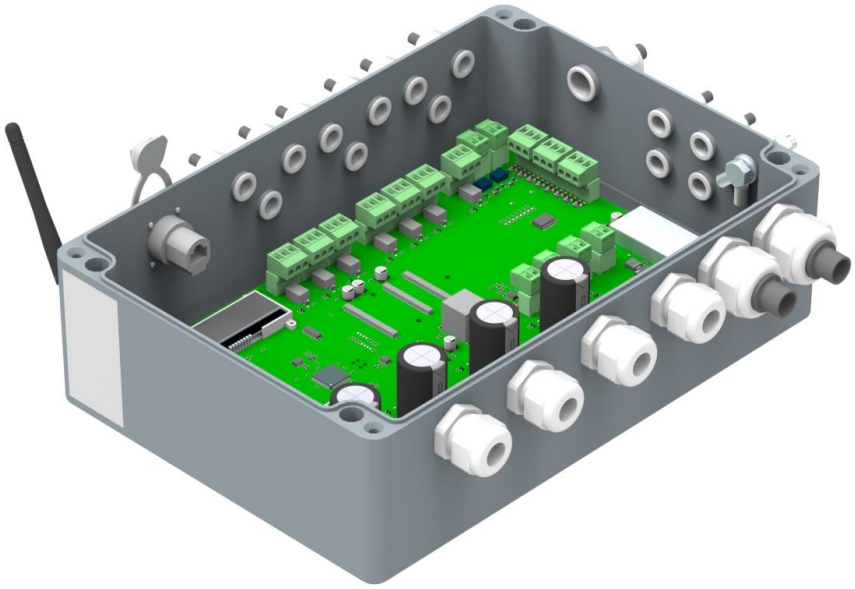
4-channel control unit 10A

Manual



VERSION	MODIFICATIONS
1.0	First edition

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1 General information

1.1 Marking concept for hazards and hints

Hazard

Hazardous situation which will cause serious injury or even death if it is not prevented.

Caution

Hazardous situation which could cause slight to moderate injury if it is not prevented.

Hint

Indicates information which does not concern personal injury, e.g. hints in respect of material damage.

Protective measures

Increase safety by applying a protective measure.

1.2 Responsibilities of the operator

- Make sure that this document is always kept in a safe place in a legible form together with the product.
- Read these instructions carefully before first start-up of the product.
- This product has been developed and produced exclusively for the use indicated in these documents. Every other use, which is not mentioned explicitly, could affect the intactness of the product and/or could constitute a source of danger.
- The manufacturer rejects any liability for damage which has been caused by incorrect or non-intended use of the product.
- In countries, which do not belong to the European Community, the national legal reference regulations as well as the standards and regulations applicable in these countries have to be observed for warranty of a corresponding safety level.
- The installation has to be carried out according to the applicable regulations.
- The manufacturer assumes no liability for inexpert execution of installation as well as deformations which may occur during operation.
- The electric power supply has to be switched off before executing any action on the installation.
- Exclusively original parts of the manufacturer shall be used for maintenance. Maintenance work may be carried out by qualified staff only.
- All procedures which are not explicitly mentioned by the manufacturer in the instructions are not permitted.
- The packing material must not be stored within the reach of children as it could be a potential source of danger.

1.3 Designation on your product

CE

The CE mark proves that your device meets the safety requirements of the EU Directives 2014/53/EU (Radio Equipment R&TTE), 2014/35/EU (Low Voltage Directive) and 2014/30/EU (EMC).

2 Introduction

To ensure proper installation, the following steps and notes must be complied with under all circum- stances. Only this way can it be ensured that the product will work to complete satisfaction.

Hint

Read all instructions before starting installation. Our sales department will be happy to answer any questions you may have.

2.1 Product features

The basic properties and advantages of the 4-channel control are:

- robust housing made of corrosion-resistant die-cast aluminium
- wide voltage range of 18 - 48 VDC
- high output power per channel 10 A
- each channel can be set individually
- versatile control options
- parameterisation via web interface or radio programming unit
- maintenance-free
- large operating range of temperature
- spare parts stock at GIFAS

2.2 Area of application

The high-performing 4-channel control is used to control all marker lights such as SecuLED, MarkLED, CircLED, TrafficLED, LaneLED WALL and LaneLED OHS. With the control a variety of needs can be covered such as dimming, blinking, flashing and running light. In addition, the controller offers a variety of options for controlling the individual channels.

Danger

The 4-channel control unit may not be used in potentially explosive environments. Combustible gases and/or smoke constitute a severe safety hazard.

Before attempting any work on the 4-channel control unit, it is imperative that you disconnect the mains supply.

Hint

Despite the 4-channel control unit being equipped for very demanding environmental conditions, it has to be made sure that it is used in conformity with protection class IP66 in order to avoid damage and malfunction.

2.3 Scope of delivery

The 4-channel control in aluminium housing is delivered completely ready for connection incl. plug RJ45/ Cat.6a IP65.

2.4 Transport

No additional measures are required for transport.

2.5 Storage

No additional measures are required for storage. With regard to packaging, pay attention to protection against damage.

2.6 Cleaning

If dirty, only clean the housing with a cleaning cloth or brush. Do not use abrasives or solvents!

2.7 Disposal of the device

This product must not be thrown in the garbage.

In accordance with official local and national regulations, this product is to be recycled appropriately.

