# Super stairs lighting controller

STX-2195

The **STX-2195** controller is used for dynamic lighting control of the stairs. Its operation is based on an advanced animation of switching on the backlight of successive steps depending on the direction of movement: climbing or descending.

The controller has a built-in clear **OLED** text display, with which you can set all the parameters of the controller.
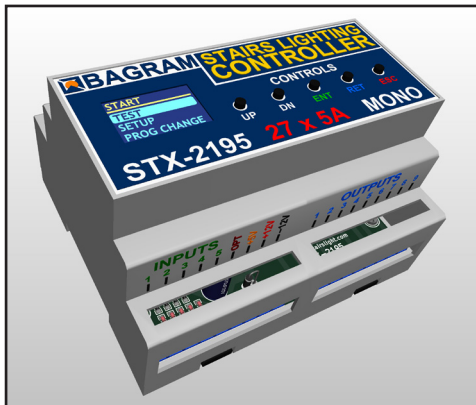
The most important features of the **STX-2195** controller:

— built-in display for setting parameters and checking the operation of the controller

— exits for **25** steps and **2** handrails,

— **7** preset programs and **4** user's own programs

— all programs can be changed and modified by the user

— there are **43** different animations from which you can build your own programs

— built-in twilight sensor,

— mezzanine service with additional access to the stairs

— triggering by buttons and motion sensors,

— remote control via phone app (Android only!)

The controller has 7 different stair lighting animation programs for both directions. Additionally, the user can define his own 4 programs or change the operation of factory programs. There are 43 different basic animations available, from which you can create any programs for switching the stairs on and off.

Setting parameters, changing programs and other activities related to the operation of the controller can be corrected and changed using the built-in screen on which relevant information is displayed. This facilitates the operation of the controller.

You can choose one of the predefined programs permanently or set options so that the selected programs change cyclically or randomly.

The controller has five inputs: three to operate the sensors: bottom, top and platform, and two additional: one to turn on the light permanently and one to change programs. An additional input allows you to connect an external light sensor (included) to block the animation of the stairs in bright lighting.

Depending on the parameter settings of the controller, the lighting of the stairs may go out to zero or to a certain minimum value that allows you to lightly illuminate the stairs for their presentation, or to make it easier to move around them in the dark - without turning on the full lighting (especially important for children!).

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It is adapted to control **MONO LED** strips placed in the steps of the stairs. The controller can smoothly brighten the lighting of each step, which gives an effect pleasing to the eye.

The lighting can be started in the simplest version by pressing a push button on the wall connected directly to the controller or by using (additionally) a sensor (infrared, movement, pressure, etc.) detecting the moment when a person enters the stairs.

The controller can operate up to a maximum of **25** steps. It can also control the illumination of the stair railing - one or two handrails. If there are no illuminated handrails, the device can control, for example, ceiling lighting (12V). The controller also supports stairs with a landing and an entrance to the mezzanine. An additional sensor or button is then required.

All driver parameters can be set by the user. You can set the number of steps in the range from 5 to 25. You can also set the illumination of one or two handrails. You can also change other parameters yourself. These are, among others: selection and change of light animation programs and their pace, switching on or off the backlight of stairs in the dark. If motion sensors are used, you can set the dead time of entering after receiving a signal from the sensor or no response to one or both sensors until the animation of the stairs is finished, which prevents the lighting from being turned on again when descending the stairs. You can also set a long start-up time of the controller so that it does not respond to transient states of the sensors after turning on the power. You can also restore the factory settings at any time.

The device can be controlled remotely using an Android smartphone using a dedicated application - downloadable from the store's website.
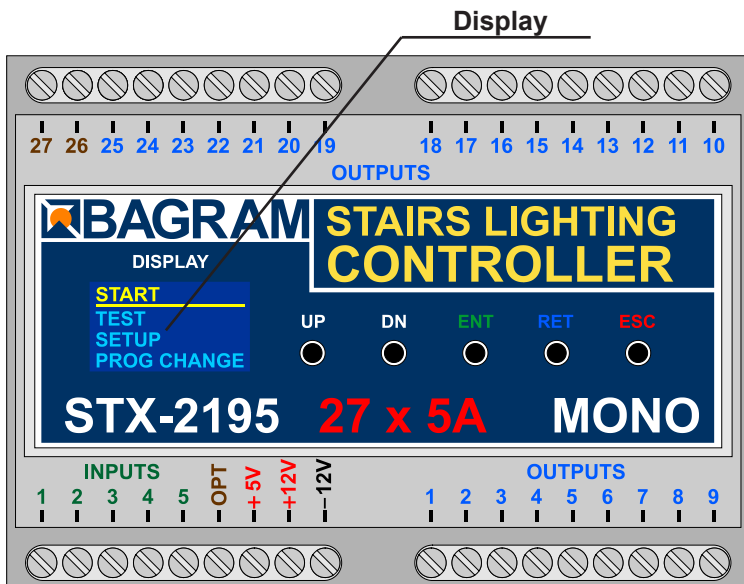
Display and buttons

Description of the buttons on the housing:

UP – up button
DN – button down
ENT – option selection button
RET – back button
ESC – exit button from the menu

Technical specifications

The maximum number of illuminated stairs - 25

Number of illuminated handrails - 2

Supply voltage - 12V

Dimensions: length - 11 cm, width - 9 cm, height - 7 cm

T-35 rail mounting - 6 modules wide.

Load capacity of one output - up to 5A

Start-up - by shorting the input to ground (to the minus of the 12V power supply).

Display

The controller is equipped with a small display and 5 control buttons. With their help, you can conveniently set all the parameters of the controler, the way it works, as well as test the LED installation or even turn on the program demonstrating the capabilities of the device.
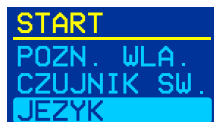
The controler is shipped with the English language version set. However, it may happen that you accidentally switch the controller to the Polish language version. We will describe how to restore the English version.

If the display is blank, press the **UP** or **DN** button and in the **START** menu and press the **UP** and **DN** buttons to find the **JEZYK** (language) item as shown in the figure.

Now press the **ENT** button to select the preset item. The **JEZYK** menu appears. The current language is marked with a dot to the right. Here, highlight **English** and press **ENT**. The menu language will change to English.

After this operation, the **START** menu will appear in English with **LANGUAGE** selected.

After pressing the **ESC** button, you can always return to the main **START** menu.

Menu maneuvering is simple but requires attention. Use the **UP** and **DN** buttons to move the highlight up or down to the desired position. Use the **ENT** button to select or activate a given option. The **RET** button is used to return or exit without selecting / enabling the option. You can always return to the **START** menu with the **ESC** button, i.e. restart the program (not to be confused with the reset of settings!).

LED lighting

STX-2195 can control the backlight realized with LED strips or 12V lamps (but not 230V!). The LED strips are usually mounted under the step and the lamps on the side of the step. The connection of lighting elements is shown in the following figures..

LED strips

A popular way to illuminate the stairs is to use **LED strips**. In the case of the **STX-2195** controller, one-color (**MONO**) tapes should be used. The color doesn't matter. The **STX-1796** controller is designed to control colored (**RGB**) tapes. The standard supply voltage for **LED** strips is **12V**. You can also connect LED strips powered with 24V voltage to the controller, but due to the electronic system of the controller, this voltage should not be exceeded.

