



Intelligent Stair Lighting Set

Installation and operation guide



Figure 1 - Stair lighting control unit

These motion sensor-activated LED stair lights switch on automatically to light up your stairs when you reach the top or bottom step.

Control unit SCR1 switches the lights for all stairs together. Control unit SCR2 switches each step individually, giving a sweeping motion up or down the staircase. Both controllers turn on the lights together, by gently fading out.

This document explains how to install and operate your control unit.

Contents

Contents of your set	2
Equipment required for installation	2
Safety notices	2
DIY tips and safety advice	2
Electrical work safety advice and tips	2
Installation	3
Operation of your control unit	10
Troubleshooting guide	13



Intelligent Stair Lighting Set

Installation and operation guide

Contents of your set

Your minimum set includes:

- Intelligent stair lighting touchpad control unit (SCR1 or SCR2)
- Screw terminal blocks
- Motion sensors (with 10 m three-core cable)



Figure 2 - Stair lighting set components

Optional contents (depending on set purchased):

- LED stair lighting strips with 1 m, two-core wire tails or wall recessed spotlights
- Aluminium profile, end caps and diffuser for each light strip
- Power supply unit
- DIN rail
- Timer

Equipment required for installation

You will need:

- Screws suitable for your installation and stair lighting configuration
- Adhesive tape or glue to attach motion sensors
- 2 x 0.3 mm² or 2 x 0.75 mm² wire as required to extend the tails on the stair strips
- Two core flex of sufficient length to reach your mains supply
- Electrical connector blocks
- Suitable tools for all installation steps for your stair lighting configuration



Intelligent Stair Lighting Set

Installation and operation guide

Safety notices

Please read the entire manual before proceeding with the installation!

All work should be undertaken while the power supply is disconnected from electricity!

Incorrect connection of the motion sensors, lights and the power supply can damage the controller!

DIY tips and safety advice

- Personal protective equipment. Make sure that you are equipped with suitable and sufficient personal protective equipment. This could include eye protection, face mask, protective overalls, safety footwear and gloves.
- Consider your safety! Think about the potential risks and dangers of the work and the steps you should take to avoid them.
- Ensure that the work area is sufficiently illuminated.
- Check that the tools you will be working with are in a good operating condition.

Electrical work safety advice and tips

- Ensure that a 220-240 V AC power source is available.
- An appropriate protective device e.g. fuse or miniature circuit breaker should be installed at the consumer unit. We recommend a 6 A type B MCB for this purpose. If the supply circuit to the stair lights is not dedicated, your electrician can advise on protection arrangements.
- Before undertaking any electrical connection work, ensure the circuit is isolated at the consumer unit by turning off the MCB and, if practicable, locking it in the OFF position. Working live can cause injury and can damage components of your Intelligent Stair Lighting.



Intelligent Stair Lighting Set

Installation and operation guide

Installation

Important notice about installation and warranty!

Please note that all electrical works must be carried out by a fully qualified, registered electrician in accordance with both the UK 17th Edition Wiring Regulations and the manufacturers' instructions. We are unable to refund or replace any item deemed faulty unless it has been installed by a fully qualified electrician, registered to one of the UK's five trade bodies: NICEIC, NAPIT, ECA, ELECSA, JIB. When returning a faulty item, we require full details of the installing electrician in order to verify the integrity of both the installation and electrical wiring system including fuse board and circuit protection devices. You can read more about our warranty at www.stellarlighting.co.uk/terms

If you purchased the stair lighting kit without lights, please consider the following specifications to ensure the purchased lights are compatible with the controller:

- 12 V lights only
- lights should be dimmable
- Our recommended LED light strip: SMD 3528 60LED/m with 4,8W/m
- Synchronised (SCR-1) controller: 100W total
 - DO NOT EXCEED 18m with these LED strips (SMD 3528 60LED/m)
- Cascading (SCR-2) controller: 2-20 lights, 9.6 W per light.
 - DO NOT EXCEED 180cm length per output with these LED strips (SMD 3528 60LED/m)

Before starting the installation, please check the contents of the box to make sure all components are there and read these instructions in full. Before undertaking the permanent installation, we recommend testing your set to prove its operation.