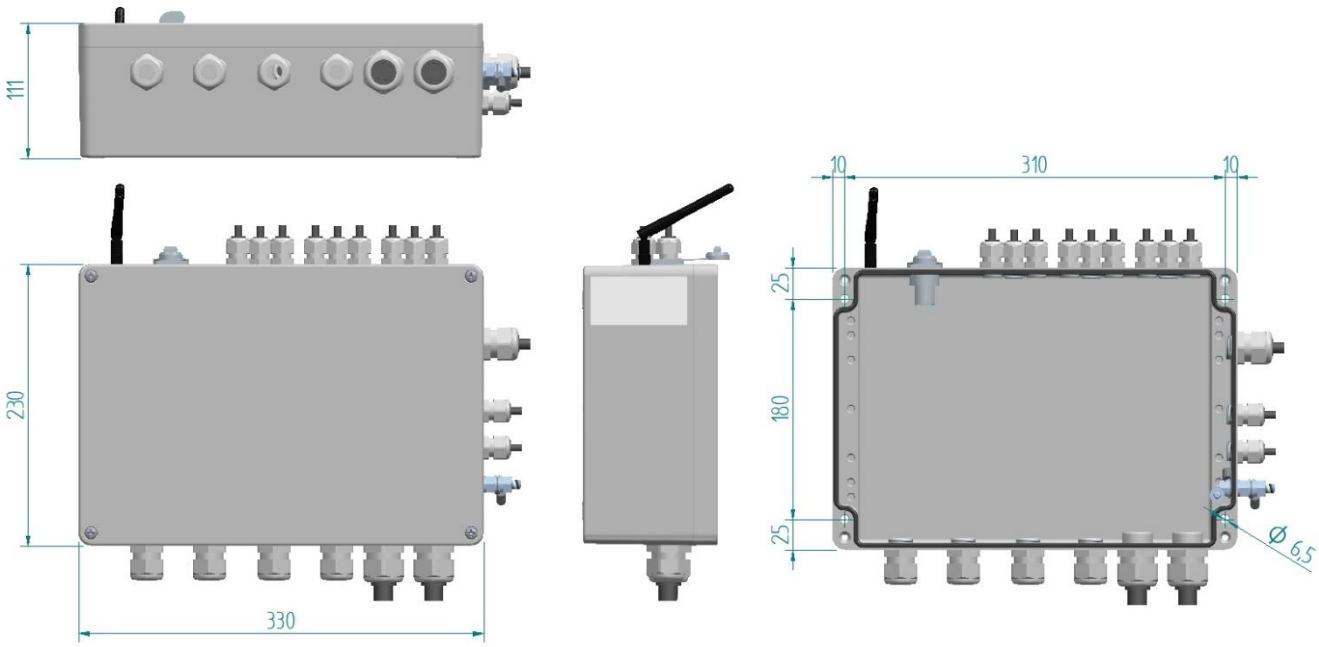
European WEEE Directive 2012/19/EU; Electrical and electronic equipment waste

3 Product

3.1 Technical Data

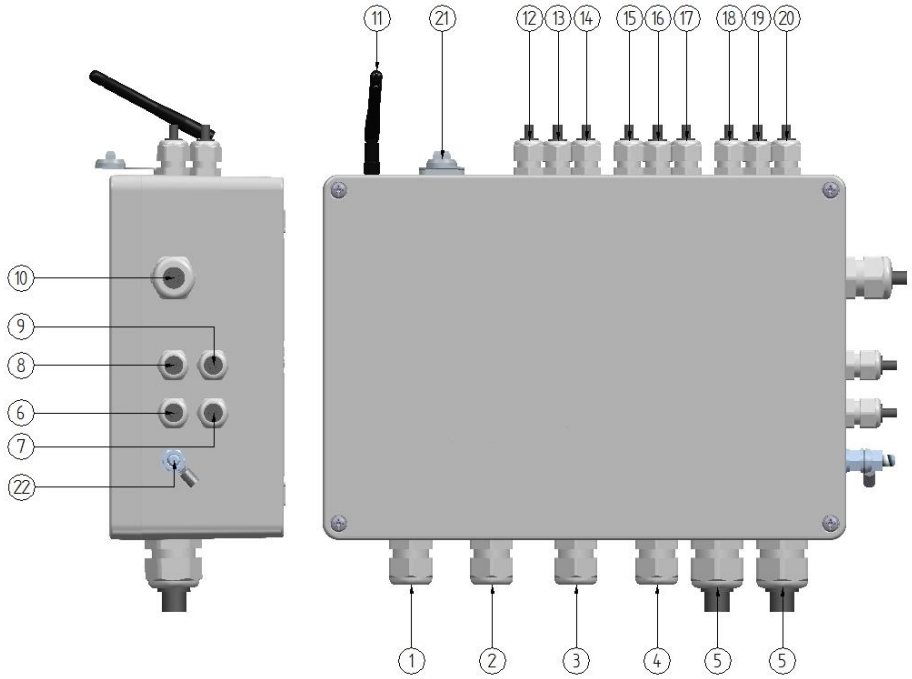
Input voltage:	18 - 48 VDC
Number of channel:	4 pcs.
Performance per channel:	480 W @ 48 VDC
System performance:	1920 W @ 48 VDC
Stand-By electricity:	68 mA
Operating life:	>= 100.000 h
Protection category:	IP65
Protection class:	III
Operating range of temperature:	–20° C to +60°C
Storage temperature:	–30° C to +70°C
Material housing:	Die-cast aluminium EN AC-AlSi9
Housing surface:	Powder coating
Housing colour:	Light gray RAL 7001
Housing seal:	Polyurethane
Weight:	5.22 kg
Dimensions:	330×230×111 mm
Certifications:	RoHS
Guarantee:	5 years

