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DALC
NET

Spi
Controller
For
Digital
LED Strip

Dalcnet Spi Controller For Digital LED Strip Owner's Manual

Contents

Dalcnet Spi Controller For Digital LED Strip

Product Information

Specifications:

- **Description:** Running-Light User Manual
- **Nominal Supply Voltage:** 5-24 Vdc
- **Output Current (max):** 7A
- **Rated Power Output:** 35W @ 5V, 84W @ 12V, 168W @ 24V
- **Efficiency at full load:** >95%
- **Standby power absorption:** <0.5W
- **Output Load type:** IC LED type
- **Storage temperature:** Min: TSTORE, Max: TSTORE
- **Working Ambient temperature:** TA
- **Max Temperature @Tc point:** TC
- **Connector Type:** CONTYPE
- **Wiring Section:** WSOLID, WSTRAND, WSTRIP
- **Strip length:** WSSTRIP
- **Protection class:** IPCODE
- **Casing Material:** MC
- **Packaging units:** PU
- **Mechanical Dimensions:** MD

- **Weight:** W

Product Usage Instructions

Installation:

- Ensure the input power supply voltage is within the range of 5-24 Vdc.
- Connect the device using the specified connector type and wiring sections.

Operation:

- Power on the device and select the desired dynamic effect using the control options available.
- Configure DALI parameters as needed for your application.

Maintenance:

- Regularly check for proper functioning and cleanliness of the device.
- Keep the device within the specified temperature ranges for optimal performance.

Frequently Asked Questions (FAQ)

- **What is the maximum output current supported by the device?**
  The device supports a maximum output current of 7A.
- **How can I access the most up-to-date manual for the product?**
  You can visit our website at www.dalcnet.com or scan the QR code provided in the manual.

FEATURES

- SPI CONTROLLER for Digital LED-Strip
- **Power supply (DC IN):** 5-12-24 Vdc
- **Output (OUT):** value equal to input voltage
- RGB and WWW Light Control
- Local control via Normally Open (N.O.) Pushbutton
- Remote control via BUS (DALI)
- Master/Slave functionality (SYNC)
- Device configuration via Dalcnet LightApp© mobile application, parameters can be set:
    - Integrated Circuit (IC) LED type
    - Control and Colour Type
    - Up to 10 dynamic effects
    - DALI parameters
    - Power-ON state
    - Transition Parameters (Fade)
    - DALI Groups and Scenes
- Opto-Isolated BUS Input

- Extended temperature range
- 100% Functional test

PRODUCT DESCRIPTION

- RUNNING-LIGHT is an SPI controller for pixel-to-pixel LED control on digital (programmable/addressable) LED strips, which can be connected to a SELV constant voltage (5 ÷ 24) Vdc power supply. The controller is suitable for driving loads such as Digital LED-strips and RGB or WWW LED modules at constant voltage. It can be controlled locally via Normally Open (N.O.) pushbutton or remotely via DALI (Digital Addressable Lighting Interface) digital protocol.
- RUNNING-LIGHT can deliver a maximum output current of 7 A and has the following protections: over-voltage and under-voltage protections, reverse polarity protection and input fuse protection.
- Through the Dalcnet LightApp© mobile application and smartphones equipped with Near Field Communication (NFC) technology, it is possible to configure multiple parameters when the device is switched OFF, including up to 10 different light effects, colour, speed, direction, pixel length, and transition parameters. Dalcnet LightApp© can be downloaded free of charge from the Apple APP Store and Google Play Store.

PRODUCT CODE

CODE	POWER SUPPLY	LED OUTPUTS	N° OF CHANNELS	BUS CONTROL	LOCAL CONTROL	APP CONFIG
RUNNING-LIGHT	5-12-24 VDC	7 A (max) **1**	1	DALI	N°1 N.O. Pushbutton	LightApp©

PROTECTION AND DETECTION

The following table shows the types of incoming and outgoing protection/detection present on the device.

ACRONYM	DESCRIPTION	TERMINAL	PRESENT
IFP	Input Fuse Protection**2**	DC IN	✔
OVP	Over Voltage Protection**2**	DC IN	✔
UVP	Under Voltage Protection**2**	DC IN	✔
RVP	Reverse Voltage Polarity**2**	DC-IN	✔

REFERENCE STANDARDS

RUNNING-LIGHT complies with the regulations shown in the table below.

STANDARD	TITLE
EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547	Equipment for general lighting purposes – EMC immunity requirement
EN 61347-1	Lamp Controlgear – Part 1: General and safety requirement
EN 61347-2-13	Lamp controlgear – Part 2-13: Particular requirement for d.c. or a.c. supplied electronic Controlgear for LED modules

TECHNICAL SPECIFICATIONS

Description	Name	Values			Unit of Measure	Note
		Min		Max		
INPUT (Power Supply DC IN)						
Nominal Supply Voltage	VIN	5	12	24	Vdc	–
Supply Voltage range	VIN-RNG	5	÷	24	Vdc	–
Efficiency at full load	EFF	> 95			%	–
Standby power absorption	PSTBY	< 0.5			W	–
OUTPUT (Channel OUT)						
Output Voltage	VOUT	= VIN			–	–
Output Current (max)	IOUT-max	7			A	–
Rated Power Output	POUT	@5V	@12V	@24V	W	Rated @TA<35 °C.
		35	84	168		
Load type	LTYPE	Digital LED Strip			–	Defined by design
IC LED type	ICTYPE	WS2811, WS2812, WS2815, UCS1603, UCS1903, GS8206, TX1818			–	Defined by design
ENVIRONMENTAL						
Storage temperature	TSTORE	-40	÷	+60	°C	Minimum values defined by design
Working Ambient temperature	TA	-10	÷	+60	°C	

Max Temperature @Tc point	TC	–	–	+80	°C	–
Connector Type	CONTYPE	Push-in terminals			–	–
Wiring Section	WSSOLID	0.5	÷	1.5	mm2	Defined by design
	WSSTRAND	20	÷	16	AWG	
Strip length	WSSTRIP	10			mm	–
Protection class	IPCODE	IP20			–	–
Casing Material	MC	plastic			–	–
Packaging units (pieces/units)	PU	1			pcs	–
Mechanical Dimensions	MD	L	H	D	mm	–
		186	29	21		
Weight	W	56			g	Including packaging

TC POINT POSITIONING

The figure below shows the positioning of the maximum temperature point (Tc point, highlighted in red) reached by the electronics inside the enclosure. It is located on the front side (Top) near the LED output connector.

Figure 1: T_c point position

INSTALLATION

ATTENTION! Installation and maintenance must always be carried out in the absence of voltage.

- Before proceeding with the connection of the device to the power supply, make sure that the voltage of the power source is disconnected from the system.
- The device should only be connected and installed by qualified personnel. All applicable regulations, legislation, standards, and building codes must be adhered to. Incorrect installation of the device may cause irreparable damage to the device and connected loads.

The following paragraphs show the diagrams of the dimmer's connection to the remote control, the load and the supply voltage. It is recommended to follow these steps to install the product safely:

1. **Load wiring:** connect the Digital LED-strip load wires to the "OUT" terminal, the positive wire to the "V+" symbol, the negative wire to the "V-" symbol, and the Data-IN wire to the "DATA" symbol.
2. **Local Control wiring:** connect the N.O. pushbutton to the "INPUT" terminal with the ⌐ symbol.
3. **Remote Control wiring:** connect the DA data bus signals to the "DALI" terminals with the "DA" symbols.
4. **Sync wiring:** connect all the Sync wires to the "BUS" terminal with one twisted wire pair shielded cable, the Data-B(+) signal to the "D+" symbol, the Data-A(-) to the "D-" symbol, and the Common signal to the "COM" symbol.
5. **Power Supply wiring:** connect a 5 Vdc, 12 Vdc, or 24 Vdc constant voltage SELV power supply (depending on the nameplate data of the LED load) to the "+" and "-" terminals of the DC IN terminal.

LOAD WIRING
RUNNING-LIGHT has one output channel that can be drive a Digital LED strip RGB or WWW. The type of colour, the IC LED type, and the number of LED elements to be driven are configurable from Dalcnet LightApp© (refer to §Control Settings section).

DIAGRAM FOR DIGITAL LED LOADS
The following connection diagram (Figure 2) allows you to drive one Digital LED load.

