



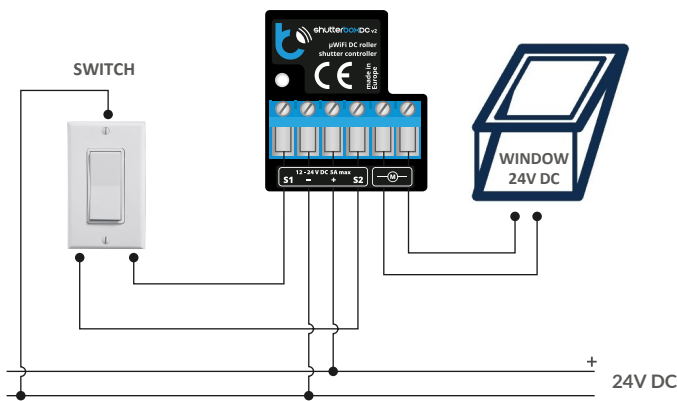




SAFETY RULES

-  **Do not connect the device to loads exceeding the permitted values.**
-  **Connect only in accordance with the diagram presented in the manual. Improper connections can damage the controller, and loss of the warranty.**
-  **DANGER! Risk of electric shock! Even with the device turned off, the outputs may be live. All assembly work should be ALWAYS performed with the disconnected power circuit.**
-  **The installation of the device to a power mains that does not meet the quality requirements defined by EN 50081-1, EN 50082-1, UL508, EN 60950, will result in the loss of the warranty.**

CONNECTION DIAGRAM



1 INSTALLATION - BASICS

- Disconnect supply voltage circuit before installing the controller. Remember that any mounting works should be carried out when the main voltage is disconnected (switch off the mains fuse or disconnecting the power supply from the socket).
- The controller should be installed in a place protected against adverse environmental conditions, protected from third party access - in the flush box or inside the enclosure of the controlled device. Remember that metallic elements (wires, housing parts) have a negative influence on the range of the device, and consequently the comfort of use. It is recommended that the device be mounted in a stable and fixed position.
- Read the diagram and then proceed to install the controller. Pay particular attention to the markings on the controller connector. Start by connecting the power wires: (+) (red or black with a white dotted line) and (-) (black). Sequentially connect the motor or actuator to the pins marked "M". The order in which the motor and actuator wires are connected does not matter at the installation stage - the direction of movement can be set later during the controller configuration.
- The controller supports all types of double monostable switches (so-called bell switches). The order of connecting the S1/S2 input to the right/left switch button does not matter at the installation stage - it can be set later during the controller configuration.
- After making sure that the device is connected in accordance with the diagram and that there are no metal components near the controller which may accidentally cause short-circuit, start the device by turning on the power (turning on the mains fuse or connecting the power cord to the power outlet).

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FIRST START

- Download the **free wBox application**. If you have an Android mobile device, you will find the application in the Play Store. For iOS devices the application is in the App Store.
- By using your mobile phone or tablet, connect it to the device wireless network. To do this, enter to your smartphone or tablet settings, then go to setting of the WiFi network and find the network name „shutterBoxDC_v2-xxxxxxx“ where xxxxxxxx is the serial number of the device. Connect to this network.
- Open the wBox application. A device will appear at the top of the screen. To add it to the application, click on "+" on the right side of the name. To preconfigure the controller, click on the default device name.



You can also set the configuration using the web browser of your phone / tablet. After connecting to the wireless network of the controller, turn on the browser and go website www.blebox.eu

