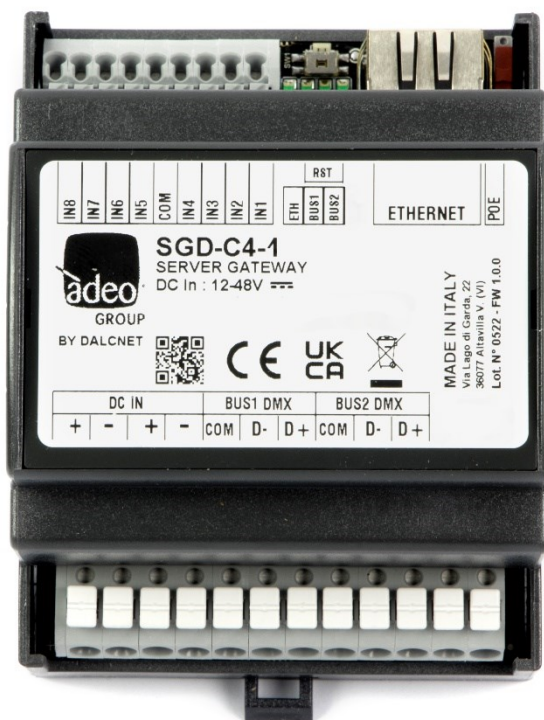


ADEO CONTROL SGD-C4-1

SERVER GATEWAY DMX

for Control4 integrations

INSTALLATION AND USER MANUAL



V3

Firmware version: 1.0.34

December 2023

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1. Release Note

Dashboard version	Firmware version	TCP/IP stack version
0.0.81	1.0.34	TCP/IP version 2.1.2

2. Application

The new Adeo Server Gateway SGD-C4-1 is a multi-output device that operates at the network level and allows data packets to be routed to fieldbus communication systems such as DMX512A to provide advanced lighting control. Once the IP address is assigned on the Composer Pro, the SGD-C4-1, through specific drivers, is able to manage the individual channel or RGB through DMX. Communication is bidirectional, so from the Control4 interface we will always have the updated status of the lights.

The SGD-C4-1 device stores information from the configured receiver buses in a buffer and transmits it to the configured transmitter buses. In the default configuration, a single buffer, corresponding to a DMX universe, is managed and controlled via the Ethernet interface. On the DMX bus, all of the 512 channels of the buffer are transmitted; according to an algorithm that updates the fastest changing channels more frequently. This default configuration allows a total of 512 levels of light intensity to be managed through any control unit with an Ethernet connection, and to control different devices without the need to know in detail how the relevant protocols work.

The supply voltage is between 12 and 48V DC.

The SGD-C4-1 provides, via its incorporated flash memory, a Web Server interface on which a standard application is loaded that allows real-time data setting or monitoring from a PC, Tablet or Smart Phone. With the SGD-C4-1, advanced lighting control is possible at network level, with the advantage of intelligent communication through different communication buses. Indeed, SGD-C4-1 manages the data and bus interface in a transparent way, allowing easier system configuration.

3. Technical Notes

Installation:

- Installation and maintenance must only be carried out by qualified personnel in accordance with the regulations in force.
- The product must be installed inside a surge-protected electrical cabinet.
- The product must be installed in a vertical or horizontal position with the front cover/label upwards or vertically; no other position is permitted; a bottom-up position (with the front cover/label downwards) is not permitted.
- Keep 230V (LV) and non-SELV circuits separate from safety extra-low voltage (SELV) circuits and all connections of this product. It is absolutely forbidden to connect, for any reason, directly or indirectly, the 230V mains voltage to the bus or other parts of the circuit.

Power supply:

- Use only SELV-type power supplies with limited current and short-circuit protection and appropriately sized power for the power supply. In the case of power supply units equipped with earth terminals, it is mandatory to connect ALL protection earth points (PE = Protection Earth) to a professionally installed and certified earth installation.
- The connecting cables between the extra-low voltage power source and the product must be correctly sized and must be isolated from any wiring or non-SELV voltage parts. Use double-insulated wires.