3.2 Dimensions



3.3 Set up / components

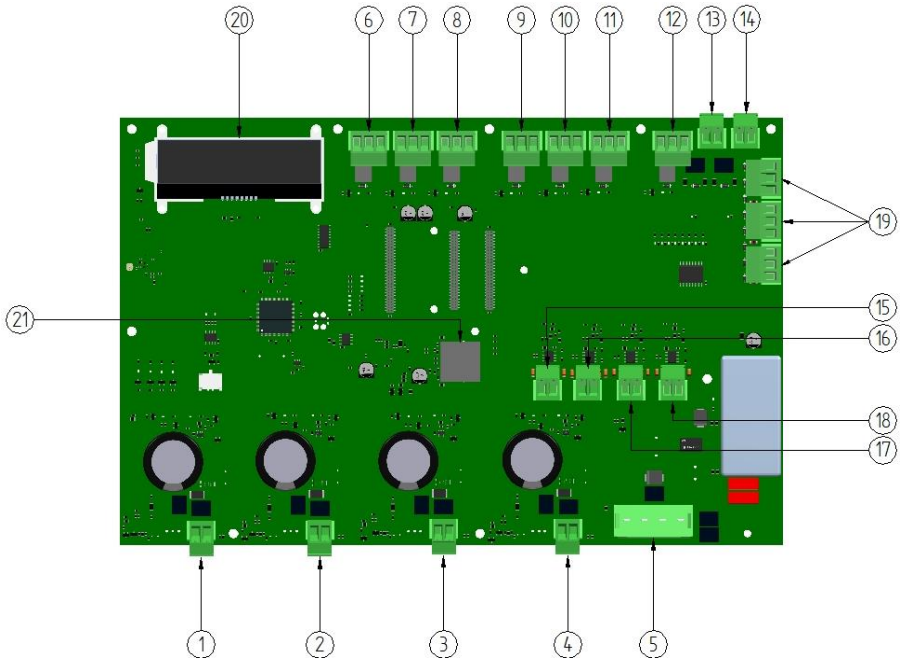
3.3.1 Casing

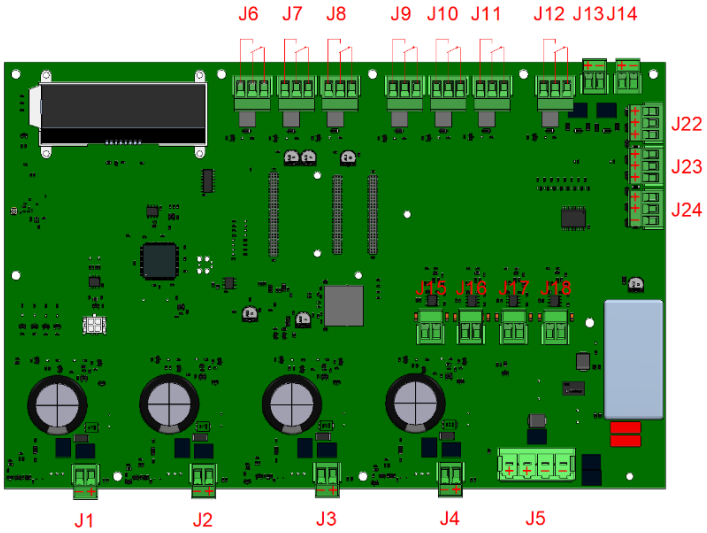


1. Cable gland M20: Connection channel 1
2. Cable gland M20: Connection channel 2
3. Cable gland M20: Connection channel 3
4. Cable gland M20: Connection channel 4
5. Cable gland M25: Connection feed-in cable

6. Cable gland M16: Feedback channel 1 dimming level 4 - 20 mA
7. Cable gland M16: Feedback channel 2 dimming level 4 - 20 mA
8. Cable gland M16: Feedback channel 3 dimming level 4 - 20 mA
9. Cable gland M16: Feedback channel 4 dimming level 4 - 20 mA
10. Cable gland M20: Connection external control signal
11. Radio antenna for radio programming unit
12. Cable gland M16: Connection differential relay J6 channel 1 «all mistakes»
13. Cable gland M16: Connection differential relay J7 channel 2 «all mistakes»
14. Cable gland M16: Connection differential relay J8 channel 3 «all mistakes»
15. Cable gland M16: Connection differential relay J9 channel 4 «all mistakes»
16. Cable gland M16: Connection differential relay J10 «Hardware and software error»
17. Cable gland M16: Connection differential relay J11 channel 1 and 2 «Failure rate exceeded»
18. Cable gland M16: Connection differential relay J11 channel 1 and 2 «Failure rate exceeded»
19. Cable gland M16: Connection external flashing contact J13
20. Cable gland M16: Connection external flashing contact J14
21. Connection network cable at RJ45 socket CAT6a
22. Connection functional earthing

3.3.2 Connection/ polarity





1 Channel 1 at terminals J1
2 Channel 2 at terminals J2
3 Channel 3 at terminals J3
4 Channel 4 at terminals J4
5 Feed of control unit at terminals J5
6 Differential relay J6 to channel 1 „all mistakes“
7 Differential relay J7 to channel 2 „all mistakes“
8 Differential relay J8 to channel 3 „all mistakes“
9 Differential relay J9 to channel 4 „all mistakes“
10 Differential relay J10 overvoltage/undervoltage
11 Differential relay J11 failure rate channel 3/4 exceeded
12 Differential relay J12 failure rate channel 1/2 exceeded
13 External flashing contact J13
14 External flashing contact J14
15 Output J15, Feedback channel 1 dimming in 4-20mA
16 Output J16, Feedback channel 2 dimming in 4-20mA
17 Output J17, Feedback channel 3 dimming in 4-20mA
18 Output J18, Feedback channel 4 dimming in 4-20mA
19 External contact for scene J22,J23,J24
20 LCD display
21 Network connection to Control via web interface

4 Description of equipment

4.1 Software Update

The 4-channel control unit must be returned to GIFAS-ELECTRIC for a software update.

4.2 Channel 1-4 / J1-J4

The 4 outputs operate independently of each other and can support a load of 10A each. The outputs are protected against short circuit, overload, temperature rise and overvoltage.

In the event of a fault, the respective output is immediately switched off (does not apply if the max. failure rate is exceeded). The other channels are not affected by this. The guidance system is connected to channel 1-4.

The following functions can be individually set separately for each channel:

- channel off
- dimming 1 - 100%
- flash 0.1 – 9.9Hz
- lightning 1 – 99ms
- running light: left – right; dimming 1-100%; operating time 100ms – 10sec ; delay action 100ms – 10sec ; switch-on delay 1 – 999sec ; duty cycle 1 – 999sec

4.3 Feeding J5

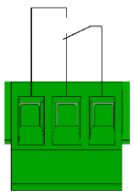
Input terminals are used to supply the 4-channel control unit. The control unit can be powered by a power supply of 18-48VDC. The dimensioning of the power supply in terms of voltage and current depends on the connected consumers. Basically, the following values apply:

- input voltage min. 18VDC to max. 48VDC
- Max. Input current 40A (10A per channel)

4.4 Differential relay channel 1 - 4 / J6 – J9

Each control unit has 1 potential-free change-over contact per channel. Failures such as short circuit, overload, temperature rise are output via this changeover contact. If one of these failures occurs, the corresponding channel is switched off immediately. With the switchover of the change contact, the error is output to a higher system.

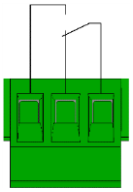
- Max. switching voltage: 250VAC / 110VDC
- Max. switching current: 1A @250VAC
- Max. switching power: 30W (DC) / 250VA (AC)
- differential relay J6 = differential relay channel 1
- differential relay J7 = differential relay channel 2
- differential relay J8 = differential relay channel 3
- differential relay J9 = differential relay channel 4



4.5 Differential relay failure rate J11-J12

The control unit has 2 potential-free change-over contacts for analysis and evaluation of the failure rate violation. Differential relay J12 indicates that the failure rate for channels 1 and 2 has been exceeded. Differential relay J11 indicates that the failure rate for channels 3 and 4 has been exceeded.

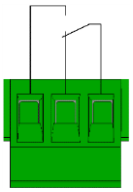
- Max. switching voltage: 250VAC / 110VDC
- Max. switching current: 1A @250VAC
- Max. switching power: 30W (DC) / 250VA (AC)
- Differential relay J12 = Failure rate violation channel 1 and 2
- Differential relay J11 = Failure rate violation channel 3 and 4



4.6 Differential relay undervoltage/overvoltage J10

The detection of undervoltage/overvoltage is output via the potential-freechange-over contact J10 . The error is also output via the differential relays J6, J7, J8 and J9 for channels 1 to 4.

