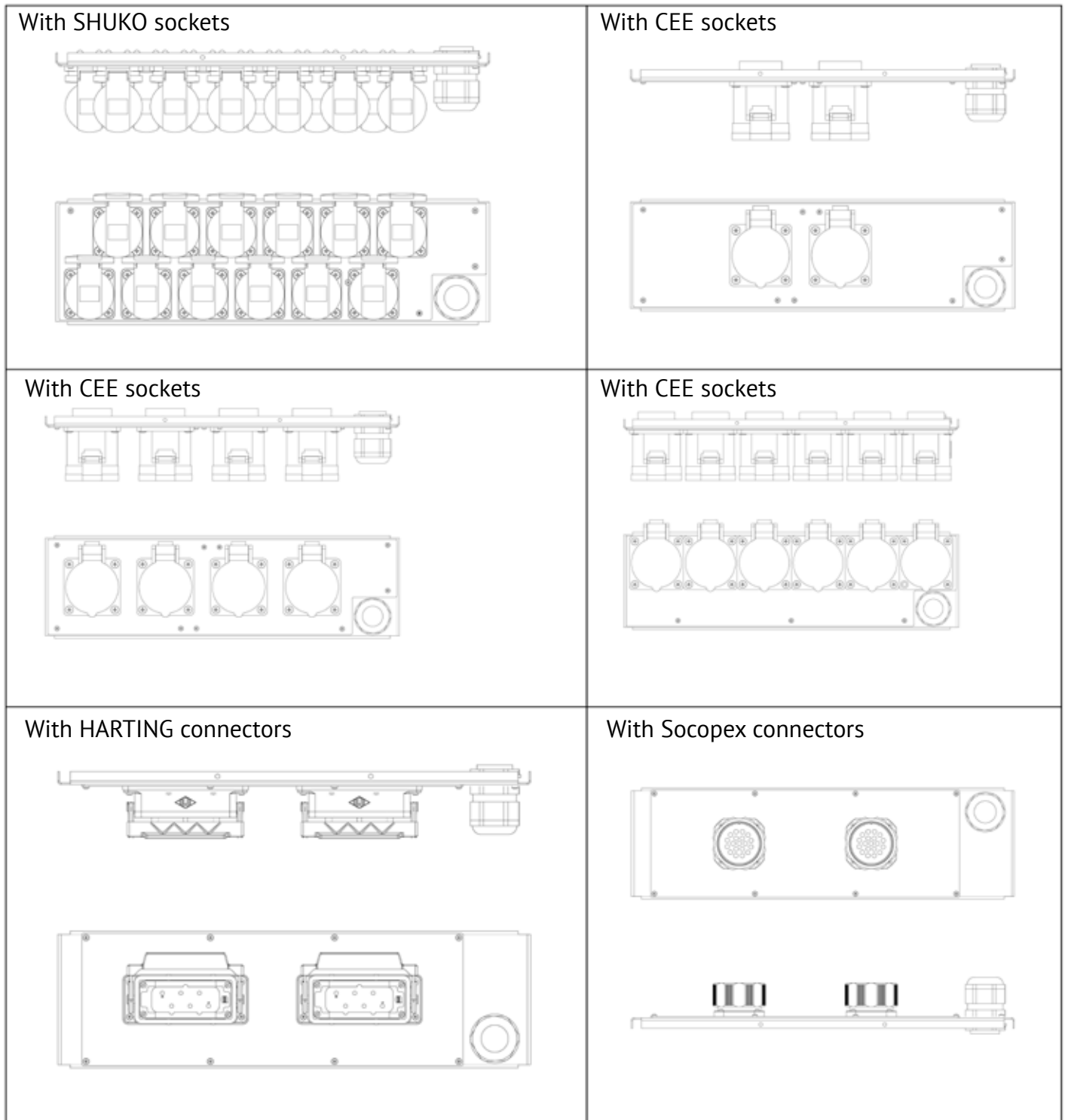
### POSITION OF INPUT AND OUTPUT TERMINALS ON THE BACK PANEL.



1. Input terminals
2. Output terminals

## OUTPUT PATCH PANEL.

As standard, the dimmer is equipped with a patch panel with terminals (see above). At the request of the customer, various options are available:  
Custom patch panel options:



### 3. INSTALLATION AND CONNECTION

Unpack the instrument and remove all packaging materials. Install the device in rack 19" or horizontally on a smooth surface, leaving free ventilation holes in the case. Connect loads on the back panel.