- 1) Decide on the location for your control unit and power supply. Both are designed to fit on a DIN rail (optional) for ease of installation.
- 2) Choose the instruction that matches your lights.
 - a) **Strip lights with profiles:** Attach the profile to the stairs, according to your chosen profile. Note that profiles can be cut shorter if necessary.



Intelligent Stair Lighting Set

Installation and operation guide

	Standard	Angular	Recessed	Recessed Slim
Profile type				
	<p>This profile can be fitted underneath treads or to risers, depending on your particular installation requirements. End cap adds 1.5 mm in length to each end of the profile.</p>	<p>This profile can be fitted underneath the bullnose of each stair or in the corner where the treads and risers meet. End cap adds 1.5 mm in length to each end of the profile.</p>	<p>This profile is designed to sit in a groove underneath the treads of an open staircase. Make a channel of the required depth and length using a router or other suitable tool. End cap adds 10 mm in length at the top and 9 mm on the underside to each end of the profile.</p>	<p>This profile is designed to sit in a groove underneath the treads of an open staircase. Make a channel of the required depth and length using a router or other suitable tool. End cap adds 15 mm in length at the top and 8 mm on the underside to each end of the profile.</p>

Figure 3 - profiles

All profiles are fitted by removing the diffuser, drilling the aluminium at suitable points (depending on your installation site) and screwing the profile to the stairs.

Important note!

While cutting, drilling or making recess for the screwheads for the profiles, a small amount of metallic chip and debris will remain in the profile. This can cause small short circuits over days/weeks/months and can result in the LEDs on the strips to fade out or stop working. Therefore, it is very important to thoroughly clean the profiles, before placing the LED strips inside.

b) **Spotlights:** The spotlights are suitable for surface-mounted and flush-mounted installation

The surface-mounted frame can be removed if the lights are flush-mounted.

The dimensions of the surface or flush-mounted can be seen on the diagrams below.

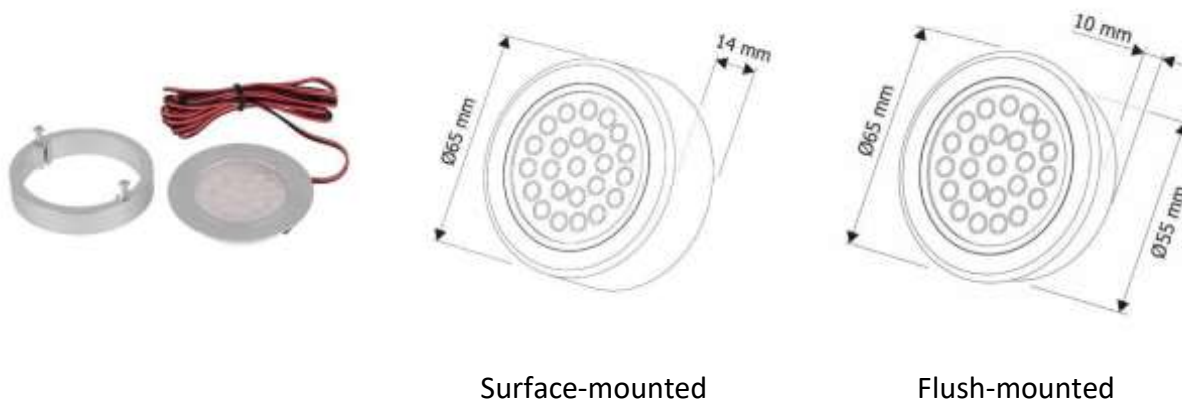


Figure 4 – Spotlight option



Intelligent Stair Lighting Set

Installation and operation guide

- 3) Position the motion sensors at the top and bottom of the stairs so that the person entering the staircase crosses the beam. The height of the motion sensor can be chosen to suit the installation site. Low sensors are discreet; placing sensors higher allows pets to pass underneath the beam so that they do not activate the lights.