Figure 2: Connection diagram for Digital LED loads

For higher Load current (> 7A) it is recommended to use the following connection diagram, bypassing the V+ and V- signals of the OUT terminal and connecting the digital LED strip Supply Voltage terminals directly to the Power Supply.
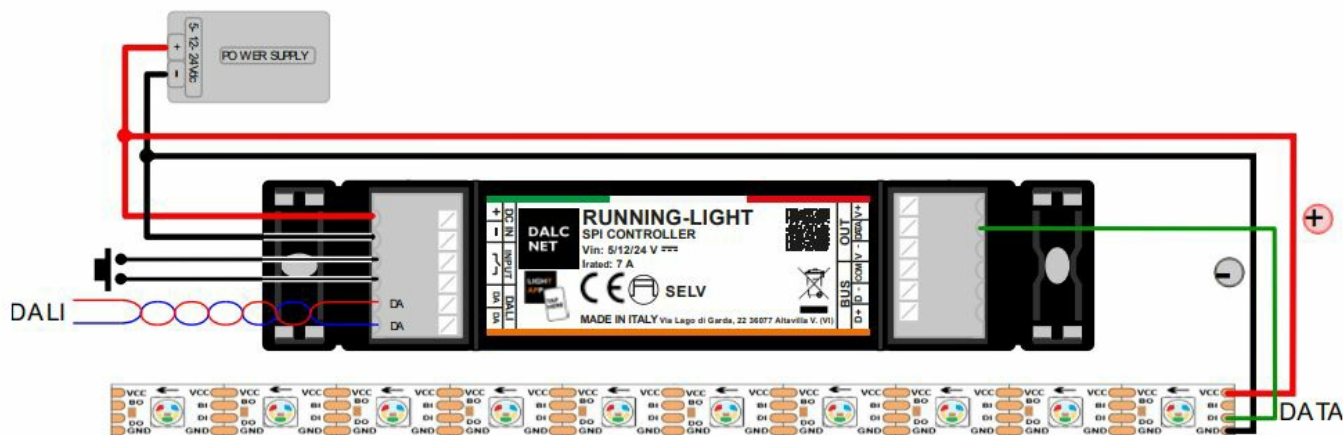

Figure 3: Connection diagram for Digital LED loads (> 7A)

LOCAL CONTROL WIRING
RUNNING-LIGHT can be controlled via Local Control with one Normally Open (N.O.) pushbutton or voltage-free

dry contact. No other voltage signals shall be applied to these contacts.

- To connect the RUNNING-LIGHT to local control, simply connect the pushbutton to the INPUT terminal. The following image shows the indicated wiring diagram for short distances (<10 m).
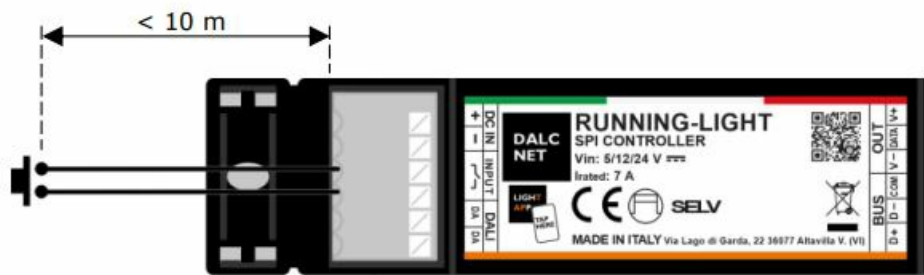

Figure 4: Local Command wiring diagram for Short Distances

- For longer distances (>10 m), it is recommended to use an N.O. dry contact relay module, connected between the "Input" terminal of the RUNNING-LIGHT and the power source (e.g. mains voltage 230 Vac). Figure 5 shows an example of a Local Command wiring recommended for long distances.
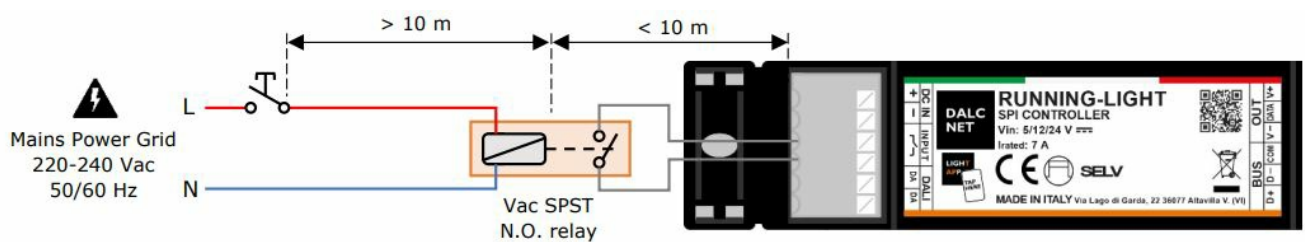
Figure 5: Local Command wiring diagram for Long Distances

REMOTE CONTROL WIRING

- RUNNING-LIGHT can be controlled remotely via DALI digital bus by means of a simple two-wire cable (untwisted and unshielded). The control is carried out by means of a DALI Master, which provides commands to the devices in the DALI network and, if necessary, power supply3 to the network itself.
- To connect RUNNING-LIGHT to the DALI network, simply connect the bus cables to the "DA" terminals of the "DALI" terminal: as different topologies are possible, it is not necessary to observe the polarity of the "DA+" and "DA-" signals of the bus when connecting.

DALI WIRING TOPOLOGIES

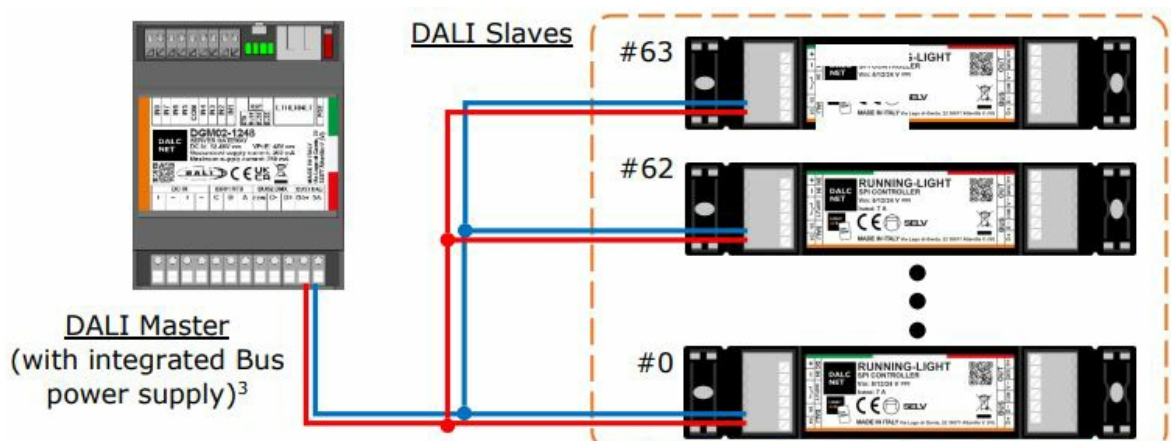- The DALI protocol supports several wiring topologies, i.e. Bus-wiring, shown as an example in Figure 6.

Figure 6: Remote Control Connection Topology, Bus-wiring

- The DALI protocol supports up to 64 Control Gear slave devices (e.g. RUNNING-LIGHT) connected with different wiring topologies shown in Figure 7: Bus-wiring, Star-wiring, Tree-wiring, or Line-wiring. Other topologies are excluded.
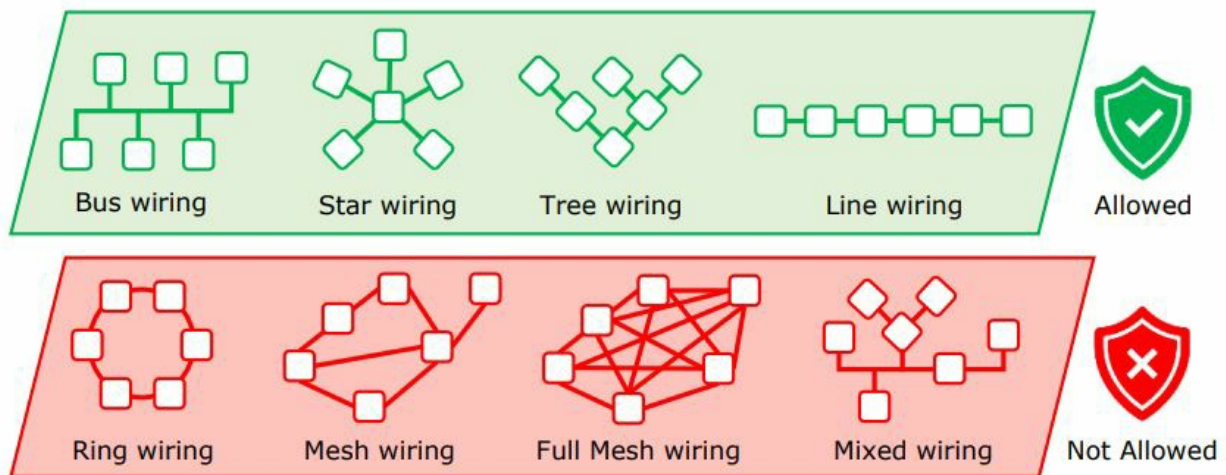