Commands:

- The length of the connecting cables between the local controls (Push Button, 0-10V, 1-10V, Potentiometer, or other) and the product must be less than 10m; the cables must be correctly sized and must be isolated from any wiring or non-SELV voltage parts. Use double-insulated shielded and twisted cables.
- The length and type of connection cables to the buses must comply with the specifications of the respective protocols and current standards; they must be isolated from any wiring or non-SELV voltage parts. Use double-insulated shielded and twisted cables.
- All devices and control signals connected to buses and local controls (Push Button, 0-10V, 1-10V, Potentiometer, or other) must be SELV (connected devices must be SELV or in any case provide a SELV signal).

In addition

- The gateway can only receive commands via IP (Control4) and re-route them to the available 512 channels
- Up to 8 scenarios can be saved (Power One + 7)
- Local contacts can be configured to call up individual scenarios or channels

It does not currently support remote connection via OvrC.

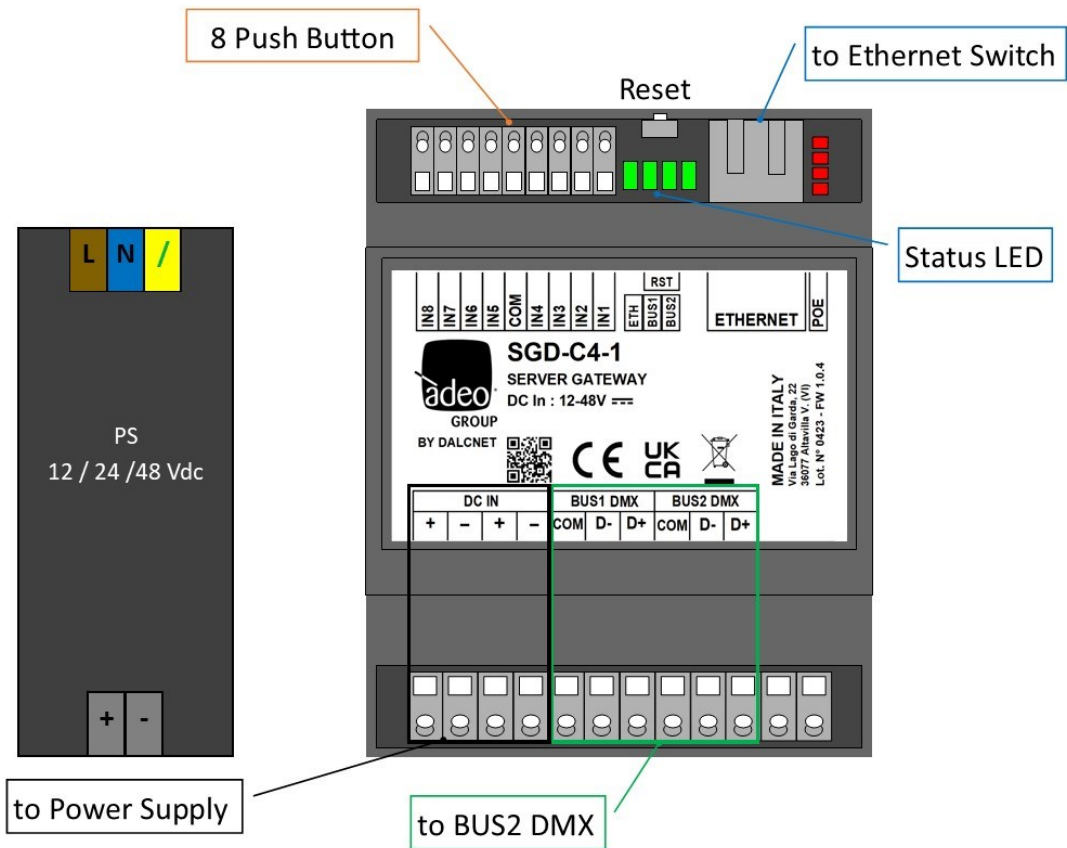
4. Characteristics

Tensione di alimentazione - Supply Voltage	12 / 24 / 48 Vdc or POE														
Corrente assorbita - Input Current	<table border="1"> <thead> <tr> <th>voltage</th> <th>min</th> <th>Typ*</th> <th>max</th> </tr> </thead> <tbody> <tr> <td>@ 12Vdc</td> <td>110mA (1,2W)</td> <td>320mA (3,84W)</td> <td rowspan="3">500mA</td> </tr> <tr> <td>@ 24Vdc</td> <td>60mA (1,44W)</td> <td>160mA (3,84W)</td> </tr> <tr> <td>@ 48Vdc</td> <td>40mA (1,92W)</td> <td>80mA (3,84W)</td> </tr> </tbody> </table> <p>*ethernet and all bus at full load</p>	voltage	min	Typ*	max	@ 12Vdc	110mA (1,2W)	320mA (3,84W)	500mA	@ 24Vdc	60mA (1,44W)	160mA (3,84W)	@ 48Vdc	40mA (1,92W)	80mA (3,84W)
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@ 48Vdc	40mA (1,92W)	80mA (3,84W)													
Temperatura di stoccaggio - Storage temperature	min: -40 max: +60 °C														
Temperatura di esercizio - Working temperature	min: -40 max: +40 °C														