LED strips are most often placed under the steps. Points (+) should be connected together and with a single wire with a cross-section of 1.5 mm^2 connected to the controller. On the other hand, the points (-) of the **LED** strips should be led to the controller with separate wires with a cross-section of **0.5 mm^2**, as shown in the figure below.

Wire diameter 1,5 mm^2

Wire diameter 0,5 mm^2

+
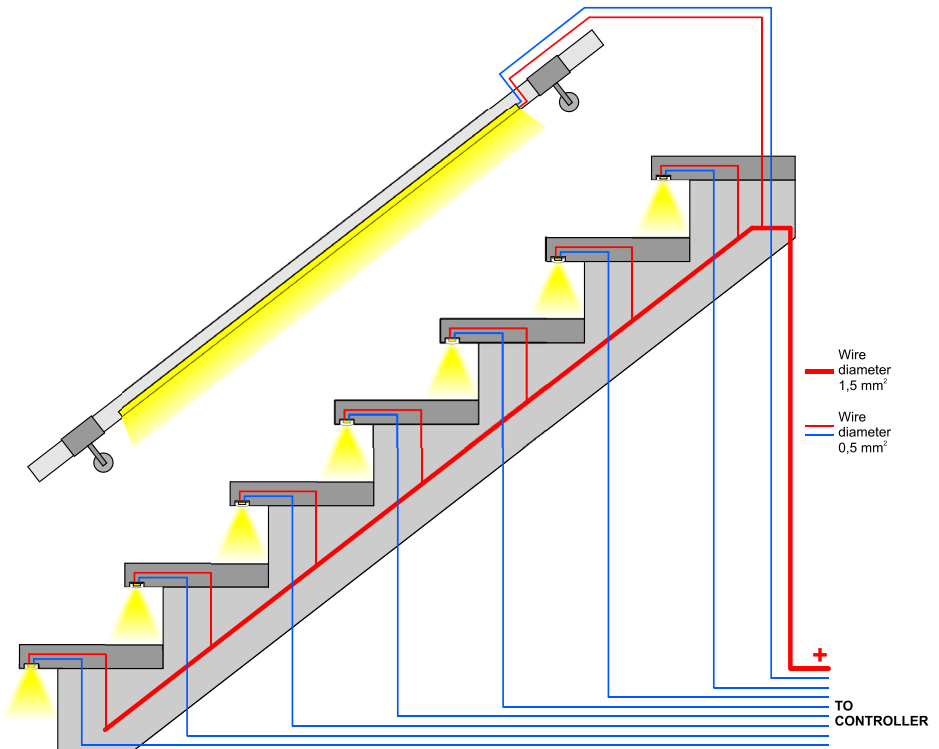
TO CONTROLLER

Electrical installation of stairs — LED strips

You can also lead to the controller separately, one pair of wires with a cross-section of 0.5 mm^2 from each **LED strip**. Both solutions are of equal importance.

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After assembling the strips and bringing the cables to the place where the controller is installed (e.g. switchgear), check the operation of the **LED** strips. The tapes should be connected reliably and permanently. Each section of the tape should be checked for a possible short circuit in the wires or in the tape itself. **It is not allowed to connect to the driver tapes, the operation of which has not been thoroughly tested before!**

The installation should be carried out very carefully and permanently in order to avoid loosening the wires or short circuits between them in the future. The wires should be soldered to the **LED** strips. We do not recommend using special sockets and plugs, because after some time, due to the movements of the stairs, they become loose and lose contact.

Electrical installation should take into account possible easy replacement of the section of the tape, which will be damaged for various reasons, or individual diodes in it will go out. The way the controller works, the so-called PWM, maintains LEDs and extends their service life.

When designing the connections between the controller and the **LED** points, please take into account the currents flowing in the circuit and select the cross-section of the electric wires accordingly. The plus cable for the **12V** power supply to **LED** strips or lamps should have a much larger cross-section than the cables between the controller and individual strips.

The diagram below shows the connection of the controller to a stair consisting of 18 steps and two handrails. Connect the output No. 1 to the first, **lower step**, output No. 2 to the second (higher) step, etc. Output 26, looking from the bottom of the stairs, is connected to the left handrail (going down), and output 27 to the right handrail (going up) . Observe the rule that all points (+) of the LED strips should be connected with each other and with the **PLUS** of power supply, Points (-) should be connected to the appropriate outputs of the controller.

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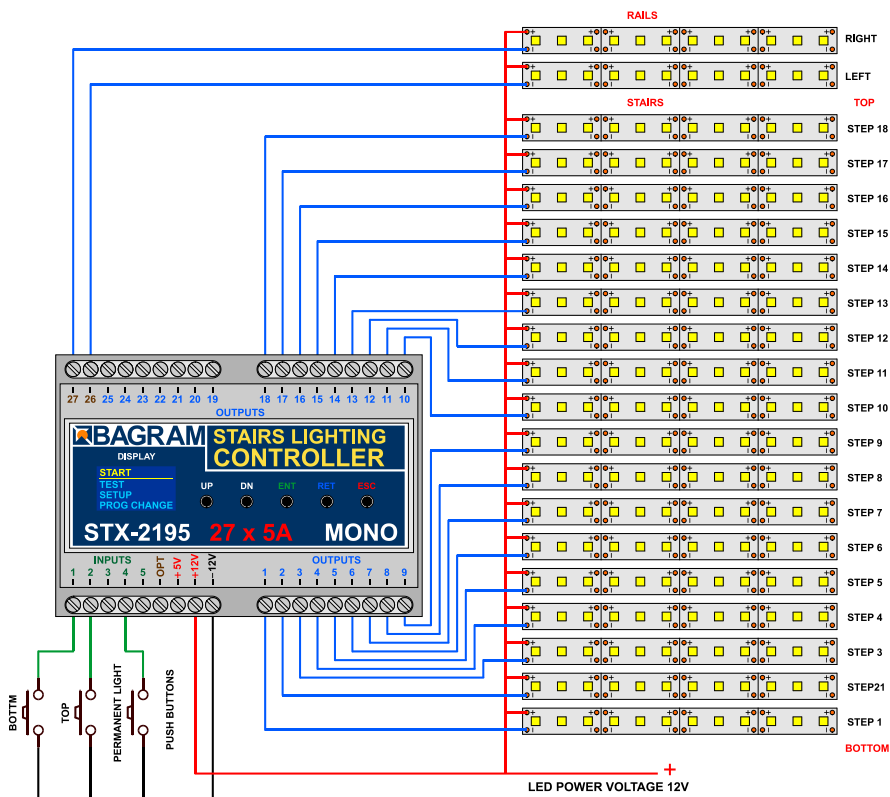
LED spots

Another way to illuminate the stairs is to place a small LED lamp (spot) on the wall, above each step. The lamps must be designed to be supplied with 12V and work in the same mode as the LED strips (configuration type: **LED + resistor**). You cannot use lamps with their own drivers - they will not work properly and most of the light animations will not be visible. If possible, lamps should be placed above each step - this will ensure a smooth animation effect. If there is a landing - you can add 1-3 lights to increase the effect and treat them as the next stairs between the steps.

The connection of the lamps is identical to that of the **LED** strips and should be made according to the diagrams on the previous pages.

Installation

The installation of the controller should be carried out by a person with advanced skills in the field of electrical engineering, preferably a certified specialist. Connecting the controller must be strictly performed with the power off!

The controller and LED power supply should be stabilized with appropriate current efficiency depending on the number and length of LED strips or 12V lamps used. Do not use power supplies 12 from halogen lamps - the controller will be damaged immediately! The controller is designed for a supply voltage of 12V DC (stabilized voltage). The maximum current for one output is 5A. This value should not be exceeded.