Figure 7: DALI wiring Topologies

SYNC WIRING

- It is possible to connect multiple devices of RUNNING-LIGHT family among them in Master/Slave mode, connecting the local control (i.e. push-button) and/or the remote control (i.e. DALI) to the dedicated terminals of device that will be used as Master, then wiring the "BUS" signals from Master to the "BUS" terminal on Slave devices.
- Following diagrams shows two different sync wiring configurations, depending to the sync cable used.
  - RUNNING-LIGHT devices can be powered by a single DC power supply or by a dedicated DC power supply for each device. In any case, make sure that the rating data of the power source(s) comply with the requirements listed in Table 4.
  - The BUS terminal is a RS485 interface and requires 3-wire twisted pair shielded cable. 2-wire twisted pair shielded cable can be used too.
  - Keep the distances from the twisted pair to the device as short as possible.
  - It is possible to configure Master & Slave system up to 10 total devices, with maximum cable length of 15m between each device.

DIAGRAM WITH 3-WIRE (TWISTED PAIR PLUS COMMON) SHIELDED CABLE

- On 3-wire (twisted pair plus common) shielded cable, connect the common wire to the COM signal and the twisted pair to the D+ and D- signals on BUS terminals. The cable's shields shall be connected all together and to the Earth Ground at one end only.
- In case of 4-wire (twisted pairs) shielded cable, simply use one twisted pair for COM signal (with pair wires connected) and the other twisted pair for differential D+ and D- signals.
- The following diagram is recommended for cabling path near disturbance sources (e.g. Mains grid, wireless router, etc.) and in general to improve disturbance immunity at BUS side.
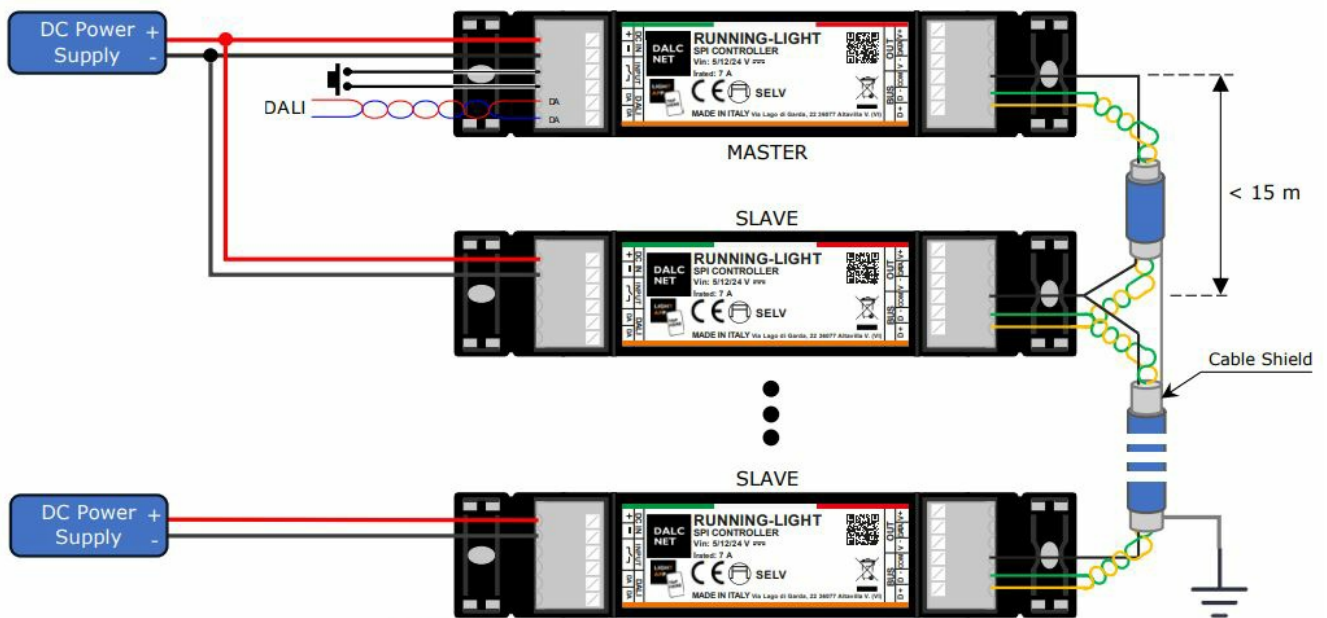
Figure 8: Sync wiring diagram with 3-wire shielded cable

DIAGRAM WITH 2-WIRE (TWISTED PAIR) SHIELDED CABLE

In case of twisted pair shielded cable (no Common wire) connecting the RUNNING-LIGHT devices, wire the COM signals to the cable's shield and the twisted pair to the D+ and D- signals on BUS terminals.
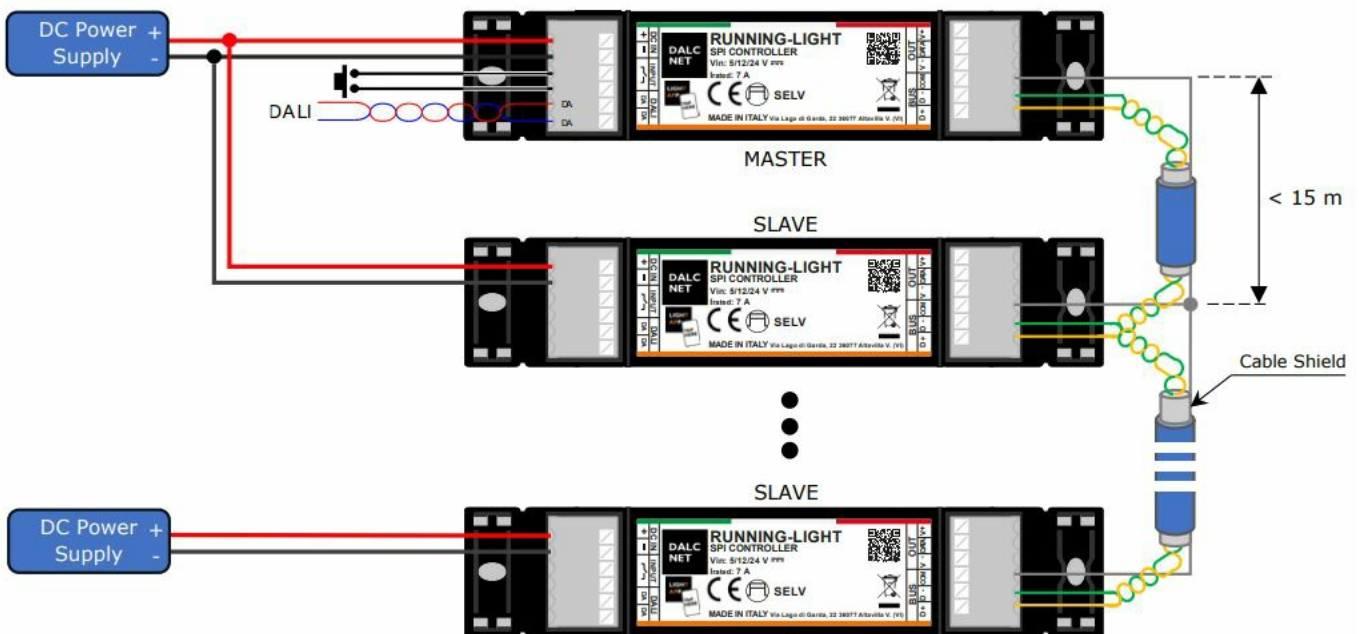

Figure 9: Sync wiring diagram with 2-wire shielded cable

POWER SUPPLY CONNECTION

RUNNING-LIGHT can be powered by a 5 Vdc, 12 Vdc or 24 Vdc constant voltage SELV power supply, depending on the operating voltage of the LED load. Once all above connections are performed, connect the power supply to the "+" and "-" terminals of the DC IN terminal.