- Test the controller's work by clicking on the arrow near to the area showing the window. If the electric shutter is moving in a different direction than you suppose, go to „Settings“ (icon at the top-right corner of the screen) and select "Enable" in the "Move direction swap" option. Remember to save your settings by clicking the "Save" button, then go to the main panel by clicking the arrow at the top-left corner of the screen. Check again whether the shutter moves as expected.
- If you have connected the wall push-button, check its work. Single pressing of the "down" button / "up" button, will cause that the roller shutters moves in the desired direction to the end position. If the electric shutter goes in the opposite direction to the expected, select "Enable" in the "Inputs swap" option. When the electric shutter is moving, pressing any of the wall switches causes that the shutter will stop immediately.
- The next step is to select the type of roller shutter to be controlled - in settings under "Control type", select one of the options: "Roller shutter", "Tilt shutter", "Window opener", "Textile shutter", "Awning" or "Screen". The individual options differ by the control algorithm (among others, the conversion of the set position to the time of movement) and the icon on the control screen. If you have an unusual engine, select the "Without positioning" option. Specify also the maximum time of movement which is needed for the transition between end positions - this is the time in which the controller gives voltage to the roller motor (it is not recommended to turn off the move timeout). A suggested value of 120 seconds is sufficient for most motors.
- The "Tilt shutter" option is designed for controlling tilt shutters with steerable slats rotated by a single motor. After selecting this option, it is also necessary to set an additional field "Time of maximal rotation of the slats in milliseconds" (suggested value approx. 1100 ms). This is the time in which the slats will be in the maximum angle of the rotation before the shutter starts rolling - thanks to this the adjustment of both the position of the blind and angle of the slats by the additional scrollbar can be done at the control screen.
- The motors have a different construction, some overload (e.g. mechanical end position lock), while some have limit switches (electromechanical or electronic) that cut off the motor current. If the controlled motor is to be overloaded (tightens the strings or has a mechanical end position lock), select "Overload" in the "Limit switch type" field and set the motor current above which the limit position will be detected in the "Limit detection threshold" field. This value must be greater than the value of the current consumed by the motor during normal operation and not greater than the maximum current that can be loaded by the power supply used. If the motor or actuator has a built-in limit switch (electromechanical or electronic, which cuts off the current from the motor), then in the "Limit switch type" field, select "Cut-off". In the "Cut-off" mode, supplementary motor overload detection is possible (e.g. obstacle detection, freeze detection).
- During the sudden start of the engine, high power is temporarily consumed, which may overload the controller and the power supply. In addition, a mechanical jerk shortens the life of the motor and the controlled roller or tilt shutter and generates additional noise. Hence, it is recommended to set the "Time of motor soft start" to a few seconds - this is especially important in the case of a motor with an overload limit switches.

- Similarly, when the motor reaches its end position (e.g. by closing a roller shutter or a sunroof), it is recommended to loosen (release) the mechanical stresses on the elements by slightly reversing the motor, which will increase the lifetime of e.g. seals or tie rods. The "Time of reverse (backward) move" setting is particularly recommended for motors with overload limit switches.
- During e.g. rotation of the shutter slats, a slightly slower motor movement is necessary to provide the increased precision of control. In the "Slow mode power" field set the percentage to which the motor power will be reduced.
- Remember to save the settings by clicking the "Save" button.
- To move the e.g. roller shutter to the specific position, the controller should be calibrated by clicking the "Automatic calibration" button. To use this feature, calibrate the controller by clicking the "Auto calibration" button. Once the procedure is confirmed, the electric shutter will open to the upper limit switch position, then will close to the lower limit switch position and then will open again to the upper limit switch position. During the calibration, do not perform any action. To check the work of the control to a certain point, go to the main panel by clicking the arrow at the top-left corner and then by moving the finger several times over the area showing the window in extreme and intermediate positions, verify if the electric shutter moves to the selected position in the animation. You can also set your electric shutter position - to do this, set the electric shutter in the desired position and then hold the heart icon for about 4 seconds. Then verify the functionality - moving the electric shutter to another position, then click on the heart icon. The electric shutter should be placed in your favorite position.

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OTHER DEVICE SETTINGS

- Go to the configuration ("Settings" icon in the upper right corner of the screen). In the "Main configuration" section, you can change the name of the device that is displayed in the wBox application. The "Status LED enabled" option allows you to turn off the built-in LED on the device.
- To communicate with the device from outside the local Wi-Fi network, from anyplace in the world, through the wBox application, the option "Enable remote access" must be set to "Yes".
- Setting the "Enable event log" option to "Yes" will cause the device to record events (e.g. sending the notification set in the "Actions" section) in the BleBox cloud system. This allows the history of the events to be viewed later also when the controller is offline.
- Confirm the settings by clicking the "Save" button just below.

