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# USER MANUAL

## DRIVER LED





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## 1 IMPORTANT SAFETY INSTRUCTIONS

This device is designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated into this unit will protect you if you observe the following procedures for installation, use, and servicing.

- Follow all warnings and instructions marked on the product.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this product near any liquids.
- Do not place this product on an unstable surface. The product may fall, causing serious damage to the product.
- Do not drop the product.
- Do not block the slots and openings on the top and bottom of the chassis; to ensure proper ventilation and reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.
- Operate this product only from the type of power indicated on the marking label.
- Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.
- Never push objects of any kind into this product through the chassis slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock.
- Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - When the power cord or plug is damaged or frayed.
  - If liquid has been spilled on the product.
  - If the product has been exposed to rain or water.
  - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment may result in damage and require extensive work by a qualified technician to the product to normal condition.
  - If the product has been dropped or the chassis has been damaged.
  - If the product exhibits a distinct change in performance, contact Vivaldi Customer Support.

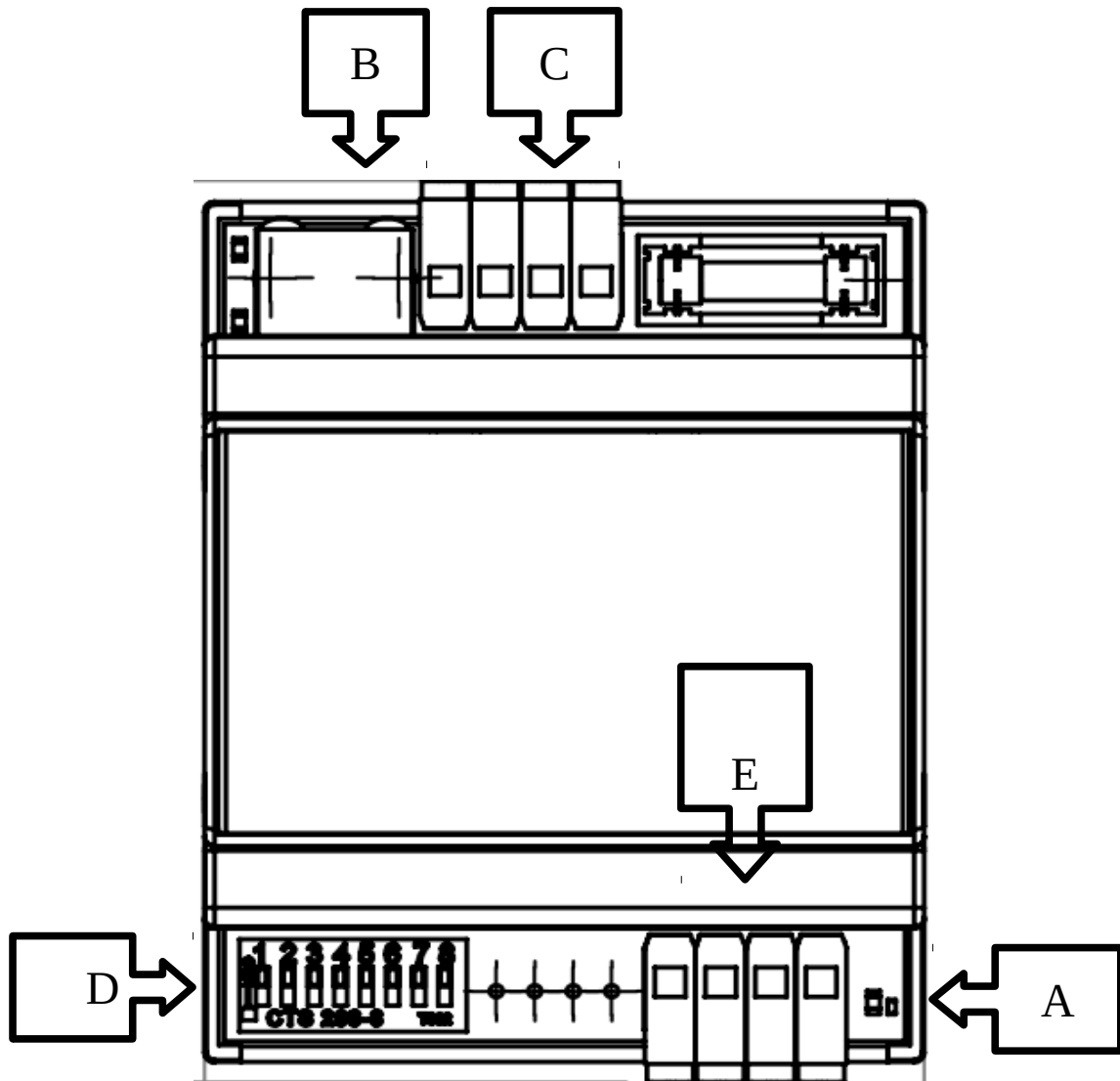
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## **2 DESCRIPTION**