Grado di protezione - Protection Grade	PLASTIC BOX IP10														
Peso - Weigth	ALUMINIUM BOX: 230g - PLASTIC BOX 125g														
Dimensioni Meccaniche - Mechanical dimensions	ALUMINIUM BOX: 105x70x47 - PLASTIC BOX: DIN RAIL 4mod.														
ETHERNET	10/100 Mbit baseT FULL DUPLEX AUTO NEGOTIATION														
DMX	Max 512 ch on 2 DMX line optoisolated														
Dimensioni meccaniche	72 x 92 x 62 mm														

5. Reference Standards

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 requirements
EN 61347-1	Lamp controlgear – Part 1: General and safety requirements
ANSI E1.11	Entertainment Technology – USITT DMX512-A Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories

6. Connections



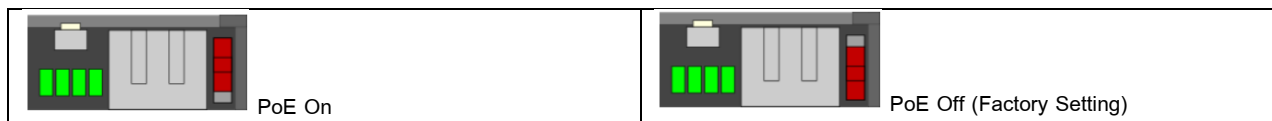
RST BUTTON:

If the reset button is pressed for less than 2 seconds, the device can be restarted, with the status LEDs lighting up, starting with the first one on the right in a progressive manner.

If the button is pressed for longer than 2 seconds and all four status LEDs light up, the system resets to the factory settings

POWER OVER PASSIVE ETHERNET (POE)

The device is also capable of operating on PoE power. The SGD-C4-1 is a passive PD (Passive Power Device) that is powered without negotiation or communication processes from a PoE switch. To enable this power supply, simply move the PoE selector upwards.



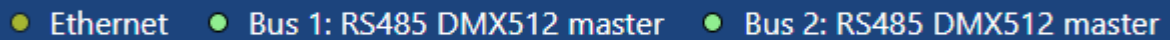
NOTE: Before connecting the device to a PoE switch or injector, disconnect any other power sources from the DC IN+ and DC IN- terminals.

7. Status LED

	LED1(left)	LED2	LED3
Function	Ethernet	BUS1(DMX/RTU)	BUS2(DMX/RTU)
ON	Connected with Ethernet communication	Connected with communication	Connected with communication
Flashing	Ethernet cable connection	Connected without communication (only RTU)	Connected without communication (only RTU)
OFF	Not connected	Not connected	Not connected

The same status LEDs are also visible at the top right of the web interface, with these statuses:

- **GREEN:** permanently lit: active;
- **FLASHING YELLOW:** no communication or not enabled

