



# 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 on together.

Control unit SCR2 switches each step individually, giving a sweeping motion up or down the staircase.

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

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### Contents of your set

Your set includes:

- Intelligent stair lighting touchpad control unit (SCR1 or SCR2)
- Motion sensors (one with 5 m and one with 15 m three-core cable)
- DIN rail

Optional contents (depending on set purchased):

- LED stair lighting strips with 1 m, two-core wire tails and aluminium profile, end caps and diffuser for each light strip
- Wall recessed spotlights
- Flush mounted luminaires for stair-side illumination
- Power supply unit
- 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 mm<sup>2</sup> or 2 x 0.75 mm<sup>2</sup> 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

### Safety notices

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 guide

### Installation

Before starting 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 (supplied) 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.

	Standard	Angular	Recessed	Recessed Slim
Profile type				
	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.	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.	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 under-side to each end of the profile.	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 under-side to each end of the profile.

Figure 2 - 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.

- b) Wall recessed lights: Prepare a suitable recess for each light, using back boxes as required for your installation site. Take care to ensure all wires are routed in a way that is safe and, for the best effect, hidden. Wall light dimensions: rectangular: 75 mm x 75 mm, round: 70 mm diameter. Recessed back box dimensions: 60 mm (diameter)x 62 mm (depth)



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### Wall recessed spotlights

Rectangular option	Round option 1	Round option 2
		

Figure 3 – Wall recessed spotlight options

- 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"><li>• Faceplate: 7.2 cm</li><li>• Depth: 4.8 cm,</li><li>• Tube 6.3 cm</li></ul>	<p>Stick your sensors in place using double sided adhesive tape or glue.</p> <p>Dimensions:</p> <ul style="list-style-type: none"><li>• Height 4.5cm x width 1.5cm x thickness 1.6cm</li></ul>	<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.</p> <p>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"><li>• Diameter 4cm, thickness 1.4cm</li></ul>

Figure 4 - Motion sensors



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Motion sensors are interchangeable so it doesn't matter which goes at the top and bottom of the stairs. We provide 5 m of cable for one sensor and 15 m of cable for the other, giving you flexibility on how you install your stair lights. These three-core cables can be extended if required, by making an appropriate joint.

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

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

- a) Decide whether you are connecting the top or the bottom motion sensor first.
- b) 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.

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

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

- 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.
- 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 “+”
  - 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 A and tighten the screw to secure the wire.
- 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.



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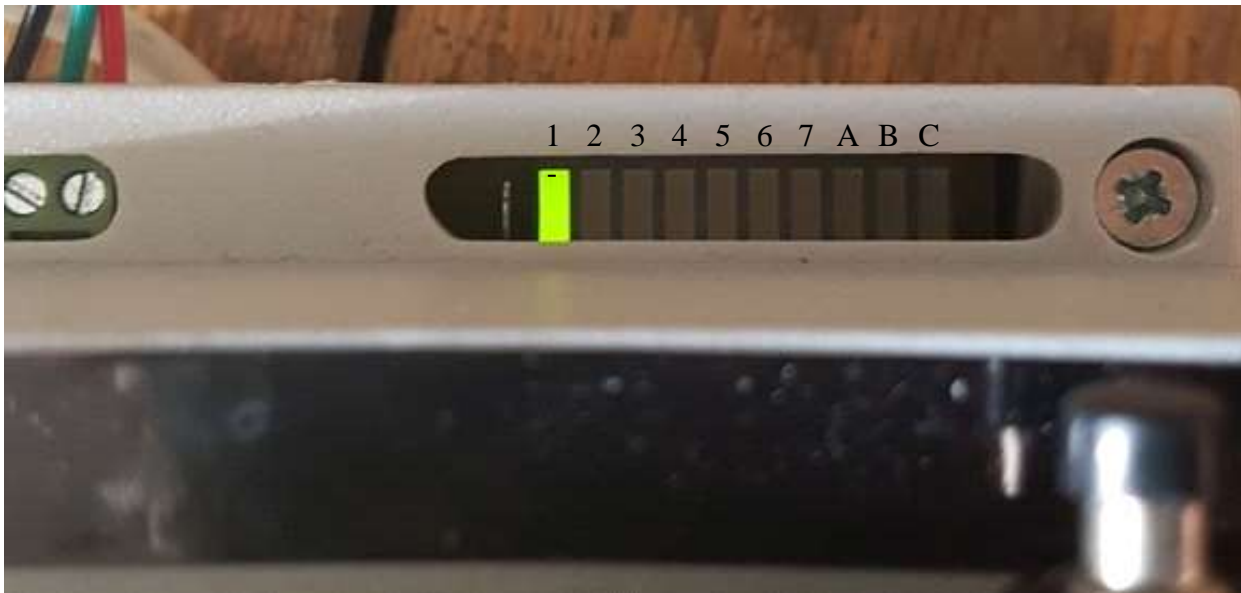


Figure 5 - LED indicators

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 mm<sup>2</sup> or 2 x 0.75 mm<sup>2</sup> 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 -.