- Max. switching voltage: 250VAC / 110VDC
- Max. switching current: 1A @250VAC
- Max. switching power: 30W (DC) / 250VA (AC)
- Differential relay J10 = undervoltage or overvoltage



4.7 External flashing contact J13/J14

The control unit has 2 inputs for an external flashing contact. A central control can drive the signal lights with the same cycle as e.g. tunnel traffic lights or escape routes via these inputs. Since the tunnel traffic lights and the SOS telephones could be operated with a different cycle, a priority sequence can be set.

If the flashing contact has a positive edge, all 4 channels switched on. If the flashing contact has a negative edge, all 4 channels switched off. If an edge is not detected for 2s, the channels are operated with the previously set operating functions once more.

Switching voltage: 24-60 VDC galvanically isolated

4.8 External input J22-J24

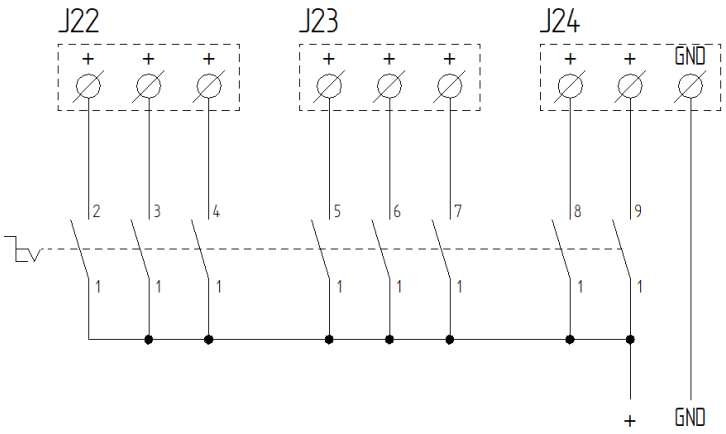
Predefined scenes can be called via an external control unit via the digital inputs. With the inputs, pre-configured scenes can be read in via an external contact or bit pattern. The setting/parameterisation of the scenes is done exclusively via the web interface and the radio programming unit.

The digital inputs can either be read in as binary or bit patterns and processed. For this purpose, the control unit must be configured for one of the two read-in variants via the web interface or the radio programming unit.

4.8.1 Binary

If the digital inputs are configured as binary inputs, a total of 8 different scenes that are permanently assigned to one input are available. Here it must be ensured that only one signal is present at an external contact, see example diagram below.

Binary feeding voltage: 10-30VDC galvanically isolated.



	Clamp J24 / Nr. 3 connection with GND
Scene 1	Clamp J24 / Nr. 2 connection with 10-30VDC
Scene 2	Clamp J24 / Nr. 1 connection with 10-30VDC
Scene 3	Clamp J23 / Nr. 3 connection with 10-30VDC
Scene 4	Clamp J23 / Nr. 2 connection with 10-30VDC
Scene 5	Clamp J23 / Nr. 1 connection with 10-30VDC
Scene 6	Clamp J22 / Nr. 3 connection with 10-30VDC
Scene 7	Clamp J22 / Nr. 2 connection with 10-30VDC
Scene 8	Clamp J22 / Nr. 1 connection with 10-30VDC

4.8.2 Bit Pattern

If the digital inputs are configured as bit pattern/binary code, a total of 31 different scenes are available. Of the 8 connection options, only the first 5 and GND are used (5 bits). The control can come from a higher-level control device and triggers the control with a 10-30 VDC signal.

Bit pattern voltage: 10-30 VDC galvanically isolated from external higher-level control device.

Connection designation	J24			J23			J22		
	GND	Bit pattern for 31 scenes					No function		
	J24 / Nr. 3	J24 / Nr. 2	J24 / Nr. 1	J23 / Nr. 3	J23 / Nr. 2	J23 / Nr. 1	J22 / Nr. 3	J22 / Nr. 2	J22 / Nr. 1
		2^{0}	2^{1}	2^{2}	2^{3}	2^{4}	2^{5}	2^{6}	2^{7}
No function		0	0	0	0	0	0	0	0
Scene 1		1	0	0	0	0	0	0	0
Scene 2		0	1	0	0	0	0	0	0
Scene 3		1	1	0	0	0	0	0	0
Scene 4		0	0	1	0	0	0	0	0
Scene 5		1	0	1	0	0	0	0	0
Scene 6		0	1	1	0	0	0	0	0
Scene 7		1	1	1	0	0	0	0	0
Scene 8		0	0	0	1	0	0	0	0
Scene 9		1	0	0	1	0	0	0	0
Scene 10		0	1	0	1	0	0	0	0
Scene 11		1	1	0	1	0	0	0	0
Scene 12		0	0	1	1	0	0	0	0
Scene 13		1	0	1	1	0	0	0	0
Scene 14		0	1	1	1	0	0	0	0
Scene 15		1	1	1	1	0	0	0	0
Scene 16		0	0	0	0	1	0	0	0
Scene 17		1	0	0	0	1	0	0	0
Scene 18		0	1	0	0	1	0	0	0
Scene 19		1	1	0	0	1	0	0	0
Scene 20		0	0	1	0	1	0	0	0
Scene 21		1	0	1	0	1	0	0	0
Scene 22		0	1	1	0	1	0	0	0
Scene 23		1	1	1	0	1	0	0	0
Scene 24		0	0	0	1	1	0	0	0
Scene 25		1	0	0	1	1	0	0	0
Scene 26		0	1	0	1	1	0	0	0
Scene 27		1	1	0	1	1	0	0	0
Scene 28		0	0	1	1	1	0	0	0
Scene 29		1	0	1	1	1	0	0	0
Scene 30		0	1	1	1	1	0	0	0
Scene 31		1	1	1	1	1	0	0	0

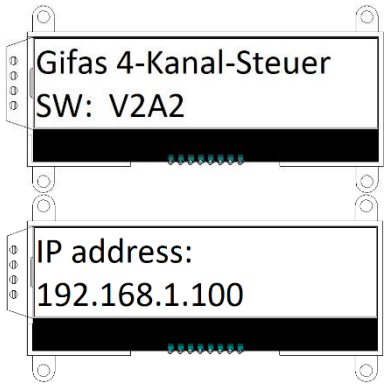
4.9 Analogue output 4-20mA

Each channel has its own analogue output. The 4 analogue outputs can be used to output the set dimming level. 4mA correspond to 0 pc brightness and 20 mA correspond to 100 pc brightness. The output or feedback of the analogue output is ensured exclusively by the dimming function.