**Do not connect loads to a common neutral.**

Use NEUTRIK connectors NC3(5)... and NE8... to switch the line DMX and ETHERNET controls.

**1. Connection must be made only when the voltage is removed using qualified personnel.**

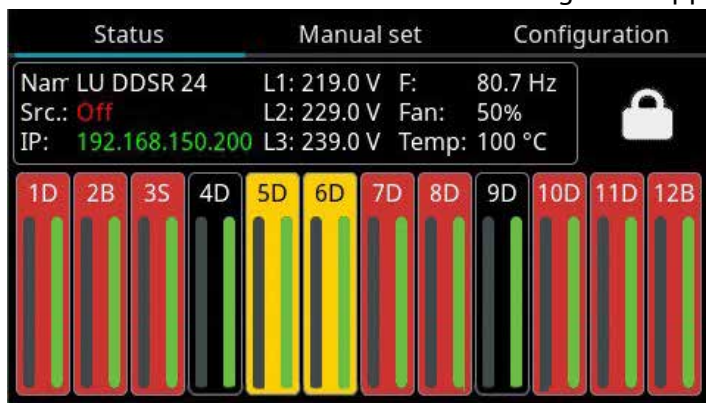
**2. It is necessary to ensure free air circulation near the ventilation openings.**

Apply voltage to the device.

### 4. OPERATING MODE

When you turn on the device, the screen saver with the logo of the company will appear on the display for a few seconds, then the device will go into OPERATING MODE – the main state of the device when operation.

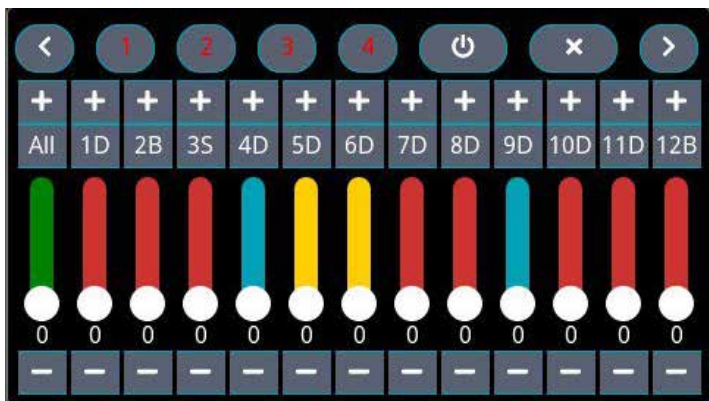
Information with current data and settings will appear on the screen:



#### THE DISPLAY SHOWS THE FOLLOWING INFORMATION:

- 1. Device name:** Device name, may vary depending on output channel power and patch panel options.
- 2. Source:** ART, (DMX, sACN) Displays the control protocol (source)
- 3. IP:** IP address when controlled by sACN and Art-Net protocols.
- 4. Fan:** 50% fan speed.
- 5. Temp.:** 100°C, – operating temperature inside the device.
- 6. Blue and green bars** are a graphical display of input and output levels of all channels, for operation control. If the input and output signals are zero, there are no bars on the display.
- 7. Channel color informs:** **red** - there is no channel supply voltage; **yellow** - supply voltage is on, there is no load; **black** – appliances connected, they can be controlled.
- 8. Inscriptions 1D, 2C, 3R ..... 12D indicate:** numbers 1, 2, 3 ... 12 – channel number, letters D, C, R - control method – “dimmer”, “jointly” and “relay”, respectively.
- 9.** To work with the display, press and hold the key button for 5 seconds until removed blocking. After finishing work with the display, within 20 seconds the display will again disabled, the button will turn red again.