Figure 10: Power Supply Connection Diagram

LOCAL CONTROL: PUSHBUTTON

RUNNING-LIGHT has one dry contact input for N.O. pushbutton, through which different operating parameters can be managed. Each action on the pushbuttons activates a specific function for the Effect selected via LightApp© mobile app.

PUSHBUTTON FUNCTIONALITIES FOR "STATIC", "FILL", "WAVE", "RAINBOW", AND "FIRE" EFFECTS
Following table depicts the pushbutton functionalities for the following effects: Static, Fill, Wave, Rainbow, and Fire.

ACTION	FUNCTION
Quick push	ON/OFF of the LED module.
Long push	Brightness adjustment (Dimming)
Triple quick push	Change the effect [4]. The Effect list can be configured from LightApp© mobile app (refer to §Control Settings section).

Table 5: Pushbutton functionality for "STATIC", "FILL", "WAVE", "RAINBOW", and "FIRE" effects

PUSHBUTTON FUNCTIONALITIES FOR "FILL PARTIAL" EFFECT
In Fill Partial effect, the pushbuttons take over ON/OFF control functions, to adjust the brightness and to set the Partial sector length.

ACTION	FUNCTION
Quick push	ON/OFF of the LED module. Stop the Fill effect on the configured Partial sector.
Double quick push	Start the Fill effect on the configured Partial sector.
Long push (> 1s) from ON	Brightness adjustment (Dimming).
Long push (> 1s) from OFF	Configure the Partial Sector on the LED strip. LEDs starts to power ON one at a time to create the Partial sector on the LED strip.
Triple quick push	Change the effect [4]. The effect list can be configured from LightApp© mobile app (refer to §Control Settings section).

Table 6: Pushbutton functionality for "FILL PARTIAL" effect

PUSHBUTTON FUNCTIONALITIES FOR "HORSE RACE" AND "PLASMA" EFFECTS

In Horse Race and Plasma effect, the pushbuttons take over the Start (ON)/OFF the Horse/Plasma sector.

ACTION		FUNCTION
	Quick push	Start (ON)/OFF of the Horse/Plasma sector on LED module. The background intensity remains unchanged.
	Triple quick push	Change the effect [4]. The effect list can be configured from LightApp© mobile app (refer to §Control Settings section).

Table 7: Pushbutton functionality for "HORSE RACE" and "PLASMA" effects

PUSHBUTTON FUNCTIONALITY FOR "RANDOM" EFFECT

In Random effect, the pushbuttons take over Start/Stop the effect.

ACTION		FUNCTION
	Quick push	Start/Stop of the effect on LED module.
	Triple quick push	Change the effect [4]. The effect list can be configured from LightApp© mobile app (refer to §Control Settings section).

Table 8: Pushbutton functionality for "RANDOM" effect

REMOTE CONTROL: DALI

DALI (Digital Addressable Lighting Interface) is a protocol developed by the DALI Alliance (DIIA) to allow the management, configuration and programming of LED lighting systems in digital mode: through a two-way communication process between devices and control units, it is possible to execute ON, OFF or dimmer commands, report faults or information of various kinds. Based on a Master/Slave architecture, the DALI standard allows both single digital control of devices and programming in groups and/or broadcast.

PROFILE MAPPING: OPERATION MODE

- The DALI protocol provides two configurations depending on the light characteristics to be obtained through the LED module connected to the outputs. Each profile is composed of a defined number of 8-bit channels, whose values can be set in the range (0 ÷ 255), each of which represents a light characteristic to be modulated on the LED load.
- RUNNING-LIGHT currently only supports the DT6 profile, future updates may be released in the future. The "DT6" profile allows you to adjust the light intensity for of all the effect set in the dedicated LightApp© section.

Address	Function	Level	
A0	INTENSITY	DALI LEVEL 0...255	
A0	FILL LENGHT [5]	0	255

Table 9: DALI profile map

THERMAL CHARACTERIZATION

- Figure 11 shows the maximum output current values that can be provided by the RUNNING-LIGHT as a function of the operating temperature6 (or ambient temperature, TA) of the operation, summarized below:

$$T_A = (-10 \div +60)\ °C \qquad \dashrightarrow \qquad I_{OUT} \leq 7\ A$$

- These maximum current (total) values can only be applied under proper ventilation conditions.
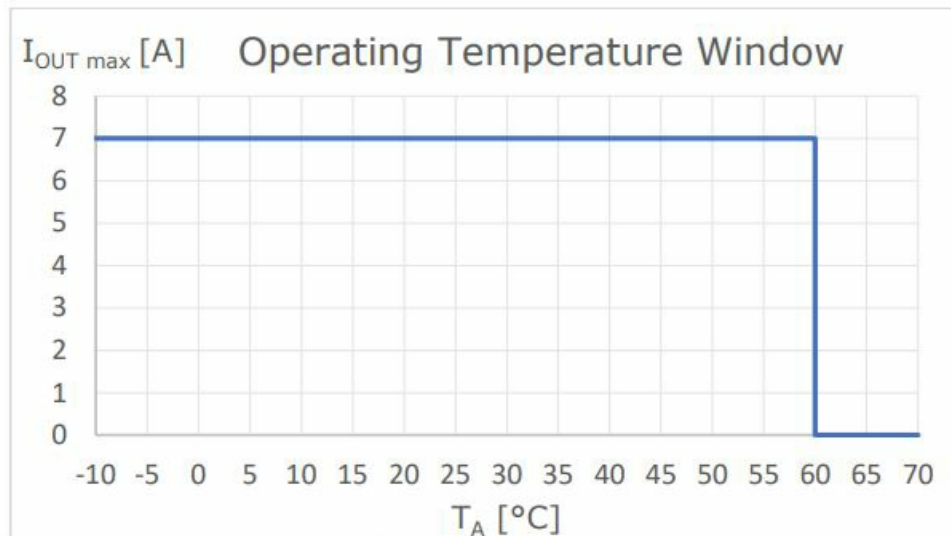

Figure 11: Operating Temperature Window

MECHANICAL DIMENSIONS

Figure 12 details the mechanical measurements and the overall dimensions [mm] of the outer casing.
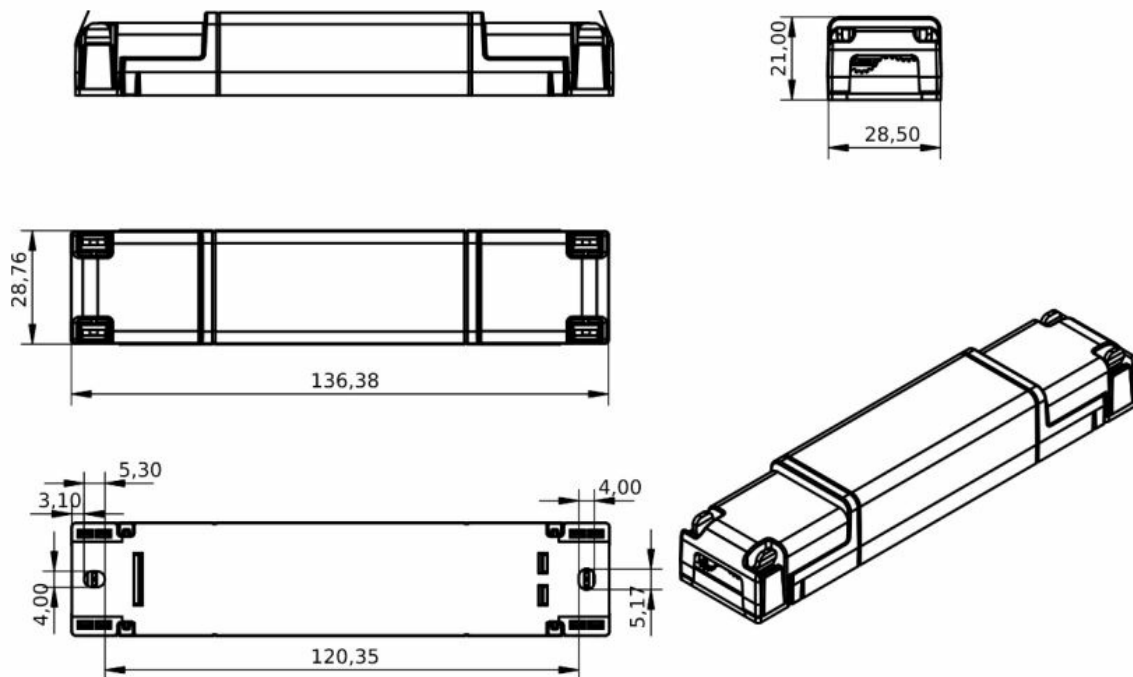