Electricity	Value in pc	Possible display
4.16mA	1%	Dimming level display 1%
4.32mA	2%	Dimming level display 2%
4.48mA	3%	Dimming level display 3%
4.64mA	4%	Dimming level display 4%
4.8mA	5%	Dimming level display 5%
4.96mA	6%	Dimming level display 6%
5.12mA	7%	Dimming level display 7%
5.28mA	8%	Dimming level display 8%
5.44mA	9%	Dimming level display 9%
5.6mA	10%	Dimming level display 10%
5.76mA	11%	Dimming level display 11%
5.92mA	12%	Dimming level display 12%
6.08mA	13%	Dimming level display 13%
6.24mA	14%	Dimming level display 14%
6.4mA	15%	Dimming level display 15%
6.56mA	16%	Dimming level display 16%
6.72mA	17%	Dimming level display 17%
6.88mA	18%	Dimming level display 18%
7.04mA	19%	Dimming level display 19%
7.2mA	20%	Dimming level display 20%
7.36mA	21%	Dimming level display 21%
7.52mA	22%	Dimming level display 22%
7.68mA	23%	Dimming level display 23%
7.84mA	24%	Dimming level display 24%
8mA	25%	Dimming level display 25%
8.8mA	30%	Dimming level display 30%
11.2mA	45%	Dimming level display 45%
13.6mA	60%	Dimming level display 60%
16mA	75%	Dimming level display 75%
18.4mA	90%	Dimming level display 90%
20mA	100%	Dimming level display 100%

4.10 LCD display

4.10.1 LCD display during start/reset

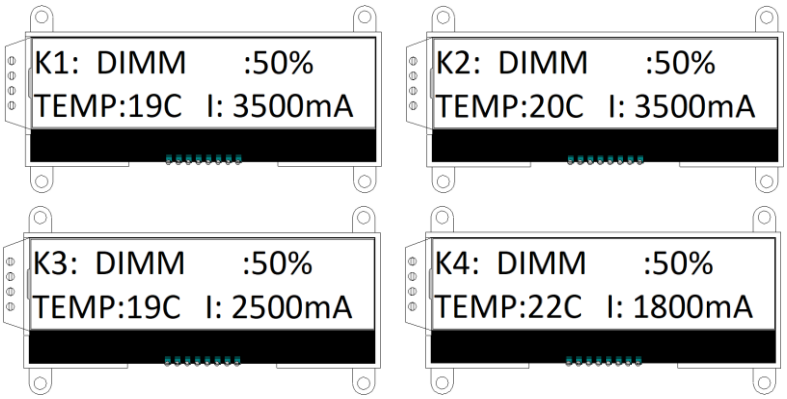


When starting or resetting the control, the name of the control unit appears first. If the designation of the controller is changed in the web interface, the new designation of the controller also appears on the display. The second line describes the software version. In this case it is version V2A2.

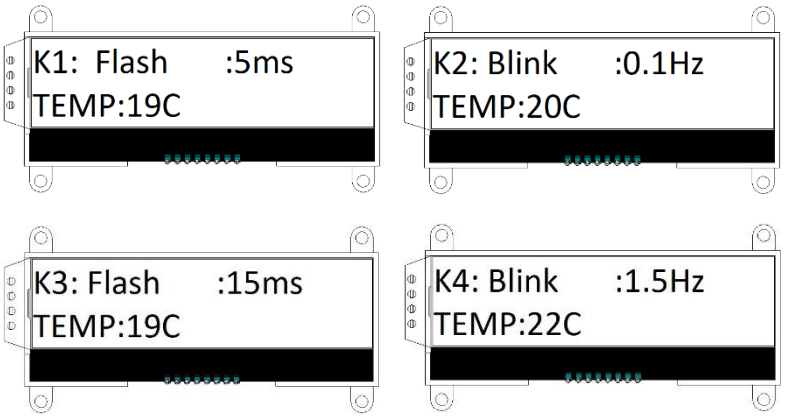
After switching on or resetting the device, the set IP address appears shortly after the start. If the controller is integrated in a network with DHCP (automatic IP address assignment), the IP address for the web interface can be determined via this LCD display.

4.10.2 Display function / configuration

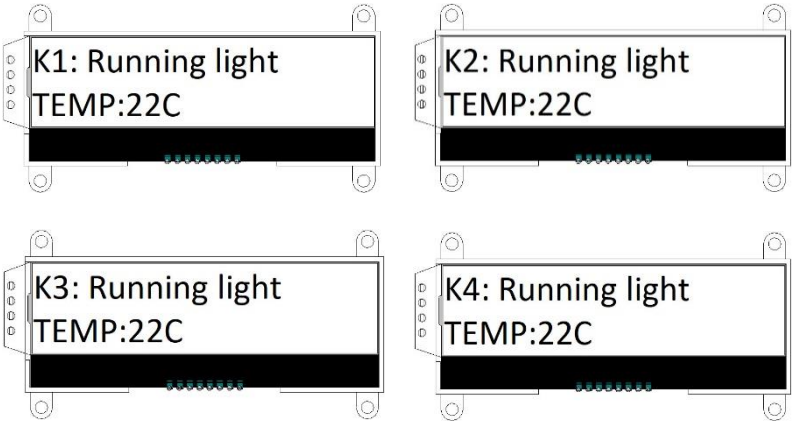
During operation, each function of the respective channel is displayed with the corresponding set values such as dimming, flashing, flashing and running light. The view changes every second from channel 1 to channel 4. In addition, the temperature of the respective channel and the current consumption of the channel during dimming are displayed.



Example of a display with differently configured channels. Channel 1 is configured as a flash with a flash duration of 5 ms. Channel 2 as flashing light with a frequency of 0.1 Hz. Channel 3 is again configured to flash at 15 ms, and channel 4 is defined to flash at 1.5 Hz.

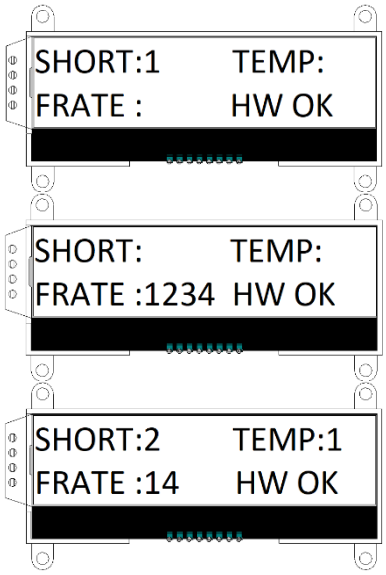


4.10.3 Running light display



4.10.4 Error / fault display

If there are faults in the control system, these is also an output via the LCD display. All errors such as short circuit (SHORT), overtemperature (TEMP), failure rate overflow (FRATE) and hardware/software error (HW) are output. In addition to the abbreviation of the respective error, the channels affected by the error are displayed. One stands for channel 1, 2 for channel 2, 3 for channel 3 and 4 for channel 4.



There is a short circuit on channel 1.