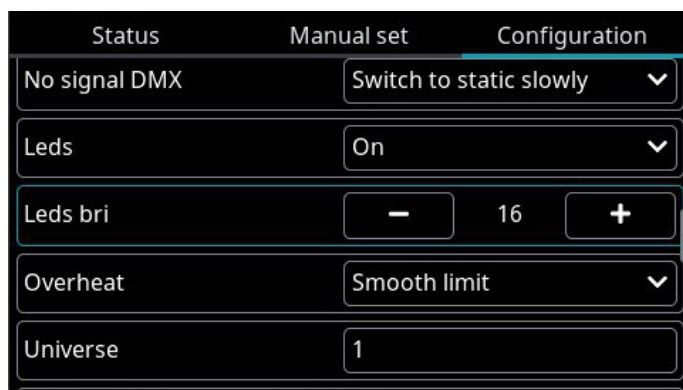
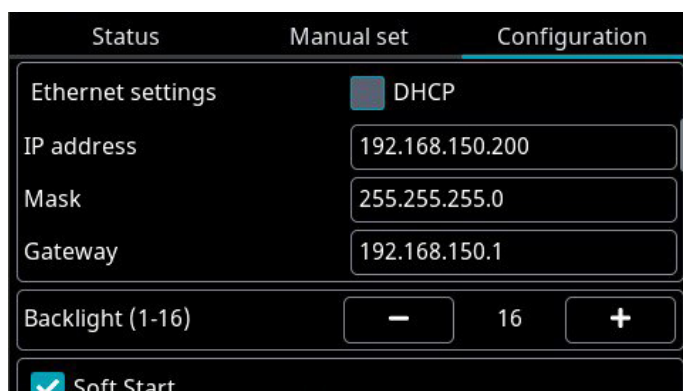
To switch to manual control, press the “Manual control” button on the display. Press the “POWER ON” button. The control panel will appear. Press the button, it will light up green . The board is ready to work.

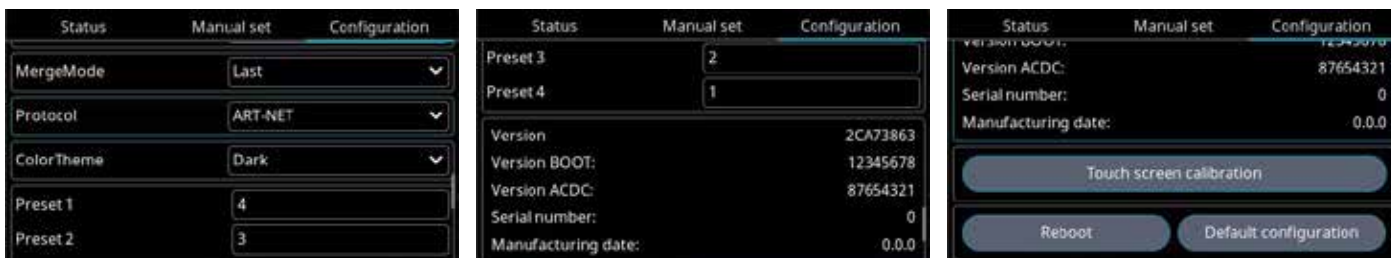


On the remote control (touch screen display) set the required signal levels at each channel. You can set signal levels by moving the white dot, or by briefly pressing “+” or “-” until the desired result is obtained. The maximum (100%) and minimum (0%) signal level can be set by pressing and holding buttons “+” and “-” respectively. To exit the “Manual control” mode, you must press the button . When the button is pressed, the LSD switches to the “Status” mode and we see the main parameters of the dimmer switcher, while it remains in “Manual control”, until pressing the button. In manual control mode, we can pre-record 4 different states of the dimmer switch (“presets”). For recording, when off remote control state , set the required levels of all 12 channels and briefly (until it turns green), press one of the 4 buttons. To play press one of the same buttons with the remote control turned on

## 5. MENU (DIMMER SETTING)

Entering the menu mode is carried out by pressing the “Settings” button. On the display will display:



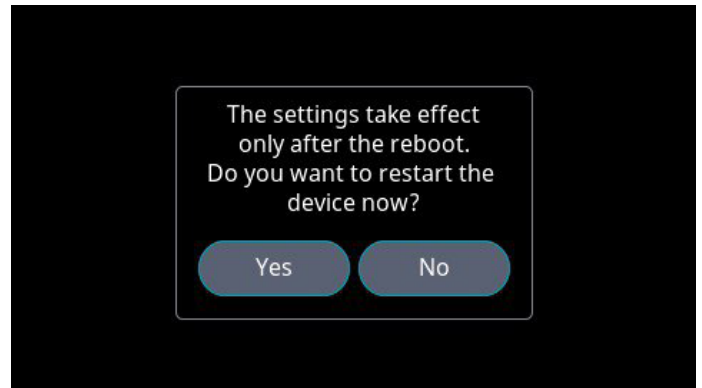


## THIS SUBMENU ALLOWS YOU TO ACCESS THE FOLLOWING SETTINGS:

Menu item	Description
Channel	Dimmer channel settings
Language	Select menu language (Russian, English)
Short name	The name of the dimmer switcher (depends on version)
Full name	Full name of the dimmer switcher
Main name	Main name
Ethernet Settings	Set IP address, Subnet mask, Default gateway and power on/off DHCP.
Soft start	When the checkbox is checked, the power of the output channels changes smoothly.
Terminal resistor	If the dimmer-switch is the last one in the DMX-512 control circuit, checkmark (a terminating resistor is included in the DMX circuit).
Backlight (1-16)	Set the display brightness level (1-16)
Display off time	Can be set: 5,10,15,20s or always on.
LED Mode	Two settings: on or off.
LED Brightness (1-16)	control of the brightness level of the LEDs.
No DMX	In the absence of DMX, the following is set: <b>“Hold DMX”</b> – the last command is executed; <b>“Static”</b> – the dimmer-switcher switches to the pre-set condition; <b>“Static smoothly”</b> – the dimmer-switcher smoothly turns into pre-set condition
Overheating	One of two modes is set: “threshold shutdown” or “soft limitation”.
Universe	The universe number of the dimmer switcher is set.
Merge Mode	Selection of the conditions for merging control channels. Reaction to signals when working with two remotes: <b>“Last”</b> by the last active signal; <b>“Highest”</b> on the highest signal.
Protocol	Set by ART-NET or sACN.
Color Scheme	The color scheme of the display is “dark” or “light”.
Presets 1,2,3,4	You can record the name of each preset.
Software version	Firmware version: ПО, BOOT, ACDC - This is information about the latest firmware.
Serial number	20001
Production date	21.2.21
Touchscreen calibration	Produced in accordance with the instructions in the window that appears.

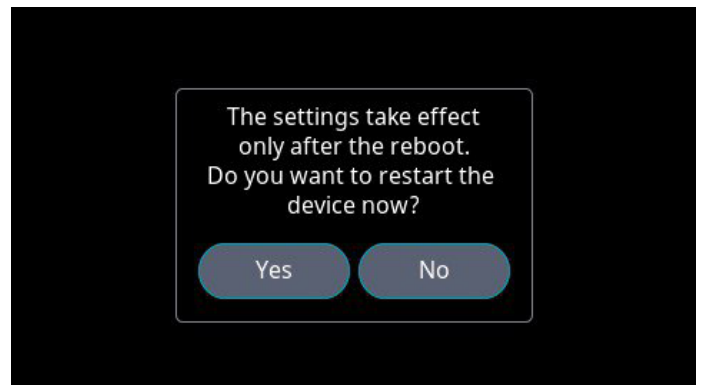
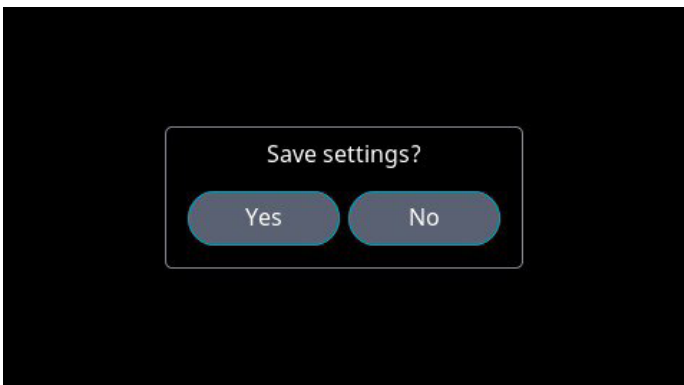
The setting of each “menu item” is made in accordance with the “description” (see table above). At the end of the settings, exit the “settings” menu by pressing the button “Status” or “Manual control”. The submenu will appear on the display screen:



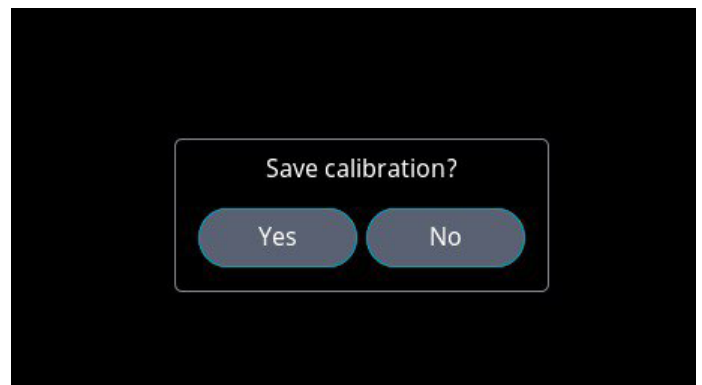
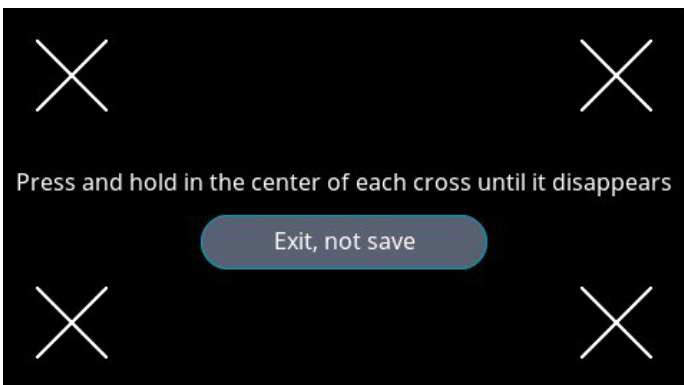


By clicking the "Yes" button, we confirm the changes in the settings and allow the device to reboot.

If necessary, to reset all settings and go to the factory settings, press the button "Reset settings" and confirm this decision by pressing the button "Yes".



When you first turn on and in the future, if necessary, set the touchscreen. Press the "Touchscreen Calibration" button in the submenu that appears follow the instructions in the submenu. By clicking the "Yes" button in the window that appears, we save the calibration results.



## “CHANNEL SETTINGS” MENU

In the “Settings” menu, the operation parameters of 1-12 channels of the dimmer switcher are set.



We enter the “Settings” menu, select the “Channel” button, by pressing the “+”, “-” buttons, select the channel number (1-12). Pressing the “Setup” button opens the submenu of the selected channel.

## EACH CHANNEL’S SUBMENU CONTAINS SETTINGS

Submenu	Description
Channel Name	The name of the channel, can be tied to the name of the controlled device.
Operating mode	The following channel operating modes are provided: <ul style="list-style-type: none"> <li>• <b>Power</b>: the power changes in proportion to the signal level;</li> <li>• <b>Voltage</b>: the voltage changes in proportion to the signal level;</li> <li>• <b>Angle</b>: The power at the load changes linearly according to a given “angle”.</li> <li>• <b>LED</b>: load power changes linearly, proportional to the level of the control signal. At the same time, at the moment of switching on, the minimum power is supplied to the load for stable operation of dimmable LED lamps.</li> <li>• <b>Power slow</b>: Same as “Power” smoothly.</li> <li>• <b>Voltage slow</b>: same as “Voltage” smoothly.</li> <li>• <b>Angle is slow</b>: the same as “Angle” is smooth.</li> <li>• <b>LED slow</b>: Same as “LED” smoothly.</li> </ul>
Method	Sets the load control method: <ul style="list-style-type: none"> <li>• <b>Dimmer</b>: The channel works as a dimmer with all the features of the device.</li> <li>• <b>Relay</b>: devices of this channel will have 2 states ON and OFF.</li> <li>• <b>Jointly</b>: more economical method, less heat generation. It is used for appliances that operate at maximum power for a long time. When the maximum power is reached, the triac turns off, the relay turns on.</li> </ul>
DMX Address	Sets the DMX address (1-512) for each channel.
Subchannel	Setting of the level of Subchannel (0-20) to prolong the life of incandescent lamps.
Limit	Set up power level limit (0.....255)
Upper threshold of the relay	The threshold for switching on the relay is set (20.....255)
Relay Lower Threshold	The relay off threshold is set (10.....240). The relay off threshold must be several points lower to avoid relay bouncing.
Static	Setting of static state when the DMX signal is lost (0....255)

Find the necessary submenu items and configure in accordance with the description of the table. At the end of the settings, click the “Save and exit” button, to cancel the settings, click the “Exit without saving” button

## DDSR 12 SETTING IS ALSO POSSIBLE WITH THE WEB INTERFACE

Put the IP address of the dimmer switcher into the address bar of the Internet search.