Figure 12: Mechanical dimensions

TECHNICAL NOTES

INSTALLATION

- **ATTENTION!** Installation and maintenance should always be carried out in the absence of DC voltage.
- Before proceeding with the installation, adjustment, and connection of the device to the power supply, make sure that the voltage is disconnected from the system.
- The device should only be connected and installed by qualified personnel. All applicable regulations, legislation, standards, and building codes in force in the respective countries must be adhered to. Incorrect installation of the device may cause irreparable damage to the device and connected loads.
- Maintenance must only be carried out by qualified personnel in compliance with current regulations.
- The product must be installed inside an electrical panel and/or junction box that is protected against overvoltage.
- The external power supply must be protected. The product must be protected by a properly sized circuit breaker with overcurrent protection.
- Keep 230 Vac (LV) circuits and non-SELV circuits separate from SELV safety ultra-low voltage circuits and any product connections. It is strictly forbidden to connect, for any reason, directly or indirectly, the 230 Vac mains voltage to the product (control terminals included).
- The product must be installed in a vertical or horizontal position, i.e. with the faceplate/label/top cover facing up or vertically. No other positions are allowed. The bottom position, i.e. with the faceplate/label/top cover facing downwards, is not allowed.
- During installation, it is recommended to reserve adequate space around the device to facilitate its accessibility in case of future maintenance or updates (e.g. via smartphone, NFC).
- Use in thermally harsh environments may limit the output power of the product.
- For devices embedded within luminaires, the TA ambient temperature range is a guideline to be carefully observed for the optimal operating environment. However, the integration of the device within the luminaire must always ensure proper thermal management (e.g. correct mounting of the device, proper ventilation, etc.) so that the temperature at the TC point does not exceed its maximum limit under any circumstances. Proper operation and durability are only guaranteed if the maximum temperature of the TC point is not exceeded under the conditions of use.

POWER AND LOAD

- The device must be powered only with SELV power supplies with limited current at constant voltage, short-circuit protection and suitably sized power according to the specifications indicated in the product data sheet. No other types of power supply are permitted.
- Size the power of the power supply respect to the load connected to the device. If the power supply is oversized compared to the maximum current drawn, insert an overcurrent protection between the power supply and the device.
- Connecting to an unsuitable power supply may cause the device to operate outside of the specified design limits, voiding its warranty.
- In the case of power supplies equipped with earth terminals, it is mandatory to connect ALL the protection earth points (PE= Protection Earth) to a state-of-the-art and certified earthing system.
- The power cables of the device must be correctly sized with reference to the connected load and must be isolated from any wiring or equal to non-SELV voltage. It is recommended not to exceed 10m of connection between the power source and the product. Use double-insulated cables. If you want to use connection cables between the power source and the product longer than 10m, the installer must ensure the correct operation of the system. In any case, the connection between the power supply and the product must not exceed 30m.

- The device has been designed to work with Digital LED loads only. Connecting and powering unsuitable loads may cause the device to operate outside of the specified design limits, voiding its warranty. In general, the operating conditions of the device should never exceed the specifications indicated in the product data sheet.
- Observe the intended polarity between the LED module and the device. Any polarity reversal results in no light emission and can often damage the LED modules.
- It is recommended that the connection cables between the product and the LED module be less than 3m long. Cables must be properly sized and should be insulated from any non-SELV wiring or parts. It is recommended to use double-insulated cables. If you want to use connection cables between the product and the LED module longer than 3m, the installer must ensure the correct operation of the system. In any case, the connection between the product and the LED module must not exceed 30m.
- It is not allowed to connect different types of loads in the same output channel.

LOCAL/REMOTE CONTROL AND SYNC

- The length of the connection cables between the local control (N.O. pushbutton) and the product must be less than 10m. For longer lengths, we recommend the use of an N.O. Dry Contact Relay module, connected between the "Input" terminal of the device (dry contact side of the relay) and the power source (coil side of the relay) as shown in the connection example in Figure 5. The cables must be sized correctly. Depending on the connection used, they must be isolated from any wiring or non-SELV voltage parts. It is recommended to use double-insulated cables, if deemed appropriate, also shielded.
- All devices and control signals connected to local commands with the symbol ⌐¬, must not supply any type of voltage.
- The length and type of cables connecting to the buses must comply with the specifications of the respective protocols and cur rent regulations. They must be isolated from any non-SELV wiring or live parts. It is recommended to use double-insulated cables.
- All devices and control signals connected to the DALI bus must be of the SELV type (the connected devices must be SELV or otherwise provide a SELV signal).
- The length and type of the connection cables at the sync BUS must be less than 15m and they should be isolated from every wiring or parts at voltage not SELV. To improve disturbance immunity at BUS side, the 3-wire double insulated twisted and shielded cables are recommended, with shield connected together and to the Earth Ground at one end only.

NFC (NEAR FIELD COMMUNICATION) WARNINGS

- The NFC antenna is located inside the device, the contact surface of which is indicated with the symbol Position your smartphone so that its NFC antenna is in contact with the symbol on the device.
- The location of the NFC sensor on the smartphone is dependent on the make and model of the smartphone itself. Therefore, it is recommended to refer to your smartphone's manual or the manufacturer's website to accurately determine where the NFC sensor is located. In most cases, the
- NFC reader is located on the back side near the top of the smartphone.
- NFC technology works optimally with non-metallic materials. Therefore, it is not recommended to place the device near metal objects or reflective surfaces when using NFC.
- For reliable communication, make sure that the contact surface is not covered or that it is free of metal objects, wiring, or other electronic devices. Any impediments could affect the quality of communication.

- NFC technology works at a short distance, generally within a few centimeters. Make sure your device and smartphone are close enough to allow communication.
- During firmware update and configuration, you should maintain stable contact (possibly without movement) between your smartphone and the device for the entire duration of the process (typically between 3 and 60 seconds). This ensures that the update goes smoothly and that the device is ready to use after the process is complete.

LEGAL NOTES

TERMS OF USE

- Dalcnet Srl (hereinafter referred to as "the Company") reserves the right to make changes to this device, in whole or in part, without prior notice to the customer. Such changes may affect technical aspects, functionality, design, or any other element of the device. The company is not required to notify you of such changes and that your continued use of the device will constitute your acceptance of the changes.
- The company is committed to ensuring that any changes do not compromise the essential functionality of the device and that they comply with applicable laws and regulations. In the event of substantial changes, the company undertakes to provide clear and timely information on the same.
- The customer is advised to periodically consult the **www.dalcnet.com** website or other official sources to check for any updates or changes to the device.

SYMBOLS

CE	All products are manufactured in compliance with European Regulations, as reported in the Declaration of Conformity.
(Independent Power Supply symbol)	Independent Power Supply Unit: Lamp power supply unit, consisting of one or more separate elements, designed so that they can be mounted separately on the outside of a luminaire, with protection in accordance with the marking and without the use of additional enclosures.
SELV	"Very Low Safety Voltage" in a circuit isolated from the mains supply by insulation not less than that between the primary and secondary circuits of a safety isolation transformer according to IEC 61558-2-6.
(Crossed-out wheelie bin symbol)	At the end of its useful life, the product described in this data sheet is classified as waste from electronic equipment and cannot be disposed of as unsorted municipal solid waste. **Warning!** Improper disposal of the product may cause serious harm to the environment and human health. For proper disposal, inquire about the collection and treatment methods provided by the local authorities.

LIGHTAPP

- LightApp© is the official Dalcnet application through which it is possible to configure, in addition to the functions of the RUNNING-LIGHT, also all the different Dalcnet products equipped with NFC technology.
- Dalcnet LightApp© can be downloaded free of charge from the Apple App Store and Google Play Store.