Here a failure rate violation has occurred at channels 1, 2, 3, 4.

There is a short circuit on channel 1, an over-temperature at channel 1 and a failure rate overflow at channels 1 and 4.

5 Assembly and installation

5.1 Safety

If the 4-channel controller develops mechanical damage or electrical defects, it must be put out of operation immediately! The current national guidelines apply to the periodic reviews.

Hint

To avoid hazards, damaged components may only be replaced by the manufacturer, its service representative or a comparable specialist.

5.2 Assembly

Hint

As a standard, the 4-channel controller is delivered with an aluminium housing. The integrated through-holes are used for mounting.

The distances between the holes and the screw diameters can be taken from the drawing under 2.2. Fastening material to be dimensioned according to assembly location and secure screws against self-loosening, if and when necessary !

5.3 Connection

Hint

In order to ensure tightness, the enclosed screw connections must be tightened. According to the manufacturer's specifications, they must be tightened with the following torque:

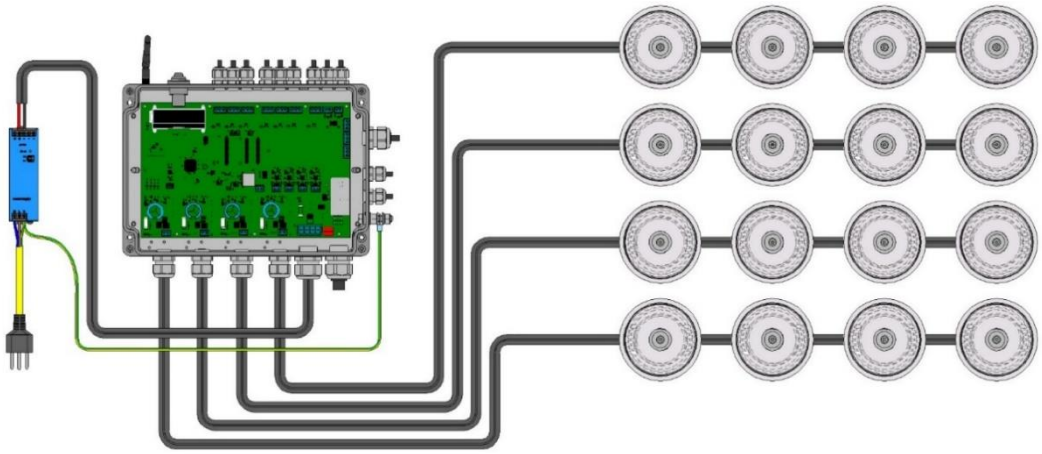
- Cable gland M16 Tightening torque 3 Nm
- Cable gland M16 Tightening torque 4.5 Nm

At installation points where the connecting cable is subject to particular mechanical stress, it must be protected by suitable measures.

No liability can be accepted for incorrect connections (lack of tightness).

5.4 Connection of control

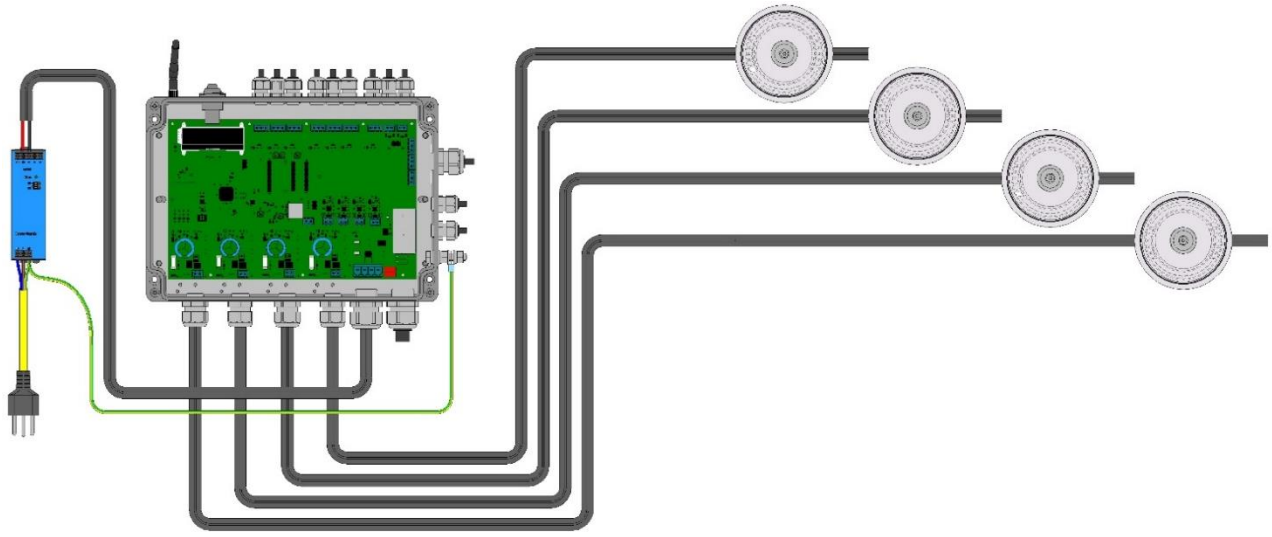
The power supply unit is connected by means of a suitable cable through the cable gland No. 5 (see section 2.3.1) and to terminal No. 5/J5 (see section 2.3.2) of the control unit. The positive terminal is connected to the two terminals on the left. The negative terminal is connected to the two terminals on the right. The dimensioning of the power supply unit results from the necessary voltage and the current of the installation. The functional earthing must be connected to the earth bolt M8 and the protective earth conductor of the mains. It is used for EMC compatibility. The system cable 2 x 2.5 sqmm can then be connected to the respective channel. For channel 1, insert the system cable through cable gland No. 1 (see section 2.3.1) and connect to terminal No. 1/J1 (see section 2.3.2). Pay attention to the polarity again ! This time connect the positive terminal on the right side and the negative terminal on the left side of the terminal. The remaining 3 channels (channel 2,3,4 at terminals J2,J3,J4) are connected in the same way.



5.5 Connection of running light

Hint

In order for the running light to function optically correctly, each channel must be used for the running light. It is also important to ensure that the lamps are always connected alternately to channel 1-4 in sequence (see overview drawing).



5.5.1 Configuration options of running light

Function	Range	Explanation
LED duty cycle	100ms - 10sec	Defines the time during which the lamps are lit.
LED delay action	100ms – 10sec	Defines the time during which the lamps are switched off.
Dimming	1-100%	To determine the brightness
Running light direction	Right/left or 1/2	Defines the running light direction 1 = channel 1-2-3-4 2 = channel 4-3-2-1
Save settings		All settings are stored in Operation mode of the running light.
Switch-on delay	0-999sec	Lets the running light start with a time delay. Only for use with external input and pulse operation.
Duty cycle	0-999sec	Determines how long the running light is executed. Also for use with external input and pulse operation only.