Before connecting the controller, check the operation of the LED strips. The tapes should be connected reliably and permanently. Each section of the tape should be checked for a possible short circuit in the wires or in the tape itself.

First, the lighting of the stairs should be connected to the controller — **LED** strips or lamps (spots). At this stage, please do not connect sensors or buttons to the controller inputs. After connecting the **12V** power supply to the controller, the lighting of the stairs should turn on with minimum brightness - the effect of the so-called stairs illumination. 15 steps will be lit as this amount is factory set.

Testing

START
TEST
SETUP
PROG CHANGE

After connecting the **LED** strips and power supply, the start menu will appear on the controller display. **Note**: the display turns off after one minute of inactivity, but turns on again when any button is pressed. At this stage, go to the **TEST** menu, i.e. select the **TEST** item from the **START** menu and press **ENT**.

TEST
ALL ON
BLINK ALL
ONE STEP

The **TEST** menu will be shown with several options to choose from. The first three options can be used to check if the **LED** is installed correctly. **ALL ON**. — turns on the LED permanently on all outputs of the controller. **BLINK ALL** — the controller turns on and off all outputs cyclically, which allows you to check which LEDs are working properly, **ONE STEP** — lights up only one step, and using the **UP** and **DN** buttons you can change the number of the enabled step.

Each test option can be exited by pressing the **RET** or **ESC** button.

All these options allow you to carefully check the operation of the LED and remove any faults. **ATTENTION: all manipulations with LED wires, switching, soldering and correcting the installation should be performed with the controller turned off!**

Now set the target number of steps and handrails. From the **START** menu, choose the **SETUP** item and go to the menu of the same name.

SETUP
STAIRS NO
RAILS NO
TO LAND NO

STAIRS NO — you choose the number corresponding to the number of illuminated steps on the stairs;

RAILS NO — set one of the three options: 0 — when there are no illuminated handrails, 1 — for one handrail, 2 - for two handrails. In the latter case, there must be two handrails placed along the entire staircase on both sides of them. The controller will activate the appropriate railing depending on the direction of ascending or descending.

TO LAND NO — you set the number of stairs from the bottom to the landing, if you have a landing on the stairs with a separate entrance to other rooms.

TEST
ONE STEP
SENS TIME
PROG TEST

Now you can go back to the **TEST** menu and select the **PROG TEST** option to test the stair light animation programs.

A menu will appear with a long list of programs stored in the controller. There are seven preset programs: Bright, Steps, Fall, Lift, Wave, News, and four user changeable programs: Custom 1 to 4.

PROG TEST
Bright
Bright
Step

There is a marker next to each program showing the direction of the animation:

- — upward direction,
- — downward direction,
- — universal animation, the same for both directions.

After selecting the appropriate program and pressing **ENT**, the selected animation will be displayed on the stairs. The **PROG TEST** option allows you to check the operation of all programs, which will then facilitate the selection of active programs as well as the change or programming of your own programs. For own programs, the brightening animation is set at the factory - it can be changed while programming the animations.

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Control

The controller inputs operate on the principle of shorting to ground. It is enough to connect a mechanical button (not a switch) to each of them to start the controller after a short press. One contact of the button should be connected to the controller input, and the other to the ground (minus of the 12V power supply). This solution is shown in all figures. Note: Sensors and buttons can be installed simultaneously in parallel connection as shown in the following diagrams.

You can also run the controller with other elements or devices, most often with motion sensors. The motion sensors present on the local market are not suitable for working with the controller for many reasons:

— are adapted to control the light and have too long pulse time: from several dozen seconds to several dozen minutes. For the controller, an impulse is needed not longer than approx. 5 seconds, preferably approx. 1 second or shorter.

— they work more often in the so-called pulse dragging mode - they extend the pulse if there is a person moving in the room within their range.

— voltage dangerous for the controller appears at the output of the sensor: from 230V to 12V or 5V. **Such sensors must not be connected to the controller under any circumstances!**

— the only permitted type of sensor output are NO (Normally Open) relay contacts not connected at any point to the sensor supply voltage!

In case the buyer of our product would like to apply their sensor solution, please contact us before purchasing it. We are happy to provide any information and help you solve the problem.

For our part, we recommend a whole range of our sensors adapted to work with the controllers we produce.

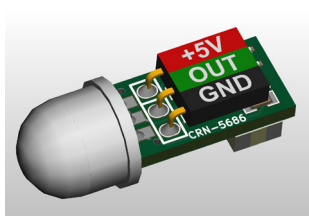## Motion sensors for 5-12V voltage

Low voltage sensors differ in dimensions, capabilities and working principle. We will briefly discuss all of them. For detailed information, please refer to the instructions for each type of sensor.

### Motion Sensor 12V wall mounted with twilight CRN-5480

The **CRN-5691** is a motion sensor for 12V voltage with wall mounted case for applications as a device that triggers controllers when motion of an object is detected. The sensor is cooperating with lighting controllers for stairs. The sensor detects objects emitting infrared (heat) radiation, such as people or animals. The sensor sends a fixed-length pulse (about 5 sec) after motion detection. The pulse has a negative level and can be connected directly to the controller input. A special feature of the sensor is the twilight sensor instaled.

### Miniature motion sensor 12V CRN-5686 with sensitivity adjustment

The **CRN-5686** is a subminiature motion sensor for 5V voltage for applications as a device that triggers controllers when motion of an object is detected. The sensor is cooperating with lighting controllers for stairs. The sensor detects objects emitting infrared (heat) radiation, such as people or animals. The sensor sends a fixed-length pulse (about 5 sec) after motion detection. The pulse has a negative level and can be connected directly to the controller input.

### Standard motion sensor 12V CRN-5481
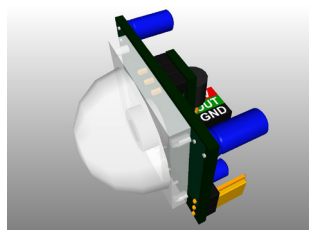
The **CRN-5481** sensor fits freely into a 60 mm mounting box. Dimensions: 32x24x18 mm. The sensor has a wide range of sensitivity adjustment, as well as a removable large bowl that can be accurately outlined to reduce the field of view. It can be powered from the same voltage (12V) as LEDs.

Compact Twilight Motion Sensor 12V CRN-5684
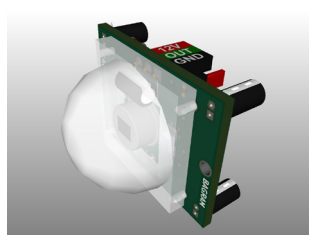
A special feature of the **CRN-5684** sensor is the twilight sensor installed. It blocks the work of the sensor if the light level exceeds the set value. The sensor fits freely into a 60 mm mounting box. Dimensions: 26x24x18 mm. The sensor has a wide range of sensitivity adjustment, as well as a removable large bowl that can be accurately outlined to reduce the field of view. It can be powered from the same voltage (12V) as LEDs. It has a diode signaling the sensor pulse.

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Ultrasonic sensor 12V CRN-5462
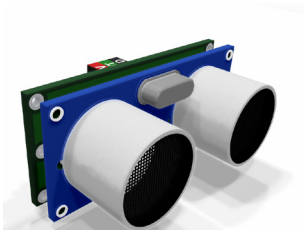
The **CRN-5462** ultrasonic motion detector has a precisely adjustable field of view range from 1 cm to 250 cm. The field of view can have a selected depth and distance from the sensor in the range of 1 cm to 250 cm. Dimensions: 46x20x20 mm. The sensor fits freely into a 60 mm mounting box. It can be supplied with the same voltage as the LED diodes. It has a diode signaling the sensor pulse.