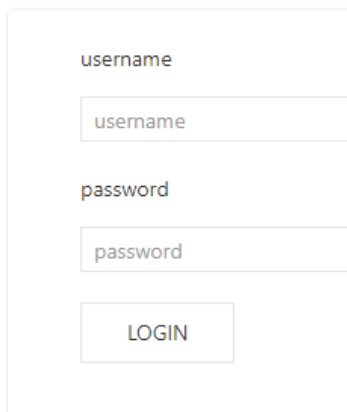


8. Local Button

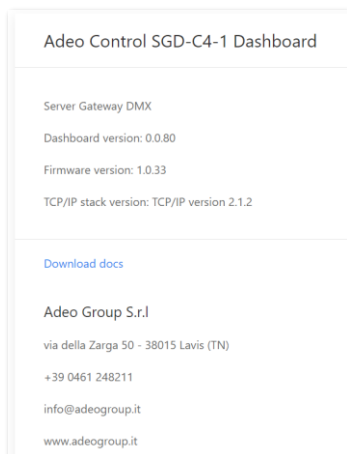
The device is equipped with 8 configurable local contacts in **Local input configurations** (see relevant section in this manual).

They can be used to control individual channels or individual previously saved scenes.

9. Web Server (Ethernet)



Default Address 192.168.1.4



1. Access your operating system browser (Google Chrome recommended) and access the local gateway address after connecting the Ethernet cable to the local network.
2. Enter the credentials in the username and password fields for the two modes present **ADMIN** and **USER**.
 - a. In **ADMIN** mode, you have full access to system settings and the default values are username = **admin**, password = **admin**.
 - b. Instead, **USER** mode allows only Channels to be displayed and the default values are username = **user**, password = **user**.
3. Press **LOGIN**.
4. You will be prompted to change your credentials the first time you log in.

After logging in, the landing page shows the **Device Info** (always visible by pressing the logo at the top left of the interface).

The following functions/sections can be found on this page:

- **LOGOUT** return to the main **LOGIN** page by pressing at top right.
- The following are displayed in the centre and in this order:
 - **Dashboard version**, version of the web pages
 - **Firmware version**, version of the fw present in the gateway
 - **TCP/IP stack version**, version of the TCP/IP protocol
 - **Download docs**, you can download all documentation from the Adeo Group website

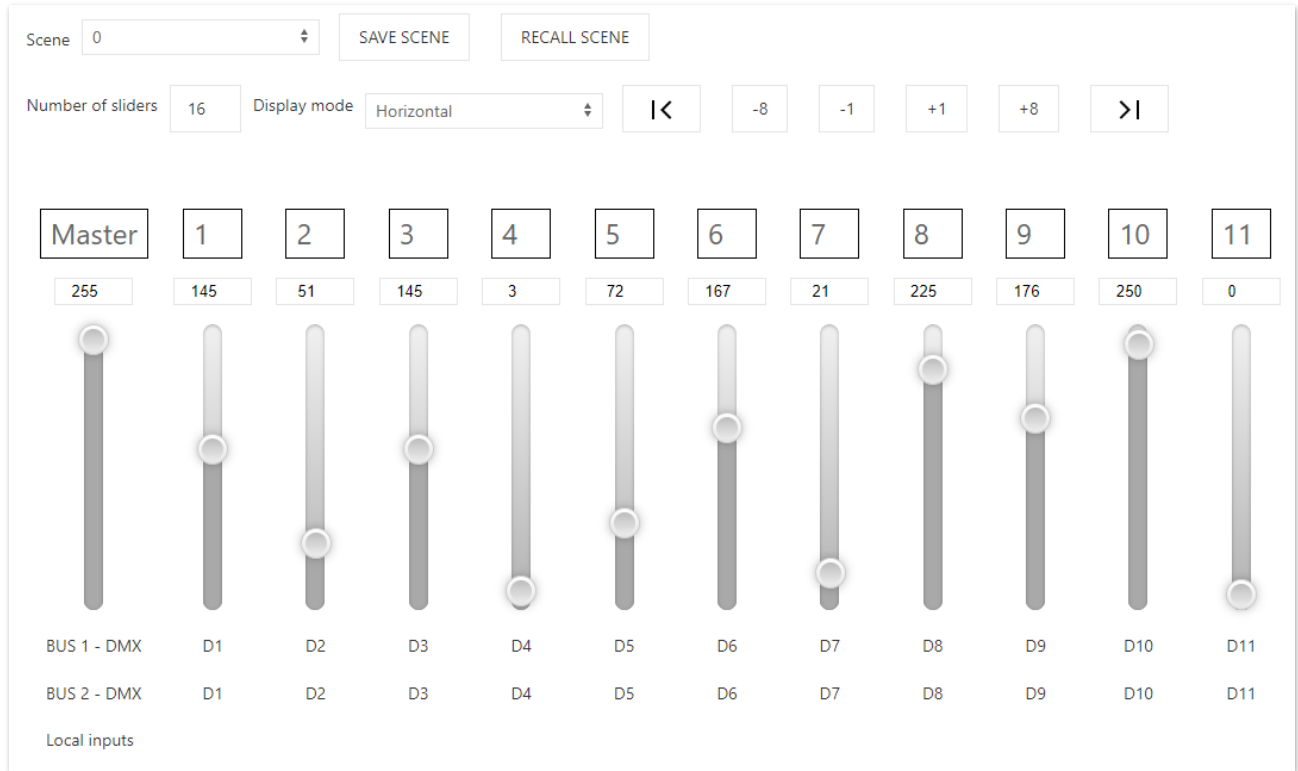
Finally, the page shows the data of the developer company. The product is manufactured by Dalcnet Srl (Italy).