6 Start-up Webinterface

The control can be controlled and parameterized by the web interface. For a connection to the LAN network, it is assumed that the controller is connected to the network via the RJ45 CAT/6a network interface.

6.1 Web browser

In the web browser (Microsoft Edge, Firefox, Safari, Chrome) the IP address of the controller can be entered instead of an Internet address (example: https://www.gifas.ch) (example: http://172.25.3.191). The presentation of the web interface can vary slightly from browser to browser. A pop-up window will open to enter the user name and password. If the login data was entered correctly, the "Control" user interface appears on the browser as start page.

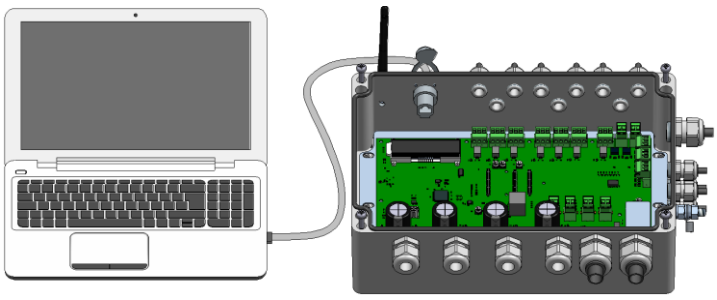
6.2 Registration data of web interface

The default user name is "admin" and the password is also "admin".After logging in for the first time, the password can be changed individually. The user name cannot be changed.

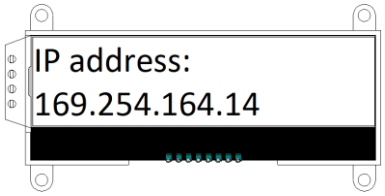
6.3 Direct connection to the PC

If no network is available, the 4-channel controller can be directly connected to a PC for parameterization using a standard patch cable. No crossover patch cable must to be used. For configuration, existing network connections on the PC should be temporarily deactivated. It must also be ensured that the controller is supplied with power.

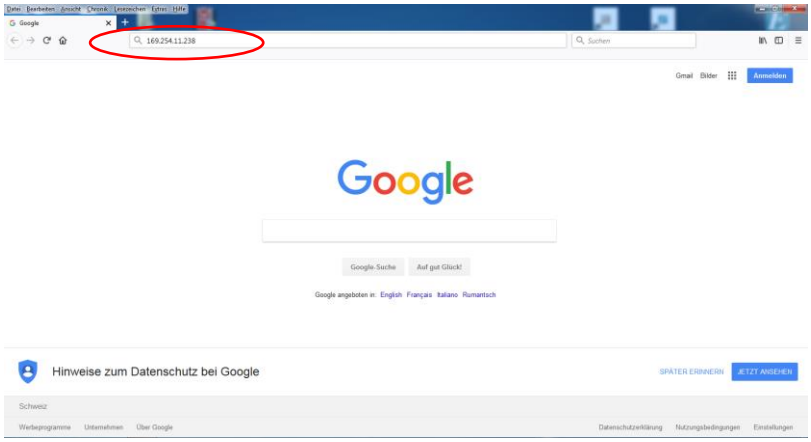
As a first step, the connection with the 4-channel control and the PC is carried out via network cable. To do this, connect the network cable to the socket of the 4-channel controller and to the PC.



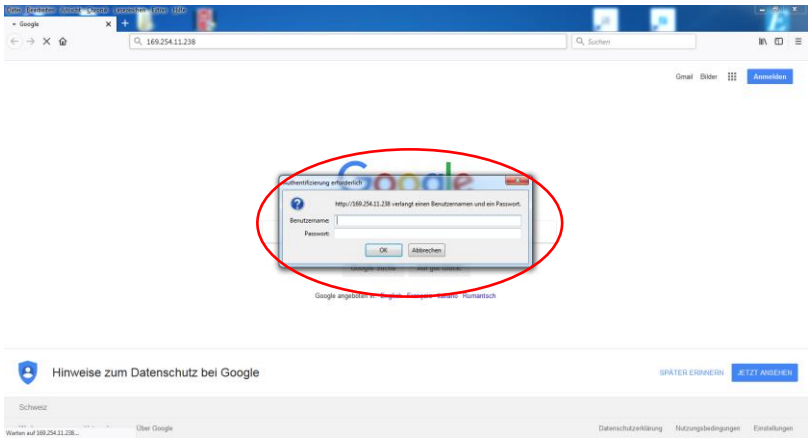
No manual IP address has to be assigned on the PC side. The IP addresses are assigned automatically. About 70 seconds after establishing the connection between the PC and the controller, the new IP address can be read on the display of the 4-channel controller.



The IP address read can now be entered in the web browser.

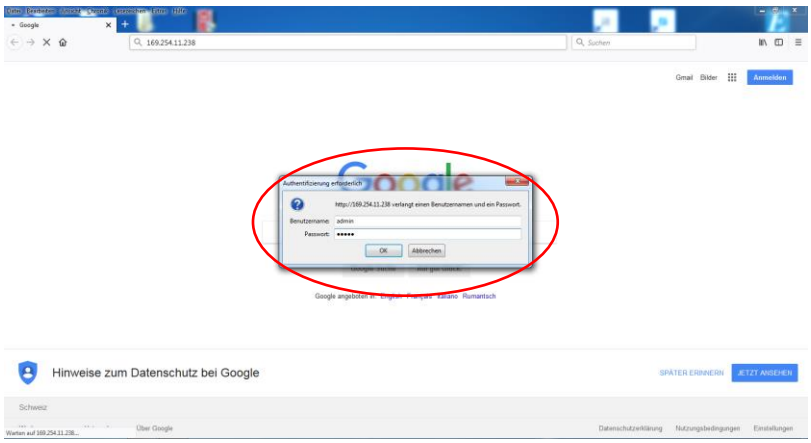


If the IP address was entered successfully in the web browser, the login window for the 4-channel control. appears.