Installation of sensors

Each low voltage sensor can be directly connected to the controller input. It is important that the sensor and the controller itself are connected in the correct way.
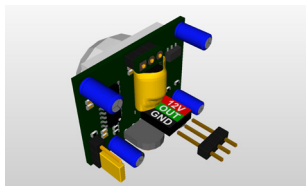
On the back of the sensor is a connector for connecting wires leading to the controller. To facilitate assembly, to each sensor is added the connector to soldering wires. You should keep the correct order of wires according to the description on the sensor connector.
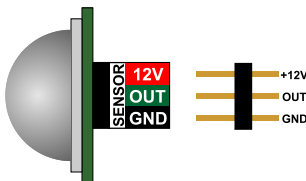
It is recommended to use colored wires with a possibly small cross-section, eg a telephone cable harness. Please note that any mistake in connecting wires, especially power supplies, can damage the sensor or controller. To facilitate assembly, to each sensor is added the connector to soldering

The sensor's angle of view can be adjusted by gluing the sensor's bowl (removed) from the inside with a white insulating tape so that it does not see people passing by. For the ultrasonic sensor, select and set the work zone.

The sensors can be mounted in a skirtingboard or bound. It's best to use the so-called frame with end cap. A hole should be drilled in the cap with the diameter of the sensor bowl or with the diameter of the emitters.

Before installing the sensors, their operating time and sensitivity must be set to minimum. In the case of sensors having a jumper for selecting the mode of operation with or without support (triggering), select the „non-repeatable trigger" position.

Two sets of sensors prepared in this way should be installed in a suitable place near to the first and last stage.

The diagram on the next page shows exactly how the whole set is built with the use of 12V motion sensors.

Connecting sensors to the controller

All sensors can be connected to the controller with three wires, preferably the so-called a rope with a cross-section of **0.5 mm²**. The cables should not be longer than 20-30 m. It is recommended to use cables with colored insulation so as not to confuse them when connecting to the power supply and the controller.

The power supply of the sensors can be connected to **+ 12V**, although we recommend connecting the power cord to a special + 5V voltage provided by the controller. The sensor **OUT** output is connected to the appropriate controller input, and the **GND** terminal to the power supply minus of the entire system (**–12V**).
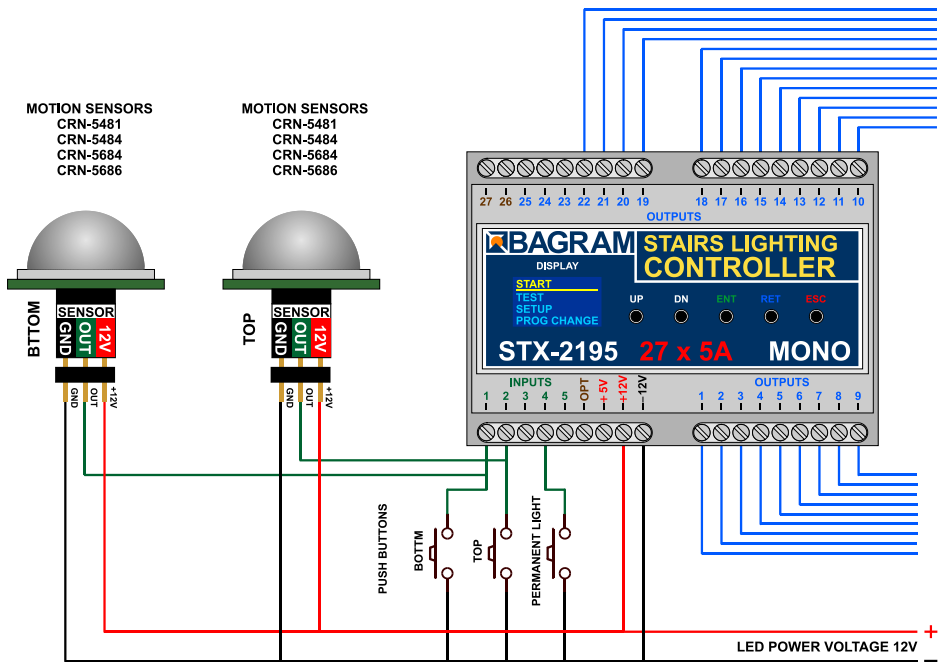
The diagrams below show the installation details. Note: The diagrams show buttons for manual controller release. They are not necessary and can be omitted.
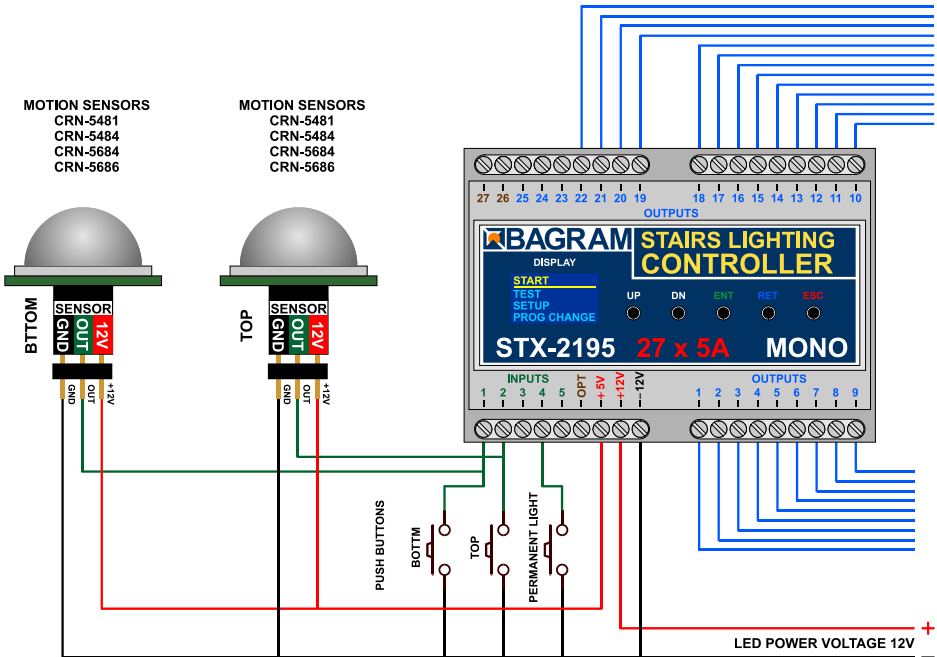
Recommended way of connecting **12V** motion sensors to the controller.
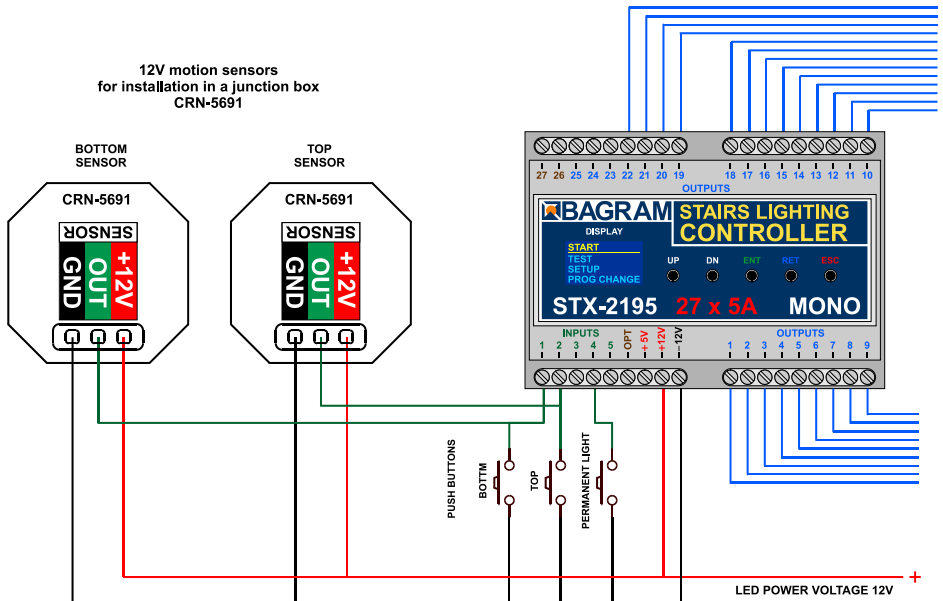The supply voltage of the sensors is + 5V.
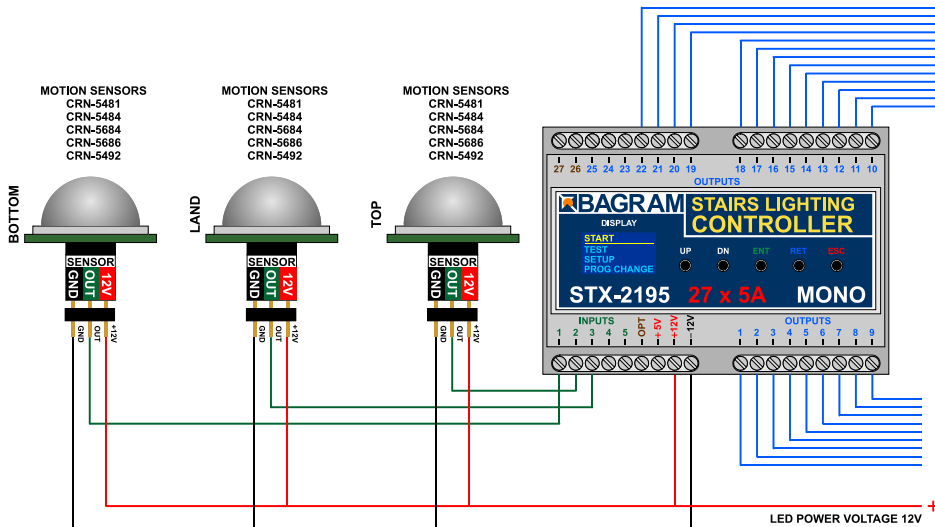The **CRN-5492** sensor should be powered from the **12V** voltage.