We recommend installing the motion sensors on the baluster side and directing the signal towards the wall. The motion sensors are designed to have a range of 1 m – 1.3 m, though this can depend on factors such as temperature and humidity. Special attention should be paid when positioning the motion sensors to ensure they are not triggered while walking past the stairs. Fit your sensors according to their type:




Flush mounted	Surface mounted	Baluster mounted
		
<p>Prepare a suitable recess and install the back box using screws. Clip the sensors in place on the front of the box. The face plate can be painted or covered over as long as the hole in the centre remains uncovered so the beam can operate properly.</p> <p>Dimensions:</p> <ul style="list-style-type: none">● Faceplate: 7.2 cm● Depth: 4.8 cm,● Tube 6.3 cm	<p>Stick your sensors in place using double sided adhesive tape or glue.</p> <p>Dimensions:</p> <ul style="list-style-type: none">● Height 4.5cm x width 1.5cm x thickness 1.6cm	<p>Insert each sensor into a recess of the correct diameter and fix it securely using adhesive tape, glue, or an alternative method of your preference. These sensors can be filled over as long as the hole in the centre remains uncovered so the beam can operate properly.</p> <p>Dimensions:</p> <ul style="list-style-type: none">● Diameter 4cm, thickness 1.4cm

Figure 5 - Motion sensors

Motion sensors are interchangeable so it doesn't matter which goes at the top and bottom of the stairs. We provide 10 m of cable with each motion sensor, giving you flexibility on how you install your stair lights. These three-core cables can be extended if required, by making an appropriate joint.



Intelligent Stair Lighting Set

Installation and operation guide

- 4) Once motion sensors have been fitted to the staircase, they should be connected to the control unit.

This action must be performed whilst the unit is disconnected from the power supply!

It is important to connect the top sensor to the terminals marked top and the bottom sensor to the terminals marked bottom.

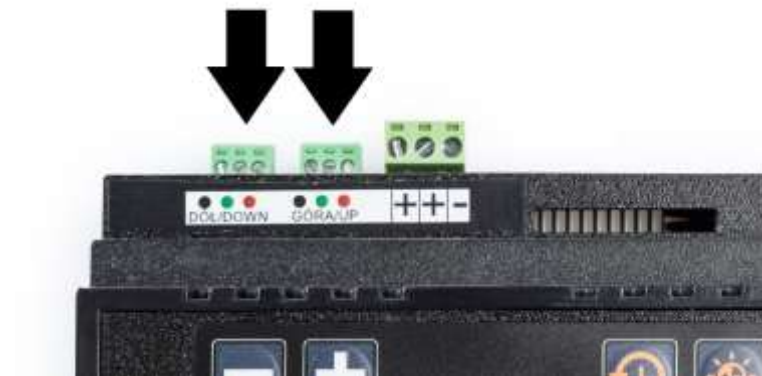


Figure 6 – Up and down sensor connection points

- Decide whether you are connecting the top or the bottom motion sensor first.
- Note that motion sensors are supplied with tails of three-core cable, coloured red, black and green. For the first motion sensor, insert each core of the cable into the terminal of the corresponding colour (with due regard to which terminals are for the top sensor and which are for the bottom) and tighten the terminal screw to grip the wire securely.

After connecting the first motion sensor, test it by temporarily connecting the power supply, according to instructions 5) to 9)