START-UP AND FIRST INSTALLATION

- On this screen, the app waits for the device parameters to be read.
- To read the parameters, simply bring the back of the smartphone close to the device's label. The read-sensitive zone of the smartphone may vary depending on the model.
- Once the connection is established, a quick loading screen will appear. You must remain in position with your smartphone until the parameters are fully loaded.
- iOS variant: To read the parameters, you need to press the SCAN button at the top right. A pop-up will appear indicating when your smartphone is ready to scan. Move the smartphone closer to the device and remain in place until the parameters are fully loaded.

SETTINGS
On the Settings page, you can:

- Setting the language of the app (Italian or English)
- View the app version
- Enable password saving on your smartphone
- Setting the Password for Writing Parameters
- View your saved passwords
- View the references of the distribution company (Dalcnet Srl)

Application

Language	English
App version	1.2.2-20231213
Remember password	
Password to write	
Le mie password	

The Company

Address	Via Lago di Garda, Altavilla Vicentina, VI

www.dalcnet.com

FIRMWARE

- On the firmware page, you can update the firmware of your device.
- The requested file must be of type .bin.
- Once the file has been uploaded, simply follow the on-screen instructions.
  ATTENTION:
    - The upload procedure is irrevocable. Once the upload has started, it will not be possible to pause it.
    - If the procedure is interrupted, the firmware will be corrupted and you will need to repeat the loading procedure.
    - At the end of the firmware load, all previously set parameters will be reset to factory defaults.
- If the update is successful and the loaded version is different from the previous one, the device will flash 10 times on the connected load.

Firmware upload

Choose a new firmware you want to upload to the device

SELECT A FILE

LOADING PARAMETERS

IMPORTANT: The parameters must be written when the device is switched OFF (without input power).

READ
With the app in READ mode, the smartphone will scan the device and show its current configuration on the screen.

WRITE
In WRITE mode, the smartphone will write the parameter configuration set on the screen to the device.

- In normal mode (Write All switched OFF) the app writes only the parameters that have changed since the previous read. In this mode, the write will only be successful if the serial number of the device matches the one previously read.
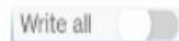
- In Write All mode, all parameters are written. In this mode, the write will only be successful if the device model matches the one previously read.
- It is recommended to activate the Write All mode only when you need to replicate the same configuration on many examples of the same model.

WRITE PROTECTION

- By means of the padlock button it is possible to set a lock when writing parameters. A screen will appear for entering a 4-character password. Once this password has been written into the device, all subsequent parameter changes can only be made if the correct password is written on the app's Settings page.
- To remove the password lock, simply press the lock key and leave the Password field blank.

WRITE ERROR
After writing the parameters, if the load connected to the device flashes continuously at a frequency of 2 times per second when it is turned ON again, it means that the writing was not successful. Therefore, you will need to perform the following steps:

1. Turn OFF the device.
2. Perform a parameter rewrite.
3. Wait for the write to be successful or for no error messages to appear.
4. Turn the device back ON.

   If that doesn't work, you can perform a factory reset by quickly turning the device OFF and ON 6 times.

PRODUCT INFORMATION

On the Product Information screen, you can view a variety of information about the product you are about to configure.

- **Product Name:** User-settable field for easy identification (e.g. Office, Meeting Room, Lobby, etc.). By default, the product name is the same as the Model field.
- **Model:** the model of the device (non-editable field).
- **Serial Number:** uniquely identifies the device (non-editable field).
- **Firmware Version:** identifies the firmware version currently loaded on the device (non-editable field).
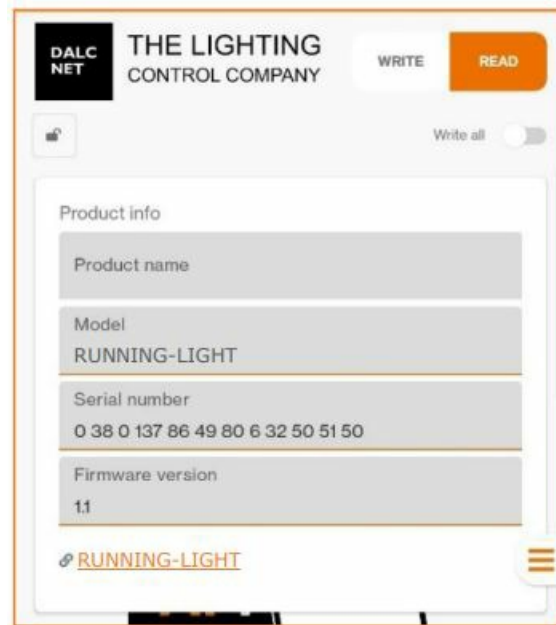
CONTROL SETTINGS
On the Control Settings screen, you can configure the different parameters for the driver's operation mode.

- **Pixel number:** allows to set the total number of IC (Integrated Circuit) LEDs mounted on the Digital LED strip.
- **IC Type:** sets the IC LED family mounted on the LED Strip (refer to Table 4).
- **Power-up state**: sets the status (ON/OFF) of LED load at device Power-ON.
- **Colour type:** allows to select the Colour type of LED strip (RGB or WWW).
- **Control type:** sets the Local/Remote control of device (PUSH, DALI or SYNC).
- **Effect change:** allows to select the Effect change mode (not available with SYNC control). Following change modes can be selected: NONE, Triple Push (available only with PUSH Control), DALI scene (available only with DALI Control).
- **Effect 1...8**: set the Effect7 from the following list:
    - STATIC
    - FILL
    - FILL-PARTIAL
    - RAINBOW
    - WAVE
    - HORSE RACE
    - RANDOM
    - PLASMA
    - FIRE

○ CUSTOM 8
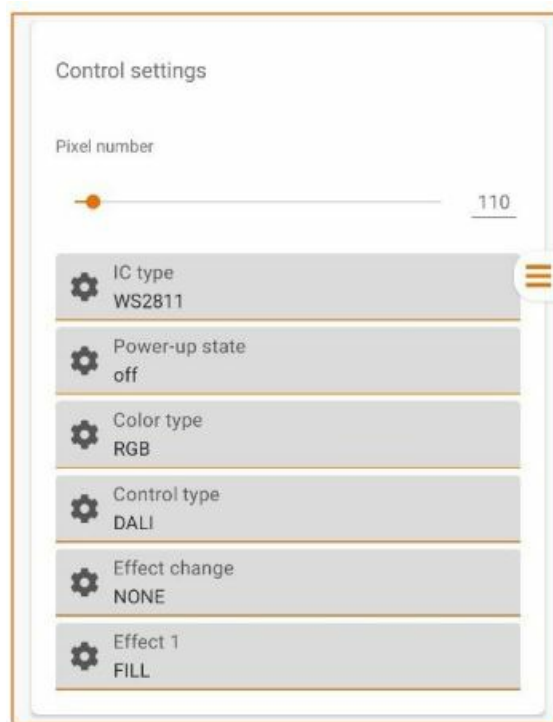
EFFECT SETTINGS

In this section can be configured the Effect's parameters for each effect selected in Control Settings menu.

STATIC
The Static effect performs a customizable colour effect without animation9.

- **Settings:** customize the colours of the digital LED strip. The strip is divided into 30 sectors, for each of which you can set a colour from a wide variety.
 To customize the sectors select the colour from the colour palette, then:
  ○ tap the "paint-brush" icon and select the sectors to fill with colour;
  ○ tap the "paint-bucket" icon to fill all the sectors with the same colour;
  ○ tap the "eraser" icon and select the sectors to erase.
- **Intensity:** sets the overall light intensity (RGB or white)
- **Fade time:** sets the time it takes for the output to completely turn on and off
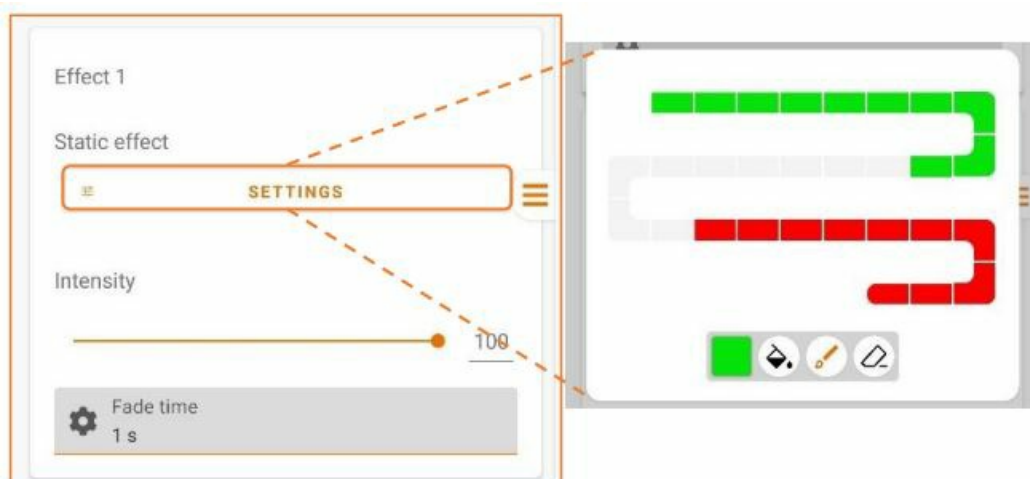
FILL / FILL-PARTIAL

The Fill and Fill-partial effects perform a customizable colour effect with Fill animation9,10.