DRIVER LED is a device for the remote management of LED strips (1xRGB or 3xsingle colour). Using RJ45 port it is possible to connect DRIVER LED to the local network and control it with Vivaldi iControl or another smart home controller.

This product features an internal web server platform from which it is possible to access the settings.

## 2.1 LAYOUT DESCRIPTION



Picture 1

- A) Power ON LED;
- B) RJ45 plug, ethernet 10/100Mbps connection;
- C) Euroblock socket 4-way, | B | A | - | + |, for power supply and RS485 connection for future applications;
- D) DIP SWITCH for address setting and test dip;
- E) Euroblock socket 4-way, | B | G | R | +COM |, LED strips connection;

### 3 PACKAGE CONTENTS

- DRIVER LED
- INSTRUCTION MANUAL

### 4 OPERATION

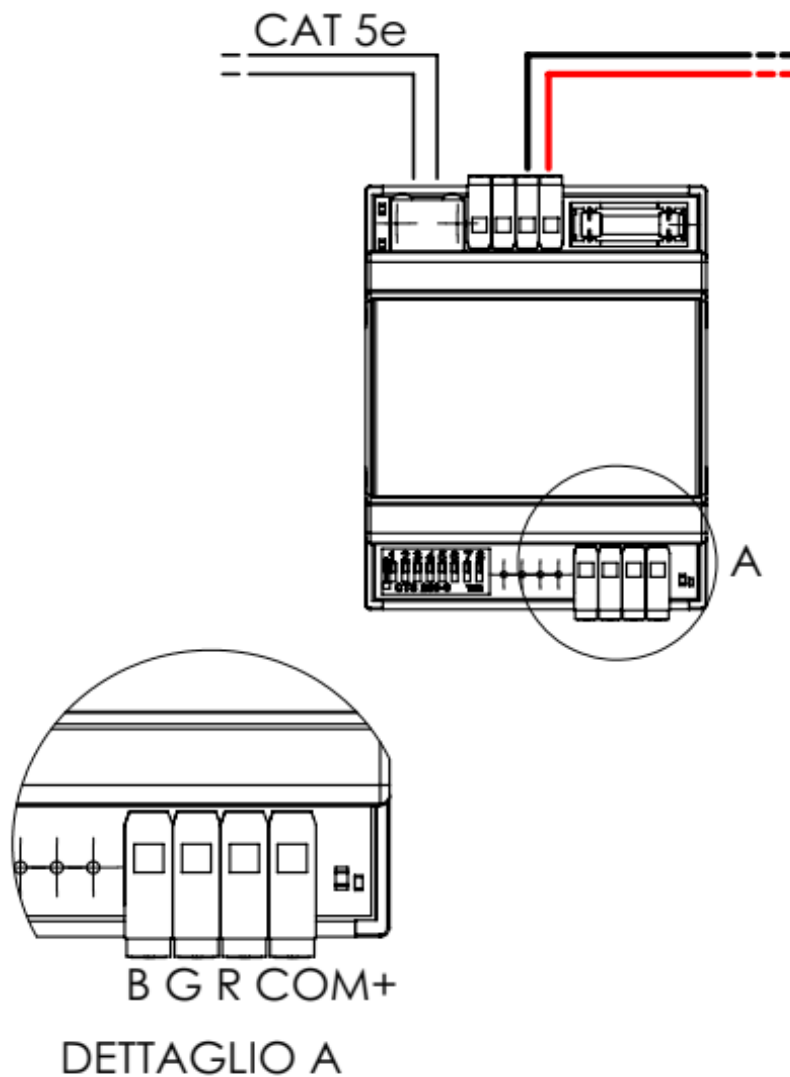
#### 4.1 ELECTRIC CONNECTION

##### 4.1.1 Single module connection

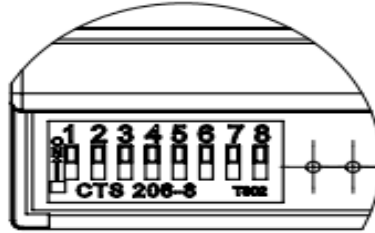
For a proper operation of the device, make sure to supply from 12 to 24Vdc through the socket (Picture 1-C). Pay attention to polarity!