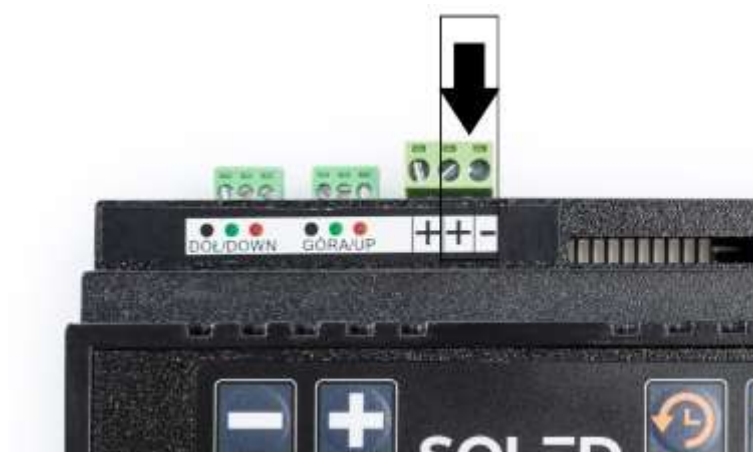


Figure 7 – Power supply connection points

- 5) Using two core flex, connect the power supply unit to the control unit, matching the + and – terminals on both units. Note that:
- terminals on the control unit are located on the top left, labelled + and -
 - terminals on the power supply unit are located on the top right, labelled V+ and V-. There are two sets of terminals; only one V+ and one V- should be used.



Intelligent Stair Lighting Set

Installation and operation guide

- 6) Connect the power supply unit to the mains, according to the diagram on the unit.
- 7) To test your installation, you need to connect one light to the control unit. Note that only the linear LED light strips supplied by us come with tails of two-core cable, coloured red and black. **NOTE:** This instruction is different for controller SCR1 and SCR2. Please follow the correct instruction for the controller you have bought.
 - a) **SCR1 only:** Insert the black wire into one of the terminals at the bottom of the control unit marked “-” and tighten the screw to secure the wire. Insert the red wire into one of the terminals marked “+”



Figure 8 – SCR-1 controller LED light connection points

- b) **SCR2 only:** Insert the black wire into the terminal at the bottom of the control unit marked “1” and tighten the screw to secure the wire. Insert the red wire into the terminal marked + on the top of the driver and tighten the screw to secure the wire.

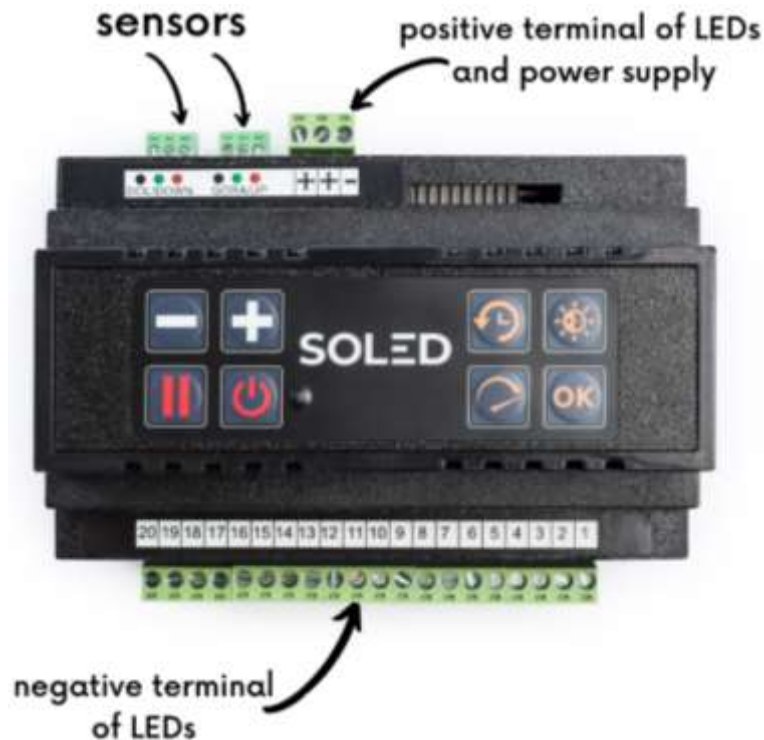


Figure 9 – SCR-2 controller LED light connection points



Intelligent Stair Lighting Set

Installation and operation guide

- 8) Check the motion sensor activates correctly. There are 10 LED indicators at the top of the controller:
- The LED in position 1 indicates that the top motion sensor has been activated.
 - The LED in position 2 indicates that the lower motion sensor has been activated.