- **Settings:** customize the colours of the digital led strip. From the colour palette, you can set the foreground and background colour of the effect from a wide variety. To customize the effect, choose the Foreground/Background section, then set the colour from the colour palette.
- **Speed (sec/10):** sets the time needed to complete the fill effect on the configured pixel length (in tenths of a second), from 0 to 76.5s.
- **Effect version:** allows to set if the effect shall be played in Single (one time) or Continuous mode.
- **Starting point (%):** set the starting point (percentage) on the digital LED strip from which the effect starts.
- **ON direction**: set the direction of the Fill effect when it starts, Forward or Backward.
- **OFF direction:** set the direction of the Fill effect when it ends, Forward or Backward.
- **Delay:** sets the delay time of the effect start.
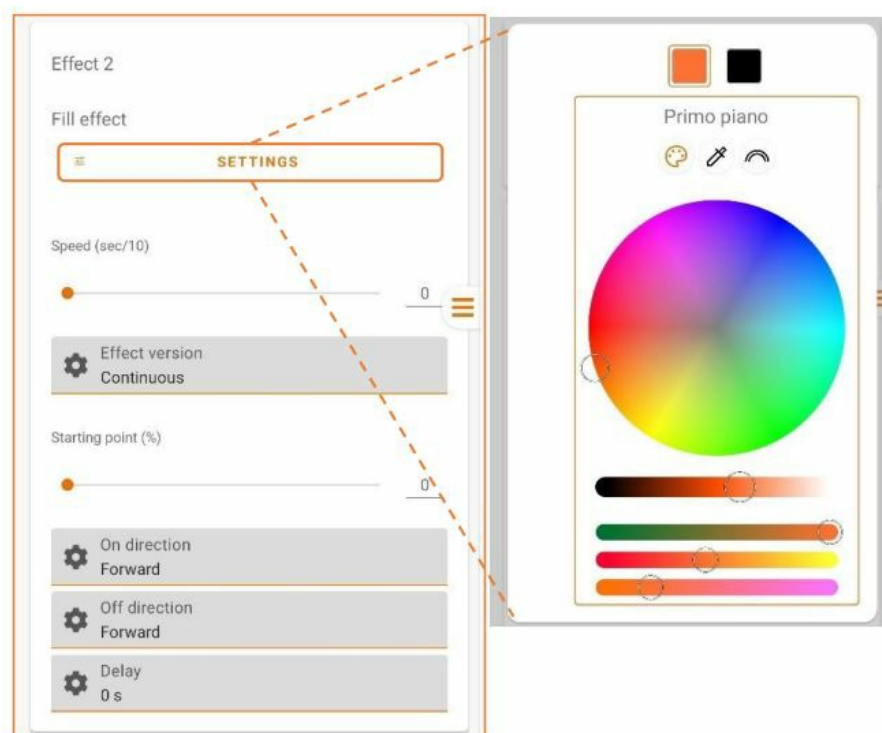
RAINBOW

- The Rainbow effect performs a colour effect where the LED strip change dynamically and softly the colour animation9.
- No customizable settings are provided for this effect.

WAVE

The Wave effect performs a customizable colour effect with wave animation9.

- **Settings:** customize the colours of the digital led strip. From the colour palette, you can set the foreground colour of the effect from a wide variety. To customize the effect, set the colour of Foreground section from the colour palette.
- **Length (pixels):** sets the wave length (in pixels).
- **Minimum level:** set the minimum intensity value of the wave light.

- **Speed (sec/10):** sets the speed of the effect (in tenths of a second), from 0 to 15.3s.
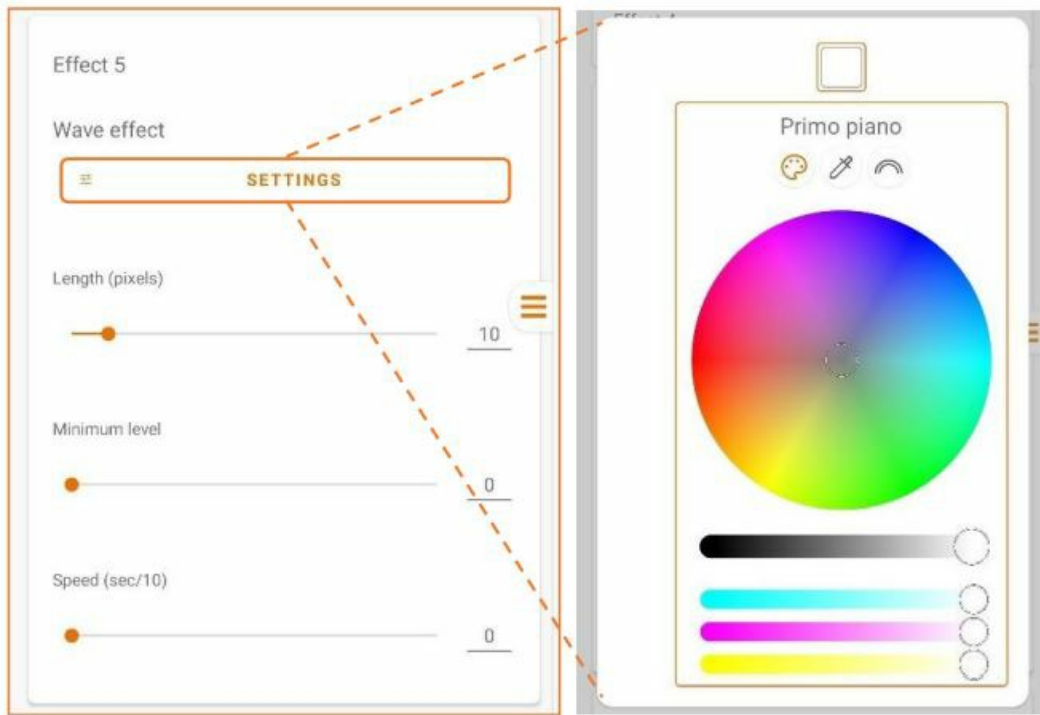
HORSE RACE

The Horse Race effect performs a customizable colour effect with partial sector movement animation11.

- **Settings:** customize the colours of the digital led strip. From the colour palette, you can set the partial sector and background colour of the effect from a wide variety.

  To customize the effect, choose the Foreground/Background section, then set the colour from the colour palette.
- **Length (pixels):** sets the partial sector length (in pixels).
- **Direction:** set the direction Forward, Backward or Forward-Backward of the partial sector movement.
- **Front fade:** enables or disables the fade effect on front pixels.
- **Back fade:** enables or disables the fade effect on back pixels.
- **Speed (sec/10):** sets the speed of the effect (in tenths of a second), from 0 to 76.5s.
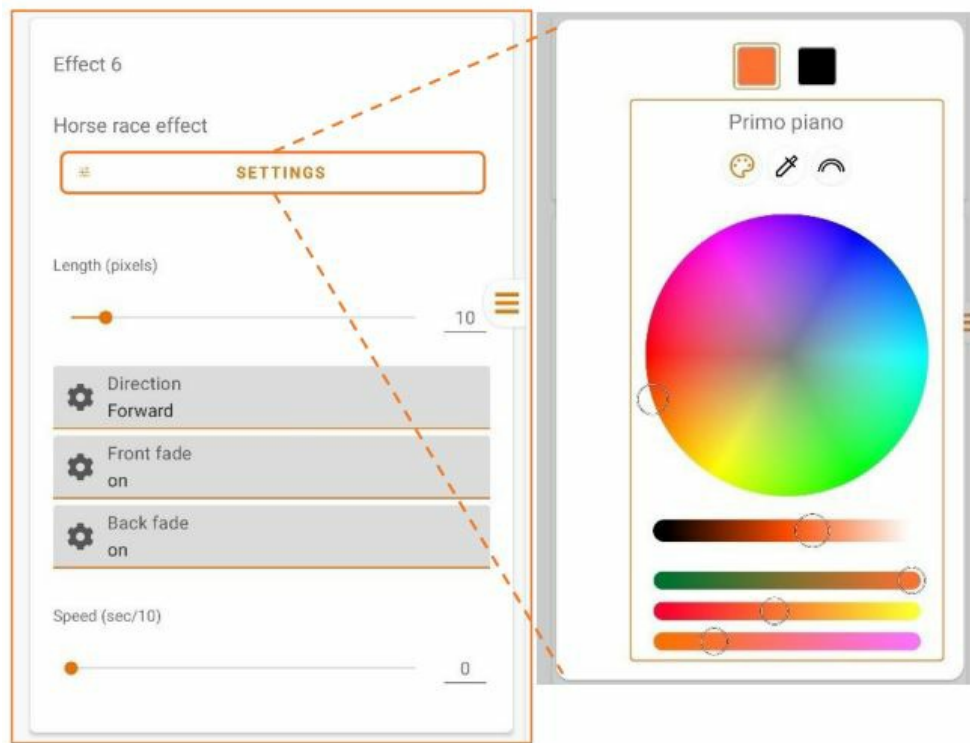
RANDOM