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An alternative way to connect 12V motion sensors to the controller.
The supply voltage for the sensors is **+12V**.
The **CRN-5492** sensor should be powered only from the **12V** voltage.

An alternative way of connecting **CRN-5691** motion sensors to the controller.

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Connecting three **12V** motion sensors to the controller - platform operation.
The supply voltage for the sensors is **+ 5V** or **+ 12V**.
The **CRN-5492** sensor should be powered only from the **12V** voltage.

Sensor testing

After completing and checking the installation supplying the signal from the sensors to the controller, you can start connecting the sensors.

Please connect the sensors one at a time, not all at once. First, please connect the lower sensor and check its operation. Enter the stairs with a normal step. If the sensor is not working properly, it is necessary to make appropriate corrections of its sensitivity and position. You can also limit its field of view by pasting the white bowl on the inside with white insulating tape or painting it with white paint.

If everything works properly, disconnect the sensor temporarily and similarly test the operation of the upper sensor, and then also separately, the sensor for the platform (if needed).

Only after checking all the sensors separately, can they be connected together to the controller and check the operation of the whole again.


If there is any doubt about the sensor pulse time, this can be checked with a special sensor time test tool. From the **TEST** menu, select the **SENS TIME** option. Only the detector under test should be connected to the inputs.
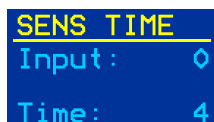
After the sensor is activated, the display will show the number of the input to which the sensor is connected and the duration of the pulse. The pulse should not be longer than 10 seconds. You can exit the sensor time measurement option by pressing the **RET** or **ESC** button.

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Controller settings for sensors

SETUP
SEQUENCE
DEAD TIME
SENSOR LOCK
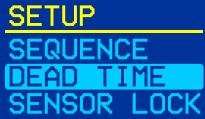
The controller has two options for the operation of sensors: You can find them in the **SETUP** menu. These are: dead time and sensor lock.

DEAD TIME
1
2
3

DEAD TIME — this is the time counted from the beginning of the animation, during which the controller will not respond to subsequent impulses. This prevents the animation from restarting if another impulse comes from the sensor, generated e.g. by a second person entering. It can be set from 1 to 30 seconds. It is factory set to 3 seconds..

SENSOR LOCK
No lock
Opposite
Mid and opp
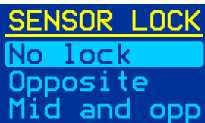
SENSOR LOCK — allows you to block the other sensors for the duration of the animation. This option prevents e.g. the second sensor from restarting the animation when descending the stairs. **No Lock** is set at the time of factory shipment. **Opposite** — blocks the opposite sensor for the duration of the animation; **Mid and opp** — blocks the middle and opposite sensors for the duration of the animation; **All lock** — blocks all sensors, including the sensor that triggers the animation.

Light sensor

The controller has a built-in digital light measurement system. The set includes a small probe to measure light. If it is connected and properly adjusted, it will be able to disable the operation of the controller when the light level is above the set value.

NOTE: The sensor connection socket is covered by the factory. Please do not remove the lock without need, do not connect any other devices, your own sensors, do not measure with a meter etc. It may lead to permanent damage of the controller!