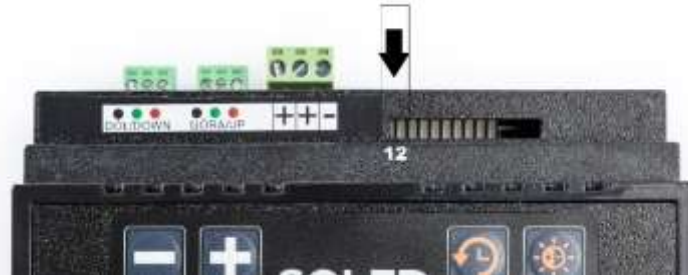


Figure 10 – Motion sensor LED indicators

Check that the correct connection has been made by activating the motion sensor and checking that the correct LED lights.

- 9) Disconnect the power supply from the mains.
- 10) Connect the second motion sensor in accordance with the colour indicators and the instructions in point 4).
- 11) **NOTE:** This instruction is different for controller SCR1 and SCR2. Please follow the correct instruction for the controller you have bought.

NOTE: The tails supplied on each LED light strip may be extended as required for your particular installation, using 2 x 0.3 mm² or 2 x 0.75 mm² wire.

- a) **SCR 1 only:** To connect the LED lights for your Intelligent Stair Lighting system, note that the control unit has terminals labelled + and -. (See Figure 7 above)
- i) If you are using LED strip lights and wish to use the end caps supplied, ensure that both cores of wire for each strip pass through one of the end caps with holes in. Ensure the cap is the correct way round so that it can be inserted into the profile end.
 - ii) Insert and secure all red wires into the terminal blocks marked as LED + on the driver
 - iii) Insert and secure all black wires into the terminal blocks marked as LED- on the driver
- b) **SCR2 only:** all black (negative) wires should be connected to the corresponding 1-20 terminal blocks. The red (positive) wires should be connected to the common terminal block marked as “+” on the top of the controller. (See Figure 8 above)
- i) If you are using LED strip lights and wish to use the end caps supplied, ensure that both cores of wire for each strip pass through one of the end caps with holes in. Ensure the cap is the correct way round so that it can be inserted into the profile end.
 - ii) Insert the negative (black) wire for each light into the terminal connector blocks, considering the numbered ordered of the lights with the corresponding marking on the controller (1-20) if you have fewer than 20 stairs, you are advised to start at number 1 for the bottom step and use consecutive terminals, corresponding to the steps that you will be lighting. It is worth labelling your wires so you know which goes to which terminal. The wires supplied may be



Intelligent Stair Lighting Set

Installation and operation guide

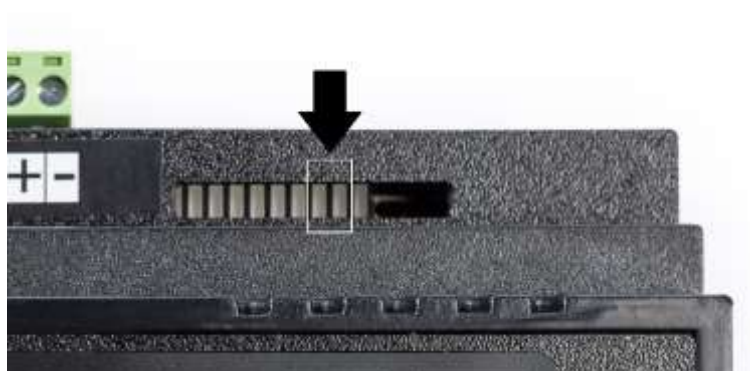
extended as required for your particular installation, using 2 x 0.3 mm² or 2 x 0.75 mm² wire. Once the wires are tightened in the terminal blocks, the terminal blocks can be fitted in the controller.

- iii) Create a common positive connection for all lights, using connector clips or via any other safe means. Insert the common positive into the terminal block labelled + on the top of the controller, tighten the screw to secure the wire and connect the terminal block to the controller.
- iv) Set the correct number of steps for your SCR2 control unit to light. To set the number of steps:
 - (1) The controller must be connected to the sensors, led fixtures and the power supply must be powered.
Please note: a suitable main powered timer can be installed between the power supply and the mains. Please follow the installation instructions for your particular timer.
 - (2) To tell the control unit how many steps are connected, press and hold the "RESET" button hidden in the upper right corner of the controller next to the indicator lights, for 5 seconds. This can be done with a screwdriver or a paperclip for example.
 - (3) The diodes blink rapidly and this will reset the driver to the default setup. Once the reset was successful, the indicator lights will turn on left to right in a sequence.