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ACCESS POINT AND WIFI NETWORK SETTINGS

- Go to "Connect to WiFi network" section, where you can connect the device to the WiFi home network to be able to connect to it via it or from anyplace in the world. To do this, select the network name from the list and press "Connect". If required, enter the WiFi network password. When connecting the device to the home network, the phone / tablet may be disconnected from the device's network.
- After reconnecting the phone to the controller's WiFi network, check the "WiFi Client status" and "Remote access status" fields. The controller is equipped with a network connection supervision system which in case of problems with connection to the WiFi or the Internet will report the problem and its possible causes. If the network is working properly both fields will be set to "Connected".
- After completing the WiFi network configuration, you can disconnect from the device network and connect the phone / tablet directly to your home WiFi network. Control from the wBox application will work in the same way as when the phone / tablet is connected to the device's network. If as a user you leave the local network, e.g. leaving your home or enclosing mobile data, the wBox application will signal this status as "Remote mode". In this case, you will have access to the device data, but for security reasons settings options will not be available.
- In the "Access point settings" section, you can change the name and give the password of the WiFi network emitted by the device. Remember that changing the network name or password can cause disconnection with the device immediately after clicking the "Save" button, so you should reconnect to the WiFi network.
- It is also possible to completely disable the Access Point emitted by the device. To do this, uncheck the "Access point enabled" field and confirm your selection with the "Save" button. Attention! If the controller does not have a stable connection to the WiFi network ("WiFi client status": "Connected", without any error warnings), **turning the access point back on will not be possible** - in this situation, the only solution is to reset the controller to factory settings. Disabling the access point is recommended only after the complete device configuration and making sure that the entire system is working properly.

TECHNICAL SPECIFICATIONS

supply voltage	12-24V DC
energy consumption	< 1W
supported switches	double monostable (push-button), not-illuminated
max current	5A peak
max constant current	3A @ 180sec @ 20deg (thermal protection)
possible limit switches	mechanical / overload
functions	soft-start, obstacle / overload detection, end position reverse movement
number of inputs	2
inputs type	logical, pushbutton, short circuited to GND, configurable
number of control outputs	2
type of control outputs	H-bridge
mounting method	in the flush-mounted box (deepen or double) in the roller shutters case, etc.
housing	made of polyurethane composition not containing halogens, self-extinguishing for thermal class B (130 °C)
dimensions	38 x 33 x 20 mm
protection level	IP20
controller operating temperature	from -20°C to +50°C
API	open
communication standard	µWiFi, compatible with WiFi, 802.11g
radio frequency	2.4 GHz
transmission type	bi-directional, encrypted
mode	direct connection (as Access Point), Wi-Fi connection via a standard router, connection with access from any location in the world (requires only access to the Internet)
encryption	WPA2-PSK and authenticated encryption with associated data (AEAD)
compatible devices and systems	Apple iPhone, Apple iPad, iPad Mini, Android, computers and mobile devices supporting HTML5

ADDITIONAL INFORMATION

LOCATION AND TIME OF THE DEVICE, SCHEDULE

The controller has the ability to work according to a given schedule. To make this possible, set the device's time. Go to settings in the "Device time" section, click "Change timezone". Then select your region and location from the list, confirm your selection clicking the "Save" button. The device will synchronize its time with the server time (if the controller is in a WiFi network with access to Internet) or it will download time from the phone / tablet. It is recommended that the controller is always connected to a WiFi network with Internet access so that it can automatically synchronize its clock.

To be able to control devices using the local sunrise and sunset, you must also select the location of the controller. You can specify the location of the device using a smartphone or tablet. In the section "Device location", click "Set locations". Browser will ask whether to share locations - allow. In the "Coordinates" field, should appear the approximate coordinates of your location. If the "Set locations" button blinks red with the word "Error", or the "Coordinates" field did not change the value from "Not set" to numeric data, a failure has occurred during the location download. You should make sure that the phone / tablet has a GPS module and that the sharing location service is enabled on the phone.

Adding schedule entries can be performed by clicking the "Add item" button in the "Schedule" section of settings. You can select the days in which the task will be performed, the type of entry (at a specific time, or relative to sunrise / sunset - only having a correctly set location) and set the parameters of the task. The set tasks will be visible as a list, individual entries can be edited or deleted.

SOFTWARE UPDATE

To update the software in the controller, connect it to your home WiFi network (see "Access Point and WiFi settings" section) which is connected to the Internet. Go to "Settings" (icon at the top-right corner of the screen) and click the "Get new firmware" button in the final section on settings. Wait about 1 minute, do not close the interface and don't perform other actions. The device will download the latest software. The software version number, hardware version and device identifier can be read at the bottom of the settings screen.