The diagram below shows the connection of the sensor included in the kit to the controller.
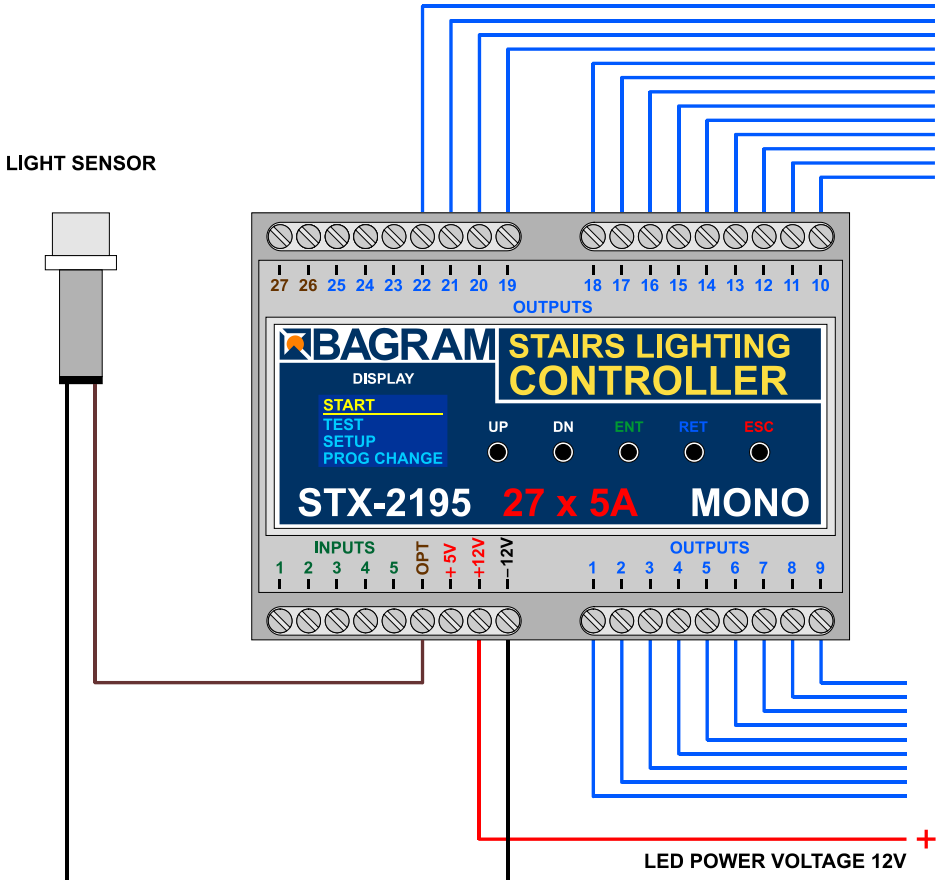
Connecting the world sensor to the controller to the controller.
Motion sensors and buttons are omitted.

The sensor is unipolar and the direction of its connection is not important. Just remember to connect one of its cables to the **POWER MINUS (GND)** and the other to the **OPT** socket. Connecting the sensor should be performed with disconnected power supply of the unit and the controller. The length of the light sensor wires is not critical, but should not exceed 10 m. It should be ensured that no artificial light falls on the sensor that could interfere with its measurements.

Please do not experiment with other light sensors!

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In order to adjust the light sensor, the sensor should be installed in the target place so that it detects changes in the light intensity important for blocking the switching on of the stairs. Setting the parameter should be performed when the lighting has a threshold value, i.e. below the brightness at that moment, the controller is to turn on the animation, and above this brightness — to block it (not to turn on).
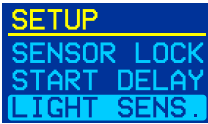
To set the sensor activation threshold, select **SETUP** from the **START** menu and select **LIGHT SENS.** from this menu.

On the next screen: **Sensor** — means the current brightness at the location of the sensor; **Old lev** — previously set value; **New lev** — new value set by **UP** and **DN** buttons. The range of values is 0 to 50. Using the current brightness indication, set **New lev** to the same number or slightly higher or lower than the **Sensor** indication.

For clarification: Setting the value **New lev** to 50 will make the controller work always, regardless of the sensor lighting. If **New lev** is set to 0, the controller will not power on at all. Therefore, the value of **New lew** should be set between these extreme numbers, close to the value of 25.

The selected value is confirmed by pressing the **ENT** button. From now on, switching on the controller will be blocked if the sensor lighting level is higher than the set value. Also, the backlight of the stairs will be turned off.
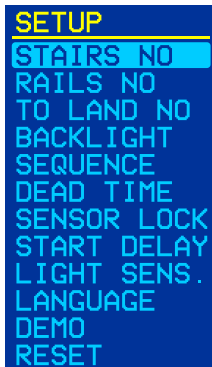
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Main controller settings

START menu

START
TEST
SETUP
PROG CHANGE

The **START** menu contains three main items: **TEST** — a set of options for testing the controller and previewing the operation of programs; **SETUP** — options for adjusting the controller settings; **PROG CHANGE** — item for changing the operation of existing programs or designing your own programs. You can navigate through the menu by pressing the **UP** and **DN** buttons, and the selection is made by pressing the **ENT** button.

SETUP menu

SETUP
STAIRS NO
RAILS NO
TO LAND NO
BACKLIGHT
SEQUENCE
DEAD TIME
SENSOR LOCK
START DELAY
LIGHT SENS.
LANGUAGE
DEMO
RESET

Here you can set and change the main parameters of the controller. Parameters should not be changed without reason. Please think carefully before changing any of the parameters. In the event of a controller malfunction, you can always use the **RESET** option and restore the factory settings.

Only options that have not been discussed before will be discussed here.

STAIRS NO
23
24
25 ▪

STAIRS NO

The controller is factory set to operate **25** stairs. You almost always need to change this value. The previously selected number of stairs is marked with a dot. By moving up or down with the **UP** and **DN** buttons, set the desired number of highlighted steps and confirm it with the **ENT** button.

RAILS NO
0 ◊
1
2

RAILS NO

There are three values to choose from: 0 — no handrails, 1 — one handrail (may be in several sections), 2 — two handrails. In the latter case, there should be separate handrails on both sides of the stairs. The controller will activate one handrail when going down and the other when going up.

TO LAND NO
12
13
14 ▪

TO LAND NO

If the stairs have a landing (mezzanine) with access to other rooms, a third sensor can be installed to activate the animation when a person entering the stairs from the mezzanine is detected. Here you can set the number of steps from the bottom to the landing (landing). The controller will then start the proper step animation.

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LAND PROG.

Immediately after setting the number of steps to the landing, the menu for setting the animation program for the landing will appear. There are three animations to choose from: brightening, lighting up and down steps individually, and a wave flowing from the landing in both directions — up and down.

BACKLIGHT

The controller can gently illuminate the stairs for their presentation, or for easier navigation in the dark - without turning on the full lighting (especially important for children!). Set the appropriate value: 0 — no backlight, 1 - 20 — backlight level, where 1 means minimum, and 20 — maximum brightness for the backlight.

SEQUENCE

The controller has 7 own and additionally 4 user programs. Here you can set which programs are to be displayed and in what order. There are three options to choose from: **In order** — selected programs will be displayed sequentially, **Random** — programs will be displayed randomly, **One prg.** — only one selected program will be displayed.

After selecting the first or second option with the **ENT** key, a list of programs will be displayed, with active programs marked with a dot. You can scroll up and down through the list, and switch the selected program on or off with the **ENT** button. After determining the active programs, the **RET** button can be used to exit this option. From now on, the selected programs will be displayed in the way selected at the beginning (**In order** or **Random**).

When selecting the third option, **One prg.** — from the list of active programs, select one fixed program with the **ENT** button. Then only it will be displayed by the controler. Changing one program to another is of course possible in the above-described manner or by using a button connected to the **PRG** input.

START DELAY

This option allows for a delayed switching on of the controller after switching on the power supply or after its loss. This is sometimes needed in order for motion sensors to go through the initialization phase without causing chaos in the operation of the controller. 0 — means no delay, from 1 to 5 — delay time in minutes.

DEMO

This option runs a demo program on the controller. All animation programs will be played periodically. This option is useful for presenting the driver's capabilities or for advertising purposes.

You can stop the demo display by holding down the **ESC** key while moving to the next animation.

RESET

This option changes the controller settings to factory settings. **All changes made so far, new animation programs and settings will be deleted and replaced with factory settings**. Please use this option carefully!

Structure of programs

In the STX-2195 controller, it is possible to create your own animation programs, as well as modify the already existing programs.

Each program has two segments - directions: up (going up) and down (going down). Each segment (direction) consists of three partial animations: turning on the light, keeping the light up and turning off the light. For each direction, these partial animations are most often different, although they can be the same for both directions, e.g. slowly brightening steps.