10. Configuration menu

SGD	
Channels	Channels: complete list of channels with relative control
BUS	
Bus configuration	Bus Configuration: configurations for every single physical bus present on the gateway
SETTINGS	
Local inputs configuration	Local input configuration: Configuring the 8 Local Contacts
Network	Network: settings to modify and manage IP address, Netmask and MAC Address
Login settings	Login settings: settings to modify and manage LOGIN USER and PASSWORD
Telnet	Telnet: settings to enable or disable the protocol and sending times
ARTNet	ARTNET: settings to enable or disable the protocol
Firmware update	Firmware Update: update mode of the device Firmware
DIAGNOSTIC	
Log	Log: relative logs to receive remote assistance
Log configuration	Log Configuration: settings to manage LOGS

BUS

11. Channels



The gateway has a WebApp to supervise and set up all available channels by choosing from the **Channels** pop-up menu, which can be used from any recent device with a compatible browser (see below).

In **Scene** we can select the number of the scene that we can associate to pre-established scenario in **SAVE SCENE**. **RECALL SCENE** recalls the scene that has already been saved. **Power On** is the default scene that is invoked when there is no communication on the buses (e.g. power failure). Currently, the complete control of the "Color Wheel".

A window is displayed with 16 channels visible by default, you can scroll through all other channels with the +/- 8 and +/-1 buttons.

In addition, through **Number of Sliders** it is possible to choose how many channels to watch together (no more than 200).

Also in the **Display mode** selection menu, it is possible to set whether the sliders are visible horizontally or vertically.

It is possible to move all channels with the **Master channel** (Broadcast command).

Below each channel there is an indication of whether or not it belongs to one of the three available buses with the relative set offset and range (see **Bus Configuration**).

Local input will show if the channel has been associated with one of them and how it is configured.

NOTE: To use the available services and applications correctly, it is necessary to use a compatible browser: CSS-3, JS, XHR, CORS, JSON, ArrayBuffer. Compatible browsers are: Microsoft Edge v. 16, Google Chrome v. 66, Mozilla Firefox v. 57, Safari v. 12.1, Opera v. 53 or higher.

12. Bus Configuration

SGD / Bus / Bus configuration /

Bus 1

Mute

Bus type
 DMX512 master

Offset
 1

Channels range
 512

Bus 2

Mute

Bus type
 DMX512 master

Offset
 1

Channels range
 512

Bus 1 and 2 are related to the first and second DMX port.

The BUS can be disabled via the "Mute" flag.

Bus type

"Not Set" disable the bus.

Typically, the **DMX512 master** type is used.

The two outputs can be used for DMX sharing the same universe (max 512ch) as if it were a DMX splitter.

Offset

In this menu you can assign an "offset" (minimum 1).

Channels Range

Specifies the number of channels used.