A table in Russian or English will appear on the screen. Switched by pressing the “Russian” or “English” buttons.

The screenshot displays the 'About Device' page of the LU DDSR 24 web interface. At the top, there is a navigation menu with links: 'LU DDSR 24', 'ABOUT DEVICE', 'CHANNELS OPTIONS', 'OPTIONS', 'MANUAL SET', and 'SYSTEM'. A 'Language' dropdown menu is located in the top right corner. The main heading is 'About Device'. Below the heading, there are 12 vertical bars representing phase data, labeled 1° through 12°. Below the bars, there is a table of device information and a table of phase data.

MAC:	00:04:a3:03:7fed
Model:	LU DDSR 12
Version:	2d3b1302
Version BOOT:	2b4f06b3
Version ACDC:	2a9b08c2
Temperature, °C:	-34

	A	B	C
Voltage, V	228.8	229	229.8
Current, I	0.6	0.6	0.6
Power activ, kW	0	0	0
Power full, kW	0.1	0.1	0.1
Frequency, Hz	50	50	50

Information about the device: MAC address, model, firmware versions, voltage, current, power and frequency for each phase, temperature of power elements, see (above).

# Chanel options

1	Name: 1 DMX Address: 1 Limit: 255	Mode: Power slow Static: 0 Threshold high: 150	Method: Switcher Preheat: 0 Threshold low: 120	Edit
2	Name: 2 DMX Address: 1 Limit: 255	Mode: Power slow Static: 0 Threshold high: 150	Method: Dimmer Preheat: 0 Threshold low: 120	Edit
3	Name: 3 DMX Address: 2 Limit: 255	Mode: Power slow Static: 0 Threshold high: 150	Method: Dimmer Preheat: 0 Threshold low: 120	Edit
4	Name: 4 DMX Address: 5 Limit: 255	Mode: Power slow Static: 0 Threshold high: 150	Method: Dimmer Preheat: 0 Threshold low: 120	Edit
5	Name: 5 DMX Address: 7 Limit: 255	Mode: Power slow Static: 0 Threshold high: 150	Method: Dimmer Preheat: 0 Threshold low: 120	Edit
6	Name: 6 DMX Address: 21	Mode: Power slow Static: 0	Method: Dimmer Preheat: 0	Edit

## SUBMENU “CHANNEL SETTINGS”

By pressing the “channel settings” button, we open the submenu channel settings:

The table shows the settings of all channels.

To change the settings, press the “edit” button (of the corresponding channel, a submenu of the settings for this channel appears: make the necessary channel settings, if the setting applies to all other channels, check the “All” box, then click the “Save” button.

## Options

### Ethernet

IP address

Mask

Gateway

 DHCP

### Options

ShortName

LongName

RootLabel

Universe

Protocol

MergeMode

No signal DMX

### SUBMENU “GENERAL SETTINGS”

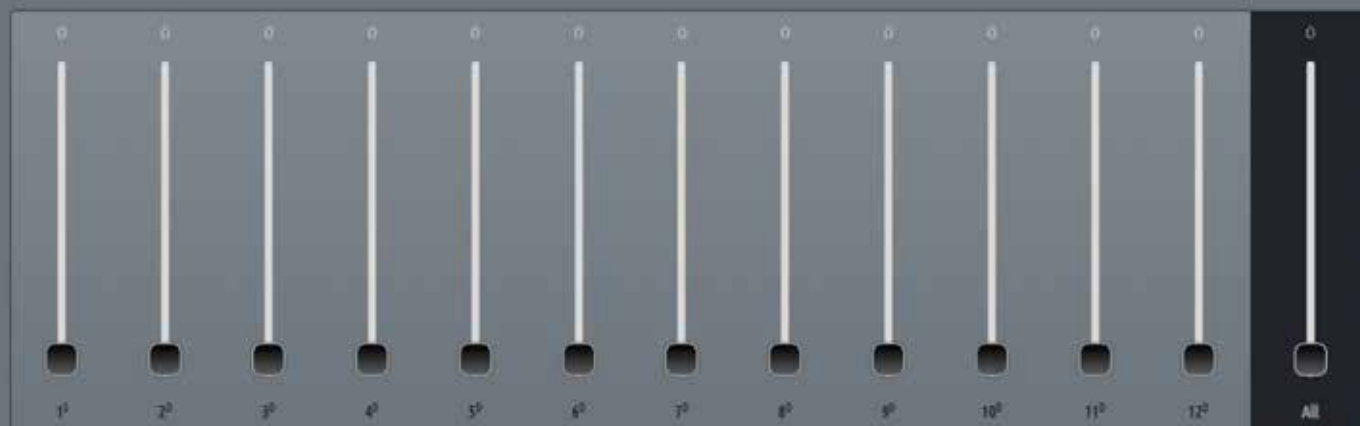
Here you can make Ethernet settings, and other settings in accordance with the table below. To enable the changes, click the “Submit” button, to cancel, - “Clear”.