To make it easier to tell them apart, each basic animation is marked with two small icons:

1. A marker showing the direction of the animation:

▰ — direction up, going up,

▰ — downward direction, going down,

▲ — universal animation, the same for both directions.

2. A marker showing the type of change:

◀ — brightening, switching on the lighting of the stairs, the initial element of the program,

▬ — stable lighting, central part of the program.

▶ — dimming, switching off the lighting of stairs, the final element of the program,

So markers ▰◀ means lighting of stairs up, and markers ▰▶ means switching off the stairs downwards.

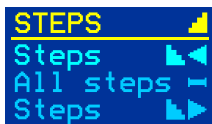|	SEGMENT ▰			SEGMENT ▰		
1 Bright	Bright ▰◀	AllSteps ▬	Dark ▰▶	Bright ▰◀	AllSteps ▬	Dark ▰▶
2 Step	Step ▰◀	AllSteps ▬	Stopnie ▰▶	Step ▰◀	AllSteps ▬	Step ▰▶
3 Fall	Fall ▰◀	AllSteps ▬	Kaskada ▰▶	Fall ▰◀	AllSteps ▬	Fall ▰▶
4 Shift	Shift ▰◀	AllSteps ▬	Jazda ▰▶	Shift ▰◀	AllSteps ▬	Shift ▰▶
5 Lift	--NO ANIM--	Lift ▰	--NO ANIM--	--NO ANIM--	Lift ▰	--NO ANIM--
6 Wave	Wave ▰◀	Wave ▰▬	Fala ▰▶	Wave ▰◀	Wave ▰▬	Wave ▰▶
7 News	News ▰◀	News ▰▬	News ▰▶	News ▰◀	News ▰▬	News ▰▶
User 1	Bright ▰◀	AllSteps ▰▬	Dark ▰▶	Bright ▰◀	AllSteps ▬	Dark ▰▶
User 2	Bright ▰◀	AllSteps ▰▬	Dark ▰▶	Bright ▰◀	AllSteps ▬	Dark ▰▶
User 3	Bright ▰◀	AllSteps ▰▬	Dark ▰▶	Bright ▰◀	AllSteps ▬	Dark ▰▶
User 4	Bright ▰◀	AllSteps ▰▬	Dark ▰▶	Bright ▰◀	AllSteps ▬	Dark ▰▶

Structure of programs and their partial animations (factory setting)

Example — Steps program
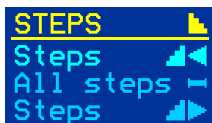
Segment displayed when going up.
You can see three animations: lighting up the steps up, lighting up the entire stairs and extinguishing the steps up.

Segment displayed when descending.
There are three animations: the steps are lit down, the entire stairs are lit and the steps are extinguished down.

You can replace each of these animations with another and get the effect changed accordingly. The entire process of changing programs is described below. Please start learning with your own programs, and then change the factory programs once you have practiced.

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List of partial animations

Below is a list of all animations that you can use to build your own programs or change existing programs.

|	
ANIM. LIST	
— NO ANIM —	— no animation, skipping this element, the next animation will be performed.
Bright ▲◀	— slow lightening of all steps simultaneously, both directions
All steps ▬	— even, continuous, maximum light,
Dark ▲▶	— slow dimming of all steps simultaneously, both directions,
Steps ◢◀	— lighting up subsequent steps upwards,
Steps ◢▶	— extinguishing subsequent steps upwards,
Steps ◣◀	— lighting subsequent steps downwards
Steps ◣▶	— extinguishing subsequent steps downwards,
Fall ◢◀	— falling steps, upward direction, lighting up the stairs,
Fall ◢▶	— steps falling, upward direction, steps extinguishing,
Fall ◣◀	— steps falling, downward direction, steps lighting up,
Fall ◣▶	— steps falling, downward direction, steps extinguishing,
Shift ◢◀	— sliding brightening of steps, upward direction,
Shift ◢▶	— sliding blanking of the steps, upward direction,
Shift ◣◀	— sliding brightening of steps, downward direction,
Shift ◣▶	— sliding blanking of the steps, downward direction,
Lift ◢	— a soft light strip moving upwards,
Lift ◣	— a soft light strip moving downwards,
Wave ◢◀	— waves of light flowing upwards, lighting up,
Wave ◢▬	— waves of light flowing upwards, continuous light, variable,
Wave ◢▶	— light waves flowing upwards, extinguishing,
Wave ◣◀	— waves of light flowing from above, lighting up,
Wave ◣▬	— waves of light flowing downwards, continuous and variable light,
Wave ◣▶	— light waves flowing from above, extinguishing,
News ◢◀	— imitation of the message bar on the building, direction up, lighting up,
News ◢▬	— imitation of the message bar on the building, direction up, continuous light,
News ◢▶	— imitation of the message bar on the building, direction up, extinguishing,
News ◣◀	— imitation of the message bar on the building, downward direction, lighting up,
News ◣▬	— imitation of the message bar on the building, downward direction, continuous light,
News ◣▶	— imitation of the message bar on the building, downward direction, extinguishing,
Snow ▲▬	— gentle flickering of the included steps, continuous, variable light,
Laser ▲▬	— steps igniting randomly, both directions, igniting
Rand ▲◀	— steps fading out randomly, both directions, extinguishing,
Rand ▲▶	— aggressively flashing steps, imitation of laser flashes or short circuits, continuous light,
Shot ◢◀	— quick lighting of steps, upward direction,
Shot ◢▶	— quick extinguishing of steps, upward direction,
Shot ◣◀	— quick lighting of steps, downward direction,
Shot ◣▶	— quick extinguishing of steps, downward direction,
Explode ▲◀	— quick lighting of steps from the inside, both directions,
Explode ▲▶	— quick extinguishing of steps inside, both directions,
Implode ▲◀	— quick lighting of steps towards the center, both directions,
Implode ▲▶	— quick extinguishing of steps inside, both directions,
Bench ▬	— light waves from the center to the ends of the steps, constant light,
Heart ▬	— pulsation of the entire staircase in the rhythm of the heart, constant light,
Inst On ▲◀	— immediate activation of the entire staircase, both directions,
Inst Off ▲▶	— immediate shutdown of all stairs, both directions,

Changing the program duration (speed change)

START
TEST
SETUP
PROG CHANGE

To change the program time, select the **PROG CHANGE** item in the **START** menu.

CHANGE
Program
Time only
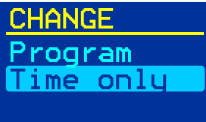
First you will be asked whether to change the **Program** or **Time only**. The first option allows you to change the animations in a specific program. To change the speed of the program, select the **Time only** option here.

PROGRAMS
Bright
Steps
Fall
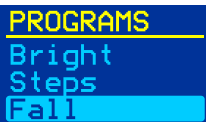
The next **PROGRAMS** menu will be displayed with a list of programs to be changed. Here we will change the duration of the middle part of the Brightness program, which will extend the entire program. So please set the backlight to **Bright**. and press **ENT**.

DIRECTION
Up
Down

In the next step, select the animation direction for going **Up** or **Down**. Select **Up** and press **ENT**.

ANIMATION
Bright
AllSteps
Dark

Now we will see a list of animations (always three) for this segment (direction). Here you can see three predefined animations of the first program: brightening, constant light on the stairs and dimming. We will choose **AllSteps** - constant light between switching the stairs on and off — set the backlight and press **ENT**.