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Figure 6 - Connecting SCR1

- 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 red wires from all steps into a connector block to create a common positive. Insert the black wires from all steps into a connector block to create a common negative.
  - iii) Insert the common negative into one of the terminals labelled – and tighten the screw to secure the wire in place. It does not matter which terminal you use.
  - iv) Insert the common positive into one of the terminals labelled + and tighten the screw to secure the wire in place. It does matter which terminal you use.
- b) SCR2 only: To connect the LED lights for your Intelligent Stair Lighting system, note that there are terminals labelled 1-21. These terminals correspond to the order of the stairs. The terminal labelled A is a common positive for all stairs.

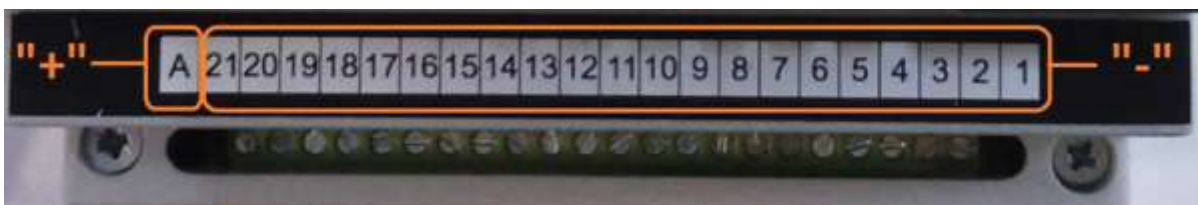


Figure 7 - Terminals on SCR2

- 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 a different numbered terminal and secure the wire. If you have fewer than 21 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





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your wires so you know which goes to which terminal. The wires supplied may be extended as required for your particular installation, using 2 x 0.3 mm<sup>2</sup> or 2 x 0.75 mm<sup>2</sup> wire.

- 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 labelled A and tighten the screw to secure the wire.
- iv) Set the correct number of steps for your SCR2 control unit to light. To set the number of steps:
  - (1) Locate the recessed reset button on the front panel of the controller
  - (2) Push the reset button with a screwdriver, straightened paper clip or a similar device. This will reset the driver to the default setup.



Figure 8 - Resetting the controller

If the unit is operating correctly, the LEDs on the driver illuminate from left to right in turn. The unit is ready for the next instruction when the LEDs in positions A and B (see diagram below) are lit.

- (3) To tell the control unit how many steps are connected, press the “+” and “-” buttons to increase or decrease the set number. The default number of steps for control unit SCR2 is 6. This is the minimum number of stairs that control unit SCR2 is designed to operate. Each press increases or decreases the number of steps by one. The LEDs in the array light to indicate how many steps will be controlled, according to the following pattern:





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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						█		█		
21						█		█		█

Figure 9 - LED indicator positions

### 12) Reconnect the power supply.

Please note: a suitable mains powered timer can be installed between the power supply and the mains. Please follow the installation instructions for your particular timer.

### 13) To complete your installation, ensure the fitting of your lights is finalized.

#### a) LED strip lights:

- i) If necessary, cut LED strips to length. N.B. only cut LED strips where indicated with the scissors (✂) symbol
- ii) Peel the backing from the adhesive strip on each LED strip in turn and stick them into the profiles, ensuring they are stuck firmly.
- iii) Replace the diffuser in each profile.
- iv) 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

Your control unit has the following buttons:

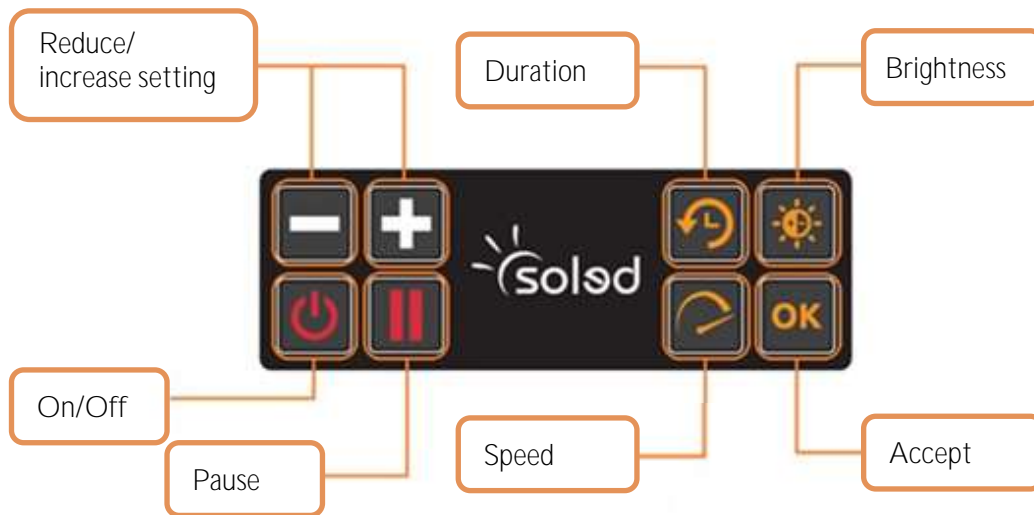


Figure 10 - Control unit buttons

**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 d parts i and ii (SCR2 version, page 12) 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:**

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

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

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

To set your chosen parameters:

- 1) Press the button for the function that you wish to set (duration, brightness, speed)
- 2) Adjust the parameter to the desired setting using the + and – buttons
- 3) Press OK to accept the changes.



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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
5	Brightness
6	Duration
7	Speed
A	See below
B	
C	

Figure 11 - LED indicator key

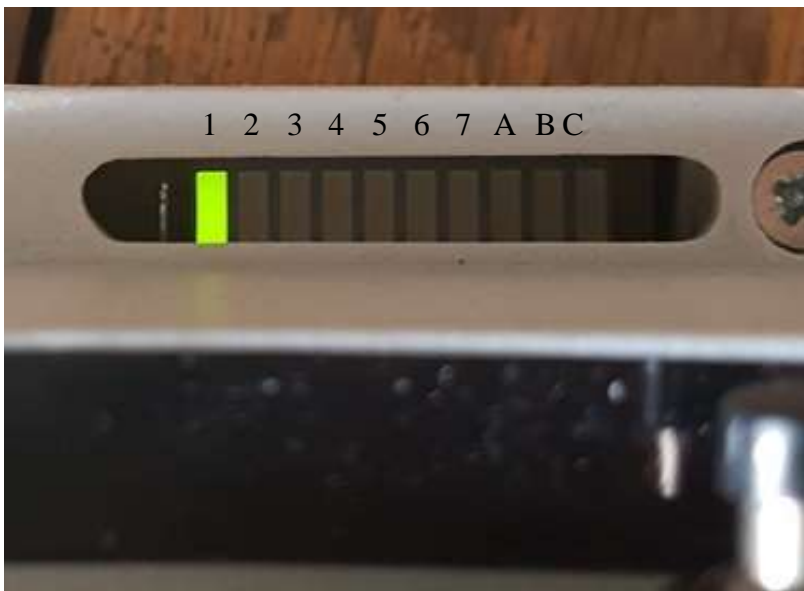


Figure 3 - LED indicators



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LEDs A, B and C together indicate the values selected.

A	B	C	Brightness	Duration		Speed
				100% brightness	20% brightness	
			20%	0 sec	0 sec	Slowest
		■	30%	10 sec	10 sec	
	■		40%	20 sec	20 sec	
	■	■	50%	35 sec	35 sec	
■			60%	60 sec	60 sec	
■		■	70%	120 sec	120 sec	
■	■		85%	180 sec	300 sec	
■	■	■	100%	300 sec	420 sec	Fastest

Figure 13 – Indicator key for LEDs A, B and C

N.B. Both speed and duration depend on the brightness of the lights. You are advised to set the required brightness first and adjust the other parameters accordingly.



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



# 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"><li>• Press the speed button (see 10 on page 10)</li><li>• Press the +/- buttons followed by OK until you are happy with the speed</li></ul>
The lights are too bright/ not bright enough	Adjust the brightness	<ul style="list-style-type: none"><li>• Press the brightness button (see 10 on page 10)</li><li>• Press the +/- buttons followed by OK until you are happy with the brightness</li></ul>
The lights stay on too long/ not long enough	Adjust the duration	<ul style="list-style-type: none"><li>• Press the duration button (see Figure 10 on page 10)</li><li>• Press the +/- buttons followed by OK until you are happy with the duration</li></ul>
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](mailto: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.