After changing the settings, click on the **'APPLY'** button at the top right, otherwise the changes will be lost.

The two DMX outputs can be used as a distributor. It must be considered that on a single route we have a maximum of 32 units, after which we may have a voltage drop on the bus. So we can have 32 DMX units for each output. To reach 512 units, one or more distributors will be needed.

SETTINGS

13. Local inputs configuration

On this page, you can enable or disable the 8 local inputs. By default, local inputs are disabled. Each of them can have control of the single channel (Channel) or the single scene (Scene).

Local inputs

Local input 1 mode	<input type="text" value="Disabled"/>	<input type="text" value="Button + Dimmer"/>	
Local input 2 mode	<input type="text" value="Disabled"/>	<input type="text" value="Button + Dimmer"/>	
Local input 3 mode	<input type="text" value="Disabled"/>	<input type="text" value="Button + Dimmer"/>	

Configuring the Local Input as "Channel"

Local input 1 mode	<input type="text" value="Channel"/>	<input type="text" value="Button + Dimmer"/>	<input type="text" value="Channel 1"/>
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By setting the **Local input** in **Channel**, it is possible to control only one physical channel of the 512 available.

Type of behaviors that the local button can have:

- **Button + Dimmer**: connect an N.O. button to the local input of the gateway. A quick press switches from the OFF state to the ON state and vice versa. With a long press of the button, the selected channel can be dimmed ;
- **Button**: Connect an N.O. button to the local input of the gateway. By pressing quickly, you can switch from the OFF state to the ON state and vice versa;
- **Switch**: Connect a switch, sensors, or other devices with dry contacts to the local input of the gateway. When the switch is open (contacts are open) the status of the selected output will be set to the value "0". When the switch is closed (contacts closed) the output status will be set to the value "255".

Click **Apply** to confirm.

Configuring the Local Input as "Scene"

Local input 1 mode	<input type="text" value="Scene"/>	<input type="text" value="Button + Dimmer"/>	<input type="text" value="Scene 0"/>	<input type="button" value="RECALL SCENE"/>
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By setting the local input in Scenes , you can call up previously saved scenes.

Type of behaviors that the local button can have:

- **Button**: Connect an N.O. button to the local input of the gateway. A quick press switches from the OFF state to the state set in the scene and vice versa;
- **Switch**: Connect a switch, sensors, or other devices with dry contacts to the local input of the gateway. When the switch is open (contacts are open) the status of the selected output will be set to the value "0". When the switch is closed (contacts are closed), the status of the outputs set in the scene will be recalled.

Click **Apply** to confirm.

14. Network

SGD / Settings / Network /

IP Address

192.168.1.4

Netmask

255.255.255.0

Gateway

192.168.1.1

MAC Address

70:B3:D5:1C:F7:EE

The gateway uses the Ethernet port via IPv4 protocol.

The default IP address is: 192.168.1.4

The same address must be entered in **Composer Pro** in the **Connections/Network** section

After changing the settings, click on the top right button **APPLY** otherwise the changes will be lost.

15. Login settings

User login

Username

user

Password

user

Admin login

Username

admin

Password

admin

After logging in as **ADMIN**, you can change your username and password by clicking on **Login Settings**.

After changing the settings, click on the top right button **APPLY** otherwise the changes will be lost.

CREDENTIAL CHANGE

The first time you log in, you will be prompted to change the login credentials for the admin user. It is suggested to set a new password with numbers, uppercase and lowercase letters. No special characters are allowed.

Subsequently, in **ADMIN** mode, it is possible to change the username and password of the two users by clicking on **Login Settings** in the menu and entering the desired credentials.

Click **Apply** to confirm.

After logging in as a **user**, the web interface will be limited to displaying only the **Channels section**

16. Telnet

SGD / Settings / Telnet /

Enabled

TCP Port

Minimum scan time:

Maximum scan time:

The gateway has a Telnet server that can receive and/or transmit a DMX512A universe from/to other devices via TCP protocol, in our case to the Control4 driver.

Communication takes place by establishing a connection on **TCP port 23** (Do not change).

The minimum interval that can be set for sending the response strings is defined as **Minimum scan time**.