To start communications just connect the device to LAN network via the RJ45 plug (Picture 1-B) using at least a CAT5e cable.

It is possible to connect a maximum load of 2A/Ch to the 3 outputs, Open Drain output with common positive.



## 4.2 USER MENU



Picture 2

### 4.2.1 CHANGE DEVICE ID

Set the DIP switch from n 2 to 8 (binary), LSB = 8. (Default: dip 8 ON, address 1)

MODBUS PROTOCOL:

- OUTPUT1-3 = ID 3-5

### 4.2.2 SWITCHING ALL DEVICES ON

To check that all electrical connections are correct it is possible to activate all outputs manually. Set DIP1 on ON, the 3 outputs will be activated.



## 4.3 WEB SERVER

The device has a built-in WEB SERVER for the management and configuration of contacts. The default IP address is: 192.168.0.106, hence, after connecting the device to the network open any web browser (eg. Firefox, Chrome, Safari, ecc...) and set the default IP address in the address bar.

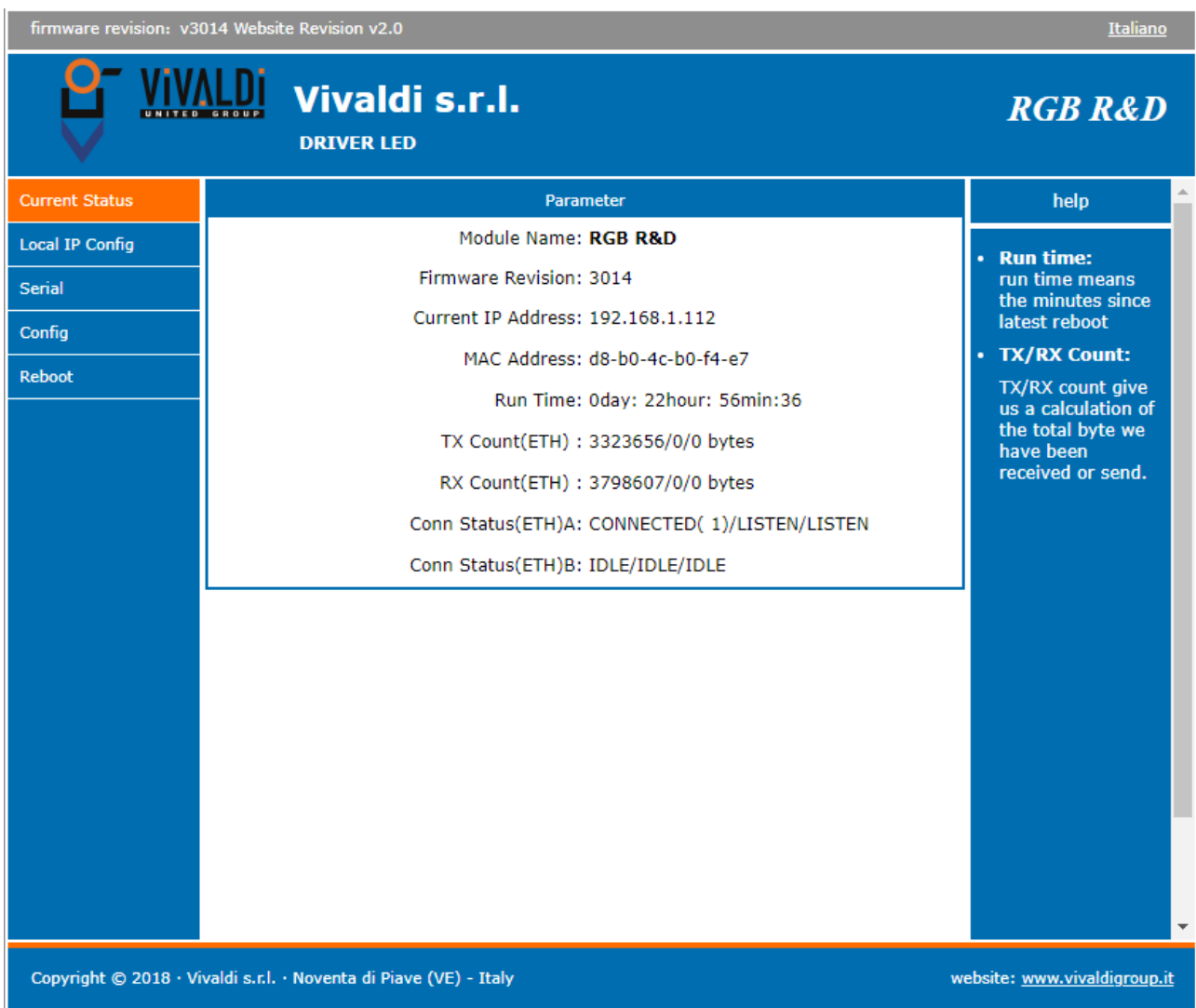
This will open the authentication page. Type in user name and password:

UTENTE: admin (default)

PASSWORD: admin (default)

### 4.3.1 STATUS

Once logged in you will be directed to DRIVER LED's home page (Picture 3)



The screenshot shows the web interface for the DRIVER LED device. At the top, it displays 'firmware revision: v3014 Website Revision v2.0' and a language selector for 'Italiano'. The main header includes the Vivaldi logo, 'Vivaldi s.r.l.', 'DRIVER LED', and 'RGB R&D'. A left sidebar contains navigation options: 'Current Status' (highlighted), 'Local IP Config', 'Serial', 'Config', and 'Reboot'. The main content area is titled 'Parameter' and lists the following device information:

- Module Name: **RGB R&D**
- Firmware Revision: 3014
- Current IP Address: 192.168.1.112
- MAC Address: d8-b0-4c-b0-f4-e7
- Run Time: 0day: 22hour: 56min:36
- TX Count(ETH) : 3323656/0/0 bytes
- RX Count(ETH) : 3798607/0/0 bytes
- Conn Status(ETH)A: CONNECTED( 1)/LISTEN/LISTEN
- Conn Status(ETH)B: IDLE/IDLE/IDLE

On the right side, there is a 'help' section with two bullet points:


- Run time:** run time means the minutes since latest reboot
- TX/RX Count:** TX/RX count give us a calculation of the total byte we have been received or send.

The footer contains copyright information: 'Copyright © 2018 · Vivaldi s.r.l. · Noventa di Piave (VE) - Italy' and the website URL: 'website: [www.vivaldigroup.it](http://www.vivaldigroup.it)'.

Picture 3

In Status menu it is possible to check the current status of the device.


### 4.3.2 LOCAL IP CONFIGURATION

firmware revision: v3014 Website Revision v2.0		Italiano
 <b>Vivaldi s.r.l.</b> DRIVER LED		<i>RGB R&amp;D</i>
Current Status	parameter	help
Local IP Config	IP Type: <input type="text" value="Static IP"/> Static IP: <input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="1"/> . <input type="text" value="112"/> Submask: <input type="text" value="255"/> . <input type="text" value="255"/> . <input type="text" value="255"/> . <input type="text" value="0"/> Gateway: <input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="1"/> . <input type="text" value="254"/> Dns Server: <input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="0"/> . <input type="text" value="1"/>	<ul style="list-style-type: none"> <li>• <b>IP type:</b> StaticIP or DHCP</li> <li>• <b>StaticIP</b> Module's static ip</li> <li>• <b>Submask</b> usually 255.255.255.0</li> <li>• <b>Gateway</b> Usually router's ip address</li> </ul>
Serial	<input type="button" value="Save"/> <input type="button" value="Cancel"/>	
Config		
Reboot		
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Picture 4

In this page it is possible to set the network parameters of DRIVER LED.  
To save the settings click on save on the page bottom.