Figure 11 - Resetting the controller

- (4) After the reset, the unit is ready for the next instruction when the LEDs in positions A and B (see diagram below) are lit. These indicator lights, show the default number of light setting after the reset (6 stair lights).





Intelligent Stair Lighting Set

Installation and operation guide

Figure 12 - Resetting the controller

- (5) To increase the number of required steps, press the "+" button, each pressing will increase the value by 1 stair (at the same time the arrangement of the information diodes will change), use the "-" button to decrease the value of the degrees.
- (6) The LEDs in the array light to indicate how many steps will be controlled, according to the following pattern:

Number of steps	LED indicator position									
	1	2	3	4	5	6	7	A	B	C
1										█
2									█	
3									█	█
4								█		
5								█		█
6								█	█	
7								█	█	█
8							█			
9							█			█
10							█		█	
11							█		█	█
12							█	█		
13							█	█		█
14							█	█	█	
15							█	█	█	█
16						█				
17						█				█
18						█			█	
19						█			█	█
20						█		█		

Figure 13 - LED indicator positions



Intelligent Stair Lighting Set

Installation and operation guide

12) To complete your installation, ensure the fitting of your lights is finalised.

Disconnect the power supply from the mains while undertaking further installation works on the system!

a) **LED strip lights:**

- i) If necessary, cut LED strips to length. N.B. only cut LED strips where indicated with the scissors (✂) symbol

Important note!

While cutting, drilling or making recess for the screwheads for the protective profiles, a small amount of metallic chip and debris will remain in the profile. This can cause small short circuits over days/weeks/months and can result in the LEDs on the strips to fade out or stop working. Therefore, it is very important to thoroughly clean the profiles, before placing the LED strips inside.

- i) Peel the backing from the adhesive strip on each LED strip in turn and stick them into the profiles, ensuring they are stuck firmly.
- ii) Replace the diffuser in each profile.
- iii) Fit end caps as required.

b) **Wall recessed lights:** fit your lights securely into the recess prepared earlier.



Intelligent Stair Lighting Set

Control unit operation guide

Operation of your control unit

There are 10 LED indicators at the top of the controller.

1	Lower sensor activated
2	Upper sensor activated
3	Pause button pressed
4	On/Off (Stand-by mode)
5	Brightness
6	Duration
7	Speed
A	See Figures 17, 19 and 21 below
B	
C	




Figure 14 – LED indicator key

Your control unit has the following buttons:

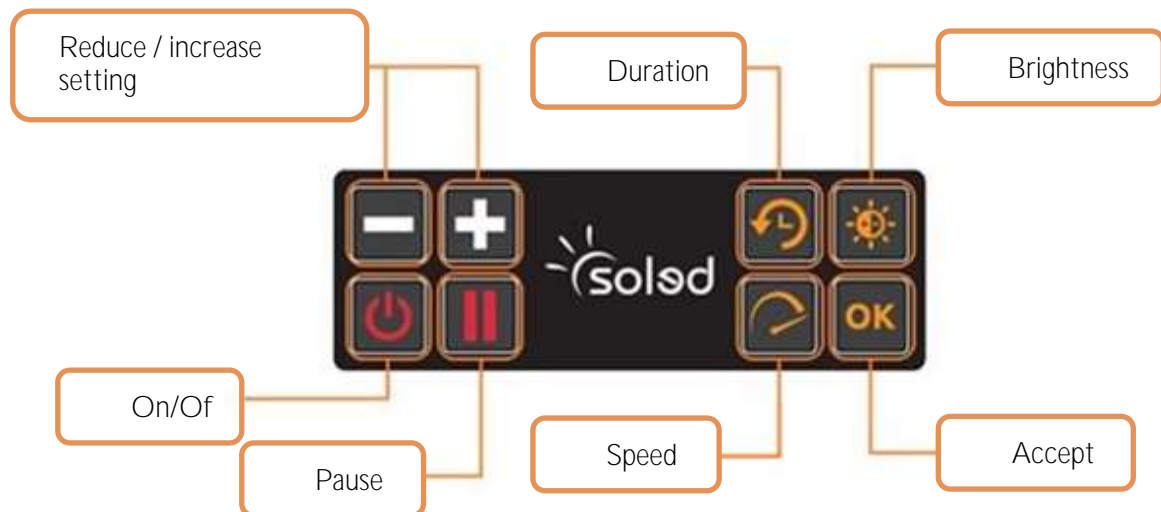


Figure 15 - Control unit buttons

On/Off: Turns the power on the control unit on or off.

Pause: Removes motion sensor control so the lights are on continuously.

Controller reset: In the unlikely event that the processor in the controller enters a hanging state and no output is generated, the control unit can be reset. Follow the steps as described in Section 11 b parts iv of this guidance to reset the controller. The indicator LEDs (top right-hand side of the control unit) will light one after another to show that the controller was reset correctly.

Function buttons:



Intelligent Stair Lighting Set

Control unit operation guide

Brightness: use this button to set the maximum brightness for your lights.

- **The controller must be connected to the motion sensors, step lights and the power supply and powered on.**
- When setting the brightness, the indicator LED number 5 should be on.

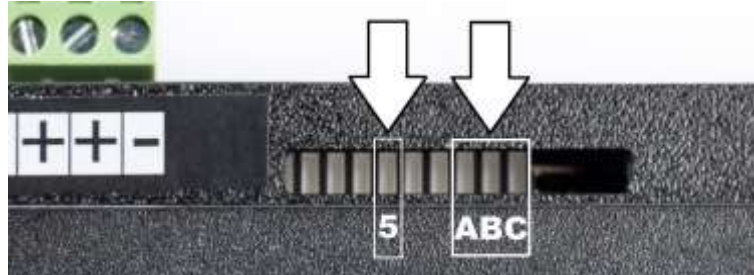


Figure 16 - Brightness level indicator lights

- After pressing the "Brightness adjustment" button, set a specific value using the "+" and "-" buttons and then confirm the changes by pressing OK.

A	B	C	Brightness
			20%
		✓	30%
	✓		40%
	✓	✓	50%
✓			60%
✓		✓	70%
✓	✓		85%
✓	✓	✓	100%

Figure 17 – Brightness level indicator settings

Duration: use this button to set the time that the set remains lit once all steps have been illuminated.

- **The controller must be connected to the motion sensors, step lights and the power supply and powered on.**
- When setting the lighting time, the diode number 6 should be on.

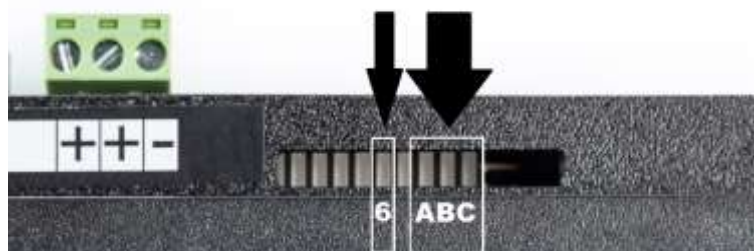


Figure 18 – Duration indicator lights



Intelligent Stair Lighting Set

Control unit operation guide

- After pressing the “Duration” button, set a specific value using the "+" and "-" buttons and then confirm the changes by pressing OK.

A	B	C	Duration	
			100% brightness	20% brightness
			0 second	0 second
		✓	10 seconds	10 seconds
	✓		20 seconds	20 seconds
	✓	✓	35 seconds	35 seconds
✓			60 seconds	60 seconds
✓		✓	120 seconds	120 seconds
✓	✓		180 seconds	300 seconds
✓	✓	✓	300 seconds	420 seconds

Figure 19 – Duration length settings

Speed: use this button to control the speed of illumination (SCR2 only).

- **The controller must be connected to the motion sensors, step lights and the power supply and powered on.**
- When setting the brightness, the LED number 7 should be on.