SPEED
8
9
10

Now you can change the duration of this one animation: make it longer or shorter. The optimal tempo is 10 — most often it means about 10 seconds, although for some animations the number 10 corresponds to another, e.g. shorter time or the number of repetitions of a sequence (e.g. heartbeats). The previously set value is marked with a dot. By moving the highlight, we select the appropriate time, and by pressing **ENT** we will see the program with the changed time for the selected animation.

CHANGE?
No change
Yes change
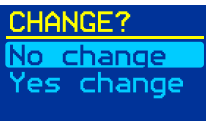
Now we need to confirm the time change. After selecting **No change** — we will return to the list of times for this animation and we can choose a different tempo. By selecting Yes change — we accept the choice and the animation time will be permanently modified.

After accepting the appropriate number with the **ENT** button, the process of changing the time of one animation ends. We are returned to the **ANIMATION** menu and you can change the speed of the next animation in the same segment (direction) selected at the beginning of the program.

If you want to end the changes there, you can press the **RET** or **ESC** button to return to the **START** menu. All the changes made are saved to the controller's memory and will not be erased, even after a power failure.

Changing programs

START
TEST
SETUP
PROG CHANGE

To change the program, select **PROG CHANGE** in the **START** menu.

CHANGE
Program
Time only
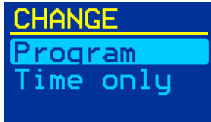
First you will be asked whether to change the **Program** or **Time only**. The latter option should be selected when you want to change only the duration of an animation that makes up the program, i.e. in this way, for example, shorten or extend the program.

PROGRAMS
Wave
News
User 1
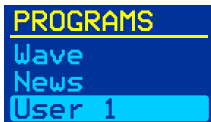
Suppose we select a program change. The next **PROGRAMS** menu will be displayed with a list of programs to be changed. To begin with, we will change one of our own user programs. So please move the highlight to **USER 1** and press **ENT**.

DIRECTION
Up
Down

In the next step, select the animation direction for going **Up** or **Down**. Suppose we choose **Up** and press **ENT**.
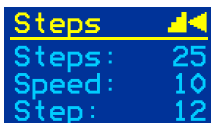
ANIMATION
Bright
AllSteps
Dark

Now we will see a list of animations (always three) for this segment (direction). Here you can see predefined animations for your own programs: brightening, permanent lighting on the stairs and dimming. We have to choose one of the animations to change and press **ENT**. Let this be the first animation — **Bright**.

ANIM. LIST
— NO ANIM —
Bright
AllSteps

The **ANIM. LIST** menu is displayed. with a long list of all available animations. Now, moving up and down we choose the appropriate animation.

ANIM. LIST
AllSteps
Dark
Steps

We will choose the Degrees animation for this exercise ◢ (up) + ◀ (switching on) as shown on the right. Now press **ENT** again to confirm your selection.

**Steps**
Steps: 25
Speed: 10
Step: 12

The controller will present the program with the selected new animation on the stairs (or on the connected tester). At that time, information about the animation will be displayed on the screen, where: **Steps** — means the set number of stairs; **Speed** — the speed set for this animation (10 - is the standard value, about 10 seconds); **Step** - This is the speed currently displayed.

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CHANGE?
No change
Yes change
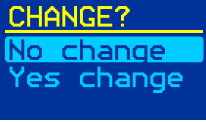
After the presentation is finished, the change confirmation screen will appear. After selecting **No change** — we will return to the list of animations and we will be able to choose a different one. By selecting **Yes change** — we accept the choice and the old animation will be replaced with the new one.

SPEED
8
9
10

The last parameter is the speed for the selected animation. Here you can change the playing time of this single animation: make it longer or shorter. The optimal pace is 10 - most often it means about 10 seconds, although for some animations the number 10 corresponds to another, e.g. shorter time. The previously set value is marked with a dot. By moving the backlight, we select the appropriate time, and by pressing **ENT** we will see the program with the changed time for the selected animation.

CHANGE?
No change
Yes change
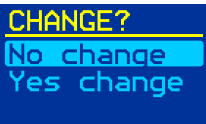
Now you need to confirm the time change. After selecting **No change** — we will return to the list of animation times and we can choose a different tempo. By selecting **Yes change** - you accept the choice and the animation time will be permanently modified.

After accepting the appropriate number with the **ENT** button, the process of changing one animation ends. We are returned to the **ANIMATIONS** menu and you can change another animation in the same segment (direction) selected at the beginning of the program.

If you want to end the changes there, you can press the **RET** or **ESC** button to return to the **START** menu. All the changes made are saved to the controller's memory and will not be erased, even after a power failure.

After programming is completed, the changed program can be started and viewed in the **START / TEST / PROG TEST / User 1** menu.

Note: The driver does not control and does not correct erroneous and illogical program modifications. Therefore, you need to be prepared for the surprising effects of programming. For example, if the **Steps** animation is set first in the segment ◀▶ turning off the lighting, at the beginning we will see the steps fading out individually, because they were not turned on before. There can be more such surprises, so you should carefully change the animations and make sure that the appropriate types of animations (direction and brightness change) are in the right places in the segment.

In order for the **User 1** program to be displayed during the controller operation, it must be activated in the menu: **START / SETUP / ACTIV PROG. / In order** (or **Random**), and then optionally select in the **One prg.** option, if only this one program is to be displayed.

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Android application
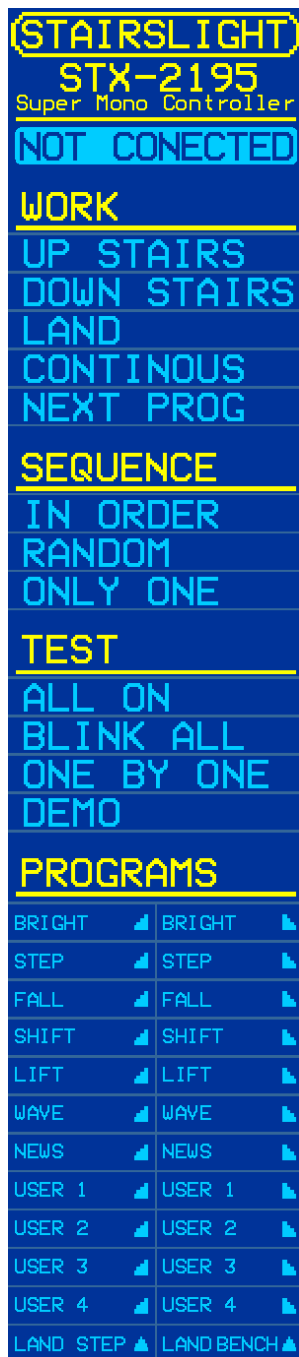
The controller can be controlled using a dedicated **Android** application for this model. **Attention! Apple's iOS is not supported!** In this case, we recommend that you buy a cheaper Android phone and install the app.

First you need to pair the driver with the phone. The readiness for pairing is signaled by the blinking red light inside the controller (visible through the housing). In the Bluetooth option, find the controller as "**STX-2195**" and pair using the password "**1234**".

Now you can download the application from the store's website from the link in the driver description or scan the **QR** code below.

After starting the application, please press the "**NOT CONNECTED**" button. From the list, select the item ending with the name of the "**STX-2195**" controller. Success is signaled by the word "**CONNECTED**" and the continuous illumination of the red light inside the controller.

By pressing the appropriate keys in the application, you can control the functions of the controller, test its operation, switch the type of operation and run specific animations.

Attention! The controller settings can only be changed using the buttons on the housing.

25