## Manual set

Activation control

Presets:

1 2 3 4 Save to \* Clear preset \*



### SUBMENU: “MANUAL CONTROL”

To control using this panel, you must check the “Activation of control” checkbox and control the channels from an improvised remote control.

There are 4 “Presets” in the manual control mode, by pressing the button of any of them, we call up the pre-recorded levels.

To write to “presets”, you must turn off manual control, enter the necessary information and save it to one of the presets.

To exit the “Manual control” mode, uncheck the “Activate control” checkbox.

## About Device

### Update firmware

Activation control

Выбор файла: Не выбран ни один файл

Activation control

### Activation control

Activation control

Activation control

Activation control

Выбор файла: Не выбран ни один файл

Activation control

Reboot device?

### SUBMENU "SYSTEM"

On this page you can update the firmware, save all settings to a file, load settings from a previously saved file, reset the dimmer.

To update the firmware, you must first request a new firmware file from the company, select this file and click the "Send" button. By clicking the "Save all settings to file" button, we save the current settings of the dimmer switcher.

To load these settings into the dimmer switcher: click "Choose file", load a previously saved file and click "Submit". The settings will automatically be restored to the dimmer switcher.

To restart the dimmer switcher, click the "reboot device" button.

## 6. OPERATING RULES

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1. It is recommended to use the device in a well-ventilated, clean room with an air temperature of 18-22°C and a relative humidity of up to 80%. The device should be transported in its original packaging or in a specialized (tour) rack, avoiding shocks and ingress of moisture and dust. After transporting the device at low temperatures, wait 3-5 hours before starting operation.

2. In the event of a malfunction, you must immediately disconnect the device from the mains. For repair, contact the service center or the supplier.

3. It is forbidden:

- independently repair or modify the device;
- connect the device in ways different from those described in chapter 3, as well as with damaged or inappropriate wires;
- operate or store the device outdoors during rain or fog, as well as in a damp or dusty room;
- operate the device at a relative air humidity above 80%, at a temperature below 5C or above 40C;
- allow moisture to enter the device;
- use organic solvents to clean the case.

Violation of the provisions listed in clause 3 can lead to failure of the device, as well as to a fire.

## 7. KEY FEATURES

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Supply voltage: 380V 63A 50Hz

Output power: 12 channels per 3 kW

Dimensions: 440(19")x132(3U) x530 mm

Weight: 20.5 kg

## 8. WARRANTY

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On the basis of the consumer warranty, Equivalent LLC guarantees the absence of defects in the components and in the operation of the product for a period of two years from the date of original purchase.

If the product is found to be defective in components or operation during this period, the company's service center will provide you with a free repair or, if necessary, a replacement of the device.

Terms

1. This warranty is valid only with the original invoice or receipt of sale, together with the warranty card, clearly and correctly completed.

2. This warranty is void if the serial number on the product is altered, erased, removed or illegible.

3. Warranty is terminated:

- when using the device for purposes other than intended or in accordance with this manual;
- in the cases listed in clause 3 of chapter 6 of this instruction;
- when the permissible power or load parameters are exceeded;

in the presence of mechanical damage, traces of moisture or foreign objects entering the device.

9. Additional information

Service center address:

127411, Moscow, Dmitrovskoe highway 100, building 2, office 4121.

Tel: (495)920-7756, (916)657-6677, (916)043-4167

E-mail: support@equivalent.pro