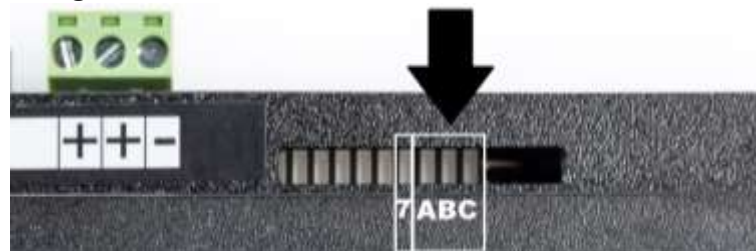


Figure 20 – Speed indicator lights

- After pressing the “Speed” button, set a specific value using the "+" and "-" buttons and then confirm the changes by pressing OK.

A	B	C	Speed
			Slowest
		✓	↓
	✓		
	✓	✓	
✓			
✓		✓	↓
✓	✓		
✓	✓	✓	
✓	✓	✓	

Figure 21 – Speed settings



Intelligent Stair Lighting Set

Troubleshoot Guide

Troubleshooting guide

If your set is not behaving in the way you expect, please consult the following troubleshooting tips for information that may resolve the issue.

LED strips:		
Issue	Troubleshooting steps	Further action
An LED strip is not working or its brightness doesn't match other strips	Find out if the issue is with the LED strip or the controller slot: <ul style="list-style-type: none">• Are other LED strips working fine?• What happens if you connect other LED strips to the same controller slot?• What happens if you connect the examined LED strip to a different controller slot?	If the issue is with the controller: see Controller troubleshoot . If the issue is with the LED strip: <ul style="list-style-type: none">• Look for externally visible faults on the strip• Look for broken soldering/connection
Motion sensors:		
Issue	Troubleshooting steps	Further action
Sensor(s) are not triggering the lights:	<ul style="list-style-type: none">• Make sure lights work• Check sensor's connection to controller• Check controller programming• Swap sensors in controller slot to check if the issue is with one sensor, with both or the controller slot.• Clean the sensor with a clean cloth• Make sure the sensor is levelled	
Sensor is overly sensitive or not sensitive enough	<ul style="list-style-type: none">• Clean the sensor with a clean cloth• Ensure there's nothing in the way of the sensor by default• Make sure the sensor is levelled• Place a see-through tape over the sensor	
Sensor is triggered when walking past the stairs:	<ul style="list-style-type: none">• Position the sensor in a way that the beam hits the baluster on the opposite side• Place the sensor on the baluster so it's directed towards the wall.• Adjust the sensor angle so it's pointing downwards	



Intelligent Stair Lighting Set

Troubleshoot Guide

Controller:		
Issue	Troubleshooting steps	Further action
Only the first six lights come on	Follow the guidance on setting up your controller in instruction 11)b)iv) (page 7)	
I've set up the controller but set it for the wrong number of stairs	Reset the controller and set the correct number of steps by following the guidance on setting up your controller in instruction 11)b)iv) (page 7)	
The lights all come on together and I expected them to come on one by one	Reduce the speed	<ul style="list-style-type: none">• Press the speed button (see 10 on page)• Press the +/- buttons followed by OK until you are happy with the speed
The lights are too bright/ not bright enough	Adjust the brightness	<ul style="list-style-type: none">• Press the brightness button (see 10 on page)• Press the +/- buttons followed by OK until you are happy with the brightness
The lights stay on too long/ not long enough	Adjust the duration	<ul style="list-style-type: none">• Press the duration button (see Figure 10 on page)• Press the +/- buttons followed by OK until you are happy with the duration
Nothing happens at all	Try resetting the controller following the guidance on setting up your controller in instruction 11)b)iv) (page 7)	
Timer		
Issue	Troubleshooting steps	Further action
Timer is not working	Refer to the Timer manual's wiring diagram and operating instructions.	

If the above steps don't resolve the problem, please contact Stellar Lighting Ltd., by sending an email to info@stellarlighting.co.uk with the following content:

- Your order reference number,
- Detailed description of the issue/fault and any attempts taken to resolve it,
- Photos of the problematic part and the controller's wiring.