The Random effect performs a customizable colour effect with random animation12.

- **Settings:** customize the colours of the digital led strip. From the colour palette, you can set the foreground and background colour of the effect from a wide variety.
  To customize the effect, choose the Foreground/Background section, then set the colour from the colour palette.
- **Speed (sec/10):** sets the speed of the effect (in tenths of a second), from 0 to 76.5s.
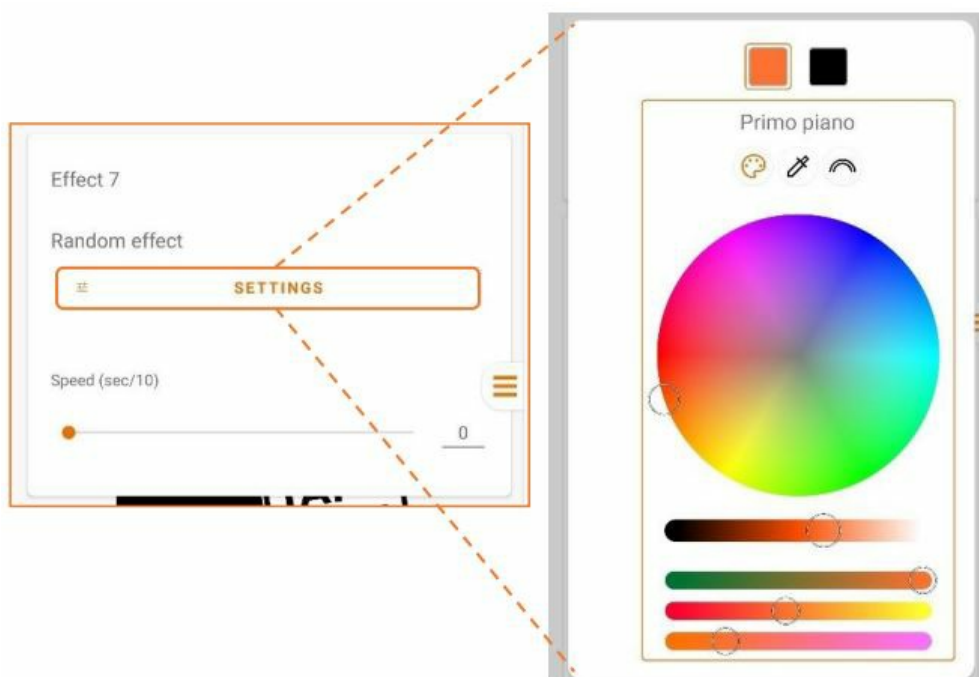
PLASMA

The Plasma effect performs a customizable colour effect with plasma bubble animation11.

- **Settings:** customize the colours of the digital led strip. From the colour palette, you can set the foreground and background colour of the effect from a wide variety.

  To customize the effect, choose the Foreground/Background section, then set the colour from the colour palette.
- **Speed (sec/10):** sets the speed of the effect (in tenths of a second), from 0 to 76.5s.
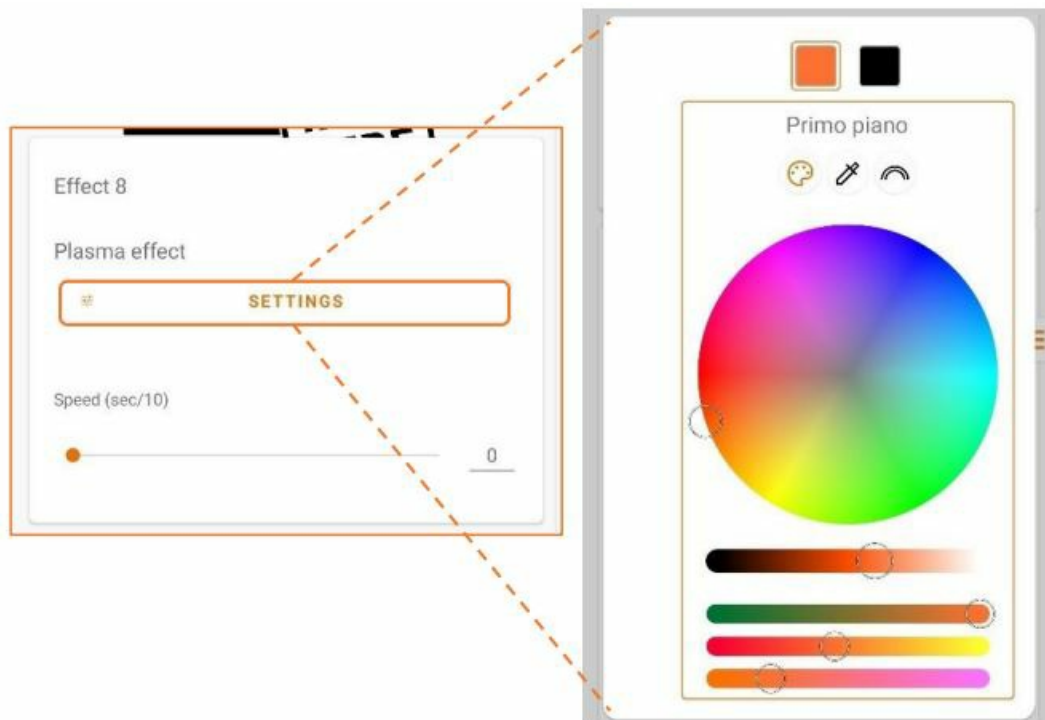
FIRE

- The Fire effect performs a fire light effect where the LED strip change dynamically the animation9.
- No customizable settings are provided for this effect.

CUSTOM

The Custom effect is reserved for additional customized lighting effects that the customer wishes to apply. For the development of new custom effects, please feel free to contact us.

DALI PARAMETERS

When DALI is selected as control type on Control Settings, the following section appears on LightApp© allowing to set the DALI parameters.

- **Power-On Level:** this is the intensity value to which the output is brought as soon as the device is powered.
- **Mask:** Enables or disables control.
- **System Failure Level:** this is the intensity value to which the output is brought when a system error occurs.
- **Mask:** Enables or disables control.
- **Minimum Level:** sets the minimum level of light intensity that can be reached via remote control (default value = 1).
- **Maximum Level:** sets the maximum level of light intensity that can be reached via remote control (default value = 254).
- **Fade rate**: indicates the amount of light intensity levels into which the fade time should be divided.
- **Fade time:** sets the time it takes for the output to make a transition from one light intensity level to another.
- **DALI Address:** Sets the address associated with the device in the DALI network.
- **Mask:** Enables or disables control.
- **Group 0-15:** allows to associate the device address with one or more groups.
- **Scene 0-15:** allows to pair the Effect with one or more scenes.
- **Mask:** Enables or disables control.

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Documents / Resources

Dalcnet Spi Controller For Digital LED Strip [pdf] Owner's Manual
Spi Controller For Digital LED Strip, Controller For Digital LED Strip, Digital LED Strip, LED Strip
, Strip

References

- **Led dimmer and RGB controller for professional lighting systems**
- **Led dimmer and RGB controller for professional lighting systems**
- **User Manual**