If no changes are detected, the interval at which the string is periodically sent is defined with the value set to Maximum scan time. A value of zero disables periodic transmission.

The tests were carried out on the basis of the default settings. The variation may lead to changes in the integration behaviour.

17. ARTNet

SGD / Settings / ARTNet /

Enabled

UDP Port

The gateway implements the Art-Net 4 protocol and can be used as a gateway by the main software and lighting control systems:

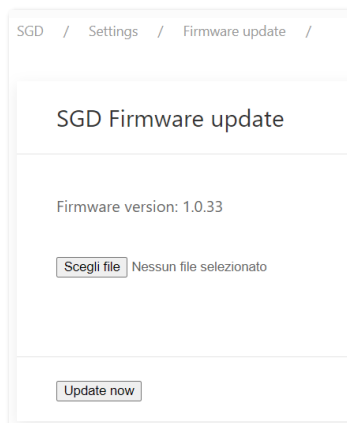
- Art-Net → DMX

The port used is there UDP 6454.

After changing the settings, click on the top right button "**APPLY**" otherwise the changes will be lost.

18. Firmware update

The firmware update is not automatic and can only be carried out if you are in possession of the *.upf file provided through the Adeo Group's channels.



From here, simply click **Choose file** and indicate the location of the file in your system.

Click on **Update now** and follow the on-screen prompts. When finished, the **Reboot** button will appear.

When restarting, the two side status LEDs **LED 1** and **LED 4** will start flashing (p. 7).

If the device subsequently returns to flashing in standard mode, the firmware update was not completed. If the update is valid and after the one already loaded, the right LED (LED 4) will remain lit and will then change three more times to different LEDs.

After the firmware update, the device flashes again in standard mode and the web page will display the new version in the information.

NEVER SWITCH OFF THE POWER FROM THE GATEWAY UNTIL THE UPDATE IS COMPLETED

At the time of writing this manual, the latest firmware version is:

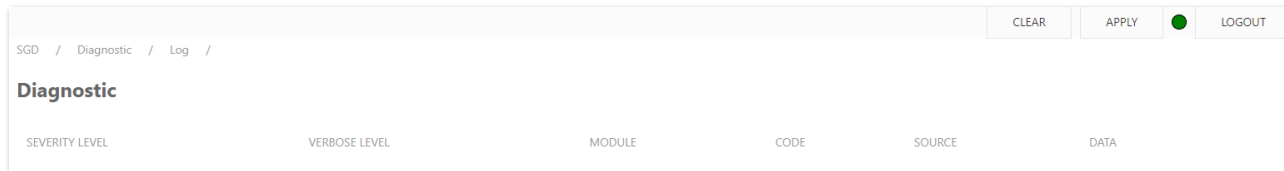
- Server Gateway DMX
- Dashboard version: 0.0.81
- Firmware version: 1.0.34
- TCP/IP stack version: TCP/IP version 2.1.2

The latest firmware can be found in the downloadable folder from <https://drivercentral.io/platforms/control4-drivers/lighting/adeo-control-sgdc41-server-gateway-dmx-driver-suite/>

Or just write to info@adeogroup.it

DIAGNOSTIC

19. Log



Technical support can be provided remotely through the **DIAGNOSTIC** web page in the **LOG** section.

To configure the diagnostics part according to remote assistance requests, select **Log Configuration**.

20. Log configuration

Security Level

Set the type of information you want to display on the **Log**:

“**Info**” information on the system that does not denote any type of problem;

“**Warning**” information that denotes that the system is functioning correctly but that may affect the functioning of the system;

“**Fault**” causing a real impact on the system

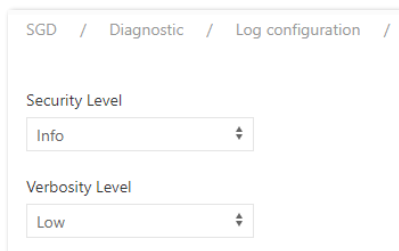
Verbosity level

This denotes the level of the information we have above and is:

“**Low**” low level;

“**Medium**” medium level;

“**High**” high level.



For more info

www.adeogroup.it

info@adeogroup.it