### 4.3.3 CONNECTION CONFIGURATION


firmware revision: v3014 Website Revision v2.0		Italiano																																
 <b>Vivaldi s.r.l.</b> DRIVER LED		<i>RGB R&amp;D</i>																																
<ul style="list-style-type: none"> <li>Current Status</li> <li>Local IP Config</li> <li style="background-color: #f4a460;">Serial</li> <li>Config</li> <li>Reboot</li> </ul>	<table border="1"> <thead> <tr> <th align="center" colspan="2">parameter</th> </tr> </thead> <tbody> <tr> <td>Baud Rate:</td> <td>19200 bps(600~230400)bps</td> </tr> <tr> <td>Data Size:</td> <td>8 bit</td> </tr> <tr> <td>Parity:</td> <td>None</td> </tr> <tr> <td>Stop Bits:</td> <td>1 bit</td> </tr> <tr> <td>Flow Control:</td> <td>None</td> </tr> <tr> <td>UART Packet Time:</td> <td>0 (0~255)ms</td> </tr> <tr> <td>UART Packet Length:</td> <td>0 (0~1460)chars</td> </tr> <tr> <td>Sync Baudrate(RF2217 Similar):</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <th align="center" colspan="2">Socket A Parameters</th> </tr> <tr> <td>Work Mode:</td> <td>TCP Server None</td> </tr> <tr> <td>Local/Remote Port Number:</td> <td>10001 23 (1~65535)</td> </tr> <tr> <td>PRINT:</td> <td><input type="checkbox"/></td> </tr> <tr> <td>ModbusTCP Poll:</td> <td><input type="checkbox"/> Poll Timeout : 200 (200~9999) ms</td> </tr> <tr> <td>Remote Server Addr:</td> <td></td> </tr> <tr> <td>Remote Port Number:</td> <td>0 (1~65535)</td> </tr> </tbody> </table> <p align="center">Save Cancel</p>	parameter		Baud Rate:	19200 bps(600~230400)bps	Data Size:	8 bit	Parity:	None	Stop Bits:	1 bit	Flow Control:	None	UART Packet Time:	0 (0~255)ms	UART Packet Length:	0 (0~1460)chars	Sync Baudrate(RF2217 Similar):	<input checked="" type="checkbox"/>	Socket A Parameters		Work Mode:	TCP Server None	Local/Remote Port Number:	10001 23 (1~65535)	PRINT:	<input type="checkbox"/>	ModbusTCP Poll:	<input type="checkbox"/> Poll Timeout : 200 (200~9999) ms	Remote Server Addr:		Remote Port Number:	0 (1~65535)	<p align="center">help</p> <ul style="list-style-type: none"> <li>• <b>local port</b> 1~65535. when TCP Client, set this to 0 means use random local port</li> <li>• <b>remote port</b> 1~65535</li> <li>• <b>packet time/length</b> default 0/0, means automatic packet mechanism; you can modify it as a none-zero value</li> </ul>
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Picture 5

On this page it is possible to set the port and communication protocol with the smart home controller.

To save the settings click on save on the page bottom.

#### 4.3.4 SYSTEM CONFIGURATION


firmware revision: v3014 Website Revision v2.0		Italiano
 <b>Vivaldi s.r.l.</b> DRIVER LED		<i>RGB R&amp;D</i>
Current Status	parameter	help
Local IP Config	Module Name: <input type="text" value="RGB R&amp;D"/>	<ul style="list-style-type: none"> <li>• <b>module name</b> max length is 15 char</li> <li>• <b>Web port</b> default 80</li> <li>• <b>ID and ID type</b> we could use it for D2D</li> <li>• <b>Mac address</b> user could modify this MAC address</li> <li>• <b>Buffer data</b> default not checked, buffer data before tcp connection established</li> <li>• <b>reset timeout</b> default 0, 0-60 mean no timeout, &gt;60 mean when there is no data received during this time, the device will restart</li> </ul>
Serial	Websocket Port: <input type="text" value="0"/>	
Config	Webserver Port: <input type="text" value="80"/>	
Reboot	User Name: <input type="text" value="admin"/>	
	Pass Word: <input type="text" value="admin"/>	
	<input type="button" value="Save"/> <input type="button" value="Cancel"/>	
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Picture 6

In this page it is possible to set DRIVER LED devices' name, webserver ports, user name and password.

To save settings it click on save on the page bottom.

### 4.3.5 RESTART

firmware revision: v3014 Website Revision v2.0		Italiano
 <b>Vivaldi s.r.l.</b> DRIVER LED		<i>RGB R&amp;D</i>
Current Status	Reboot/Reset	
Local IP Config	Restart Module	Restart Module
Serial		
Config		
Reboot		
		help <ul style="list-style-type: none"> <li><b>Reboot:</b> Click to make your config take effect</li> </ul>
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Picture 7

On this page it is possible to reset the device from remote.

## 5 COMMUNICATION PROTOCOLS

For controlling DRIVER LED with VIVALDI iCONTROL+ other smart home systems

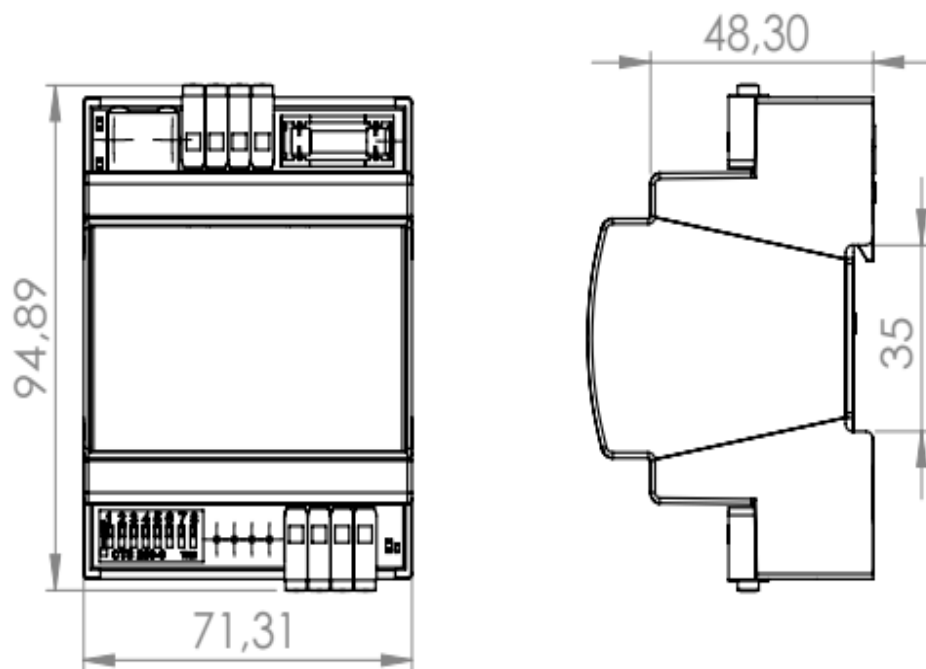
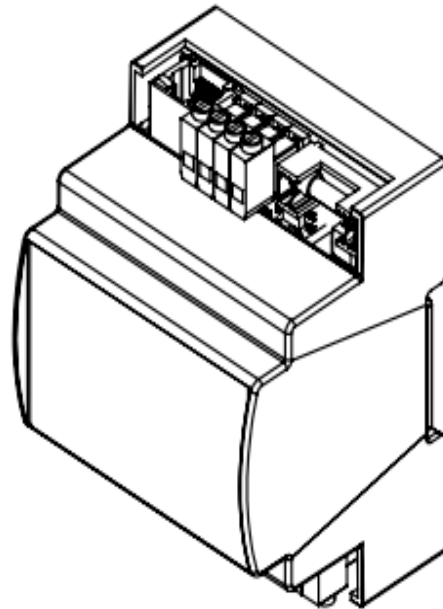
### 5.1 MODBUS RTU PROTOCOL

To communicate with MODBUS protocol set the registers as follows:

OUTPUT 1	REGISTER 3 (RED)	VALUE FROM 0 TO 512
OUTPUT 2	REGISTER 4 (GREEN)	VALUE FROM 0 TO 512
OUTPUT 3	REGISTER 5 (BLUE)	VALUE FROM 0 TO 512

## 6 TECHNICAL SPECIFICATION

Power supply	12-24Vdc
Maximum current absorbtion	Depends on load
Maximum current Open drain	OUTPUT= 2A EACH OUTPUT
Network communication	10/100Mbps





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