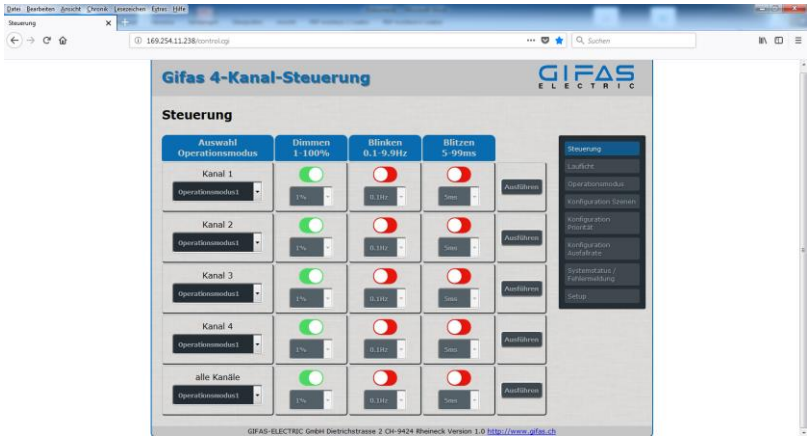


The login data for the initial commissioning would be:

- user name: admin
- password: admin



After successfully entering the login data, the web interface for 4-channel control appears in the web browser.



6.4 Integration into the network with DHCP

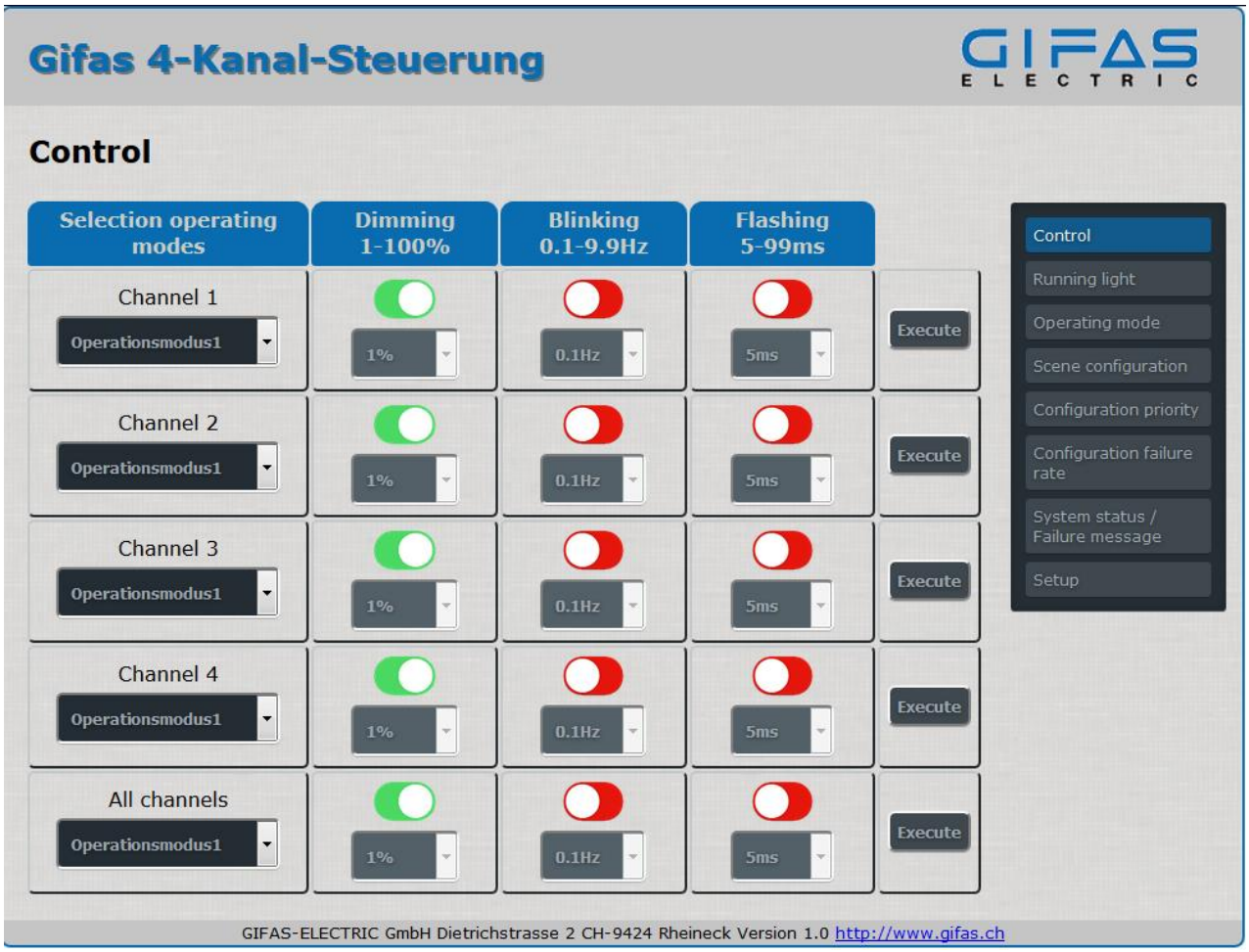
If the controller is connected to a network that has DHCP, the IP address for the controller is automatically assigned by the network. When switching on or resetting the controller, the IP address can be found on the display of the controller. Basically, the procedure for connecting the 4-channel control is the same as described in chapt. 5.1. A manual assignment of the IP address for the 4-channel control is not possible.

7 Webinterface

7.1 Control unit

The "control" menu is used for manual setting of a channel with a function such as dimming, blinking and flashing. A distinction is made between two different modes:

- Execute a function from "manual “Operation mode”
- Executing a function using a self-defined "Operation mode"

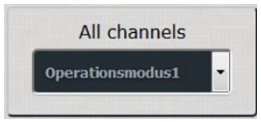


7.1.1 Selection window "Operation mode"

The first selection window selects the operation mode. The first mode is "manual". If this mode is selected, the channel can be set individually. If another Operation mode is selected as "manual"; no channel setting ("Dimming", "Blinking" and "Flashing") can be made here. The setting options are locked. The setting of the operation modes is also indicated by the indicators "Dim", "Blink" and "Flash". A total of 11 operation modes are available, supplemented by 5 manual modes. If a request is made to the digital inputs bit/byte, the manual inputs and the operation modes are overridden, as these have a low priority. When the request is completed, the control returns to the previous manual state.

Manually	Channel 1
Manually	Channel 2
Manually	Channel 3
Manually	Channel 4
Manually	Channel 1-4
Operating mode 1-11	Channel 1-4

7.1.2 All channels



The first selection window selects the operation mode. The first mode is "manual". If this mode is selected, the channel can be set individually. If another operation mode is selected as "manual"; no channel setting ("Dimming", "Blinking" and "Flashing") can be made here. Then only the pre-programmed operation mode can be executed and the setting options such as "Dimming", "Flashing" and "Flashing" are disabled. The buttons for channel 1-4 are also switched off and the colour changes from green to red. The setting of the operation modes is also indicated by the indicators "Dim", "Blink" and "Flash". The output on channel 1-4 is done by using the button "Execute". To exit the "all channels" mode, you can switch back to the single channel mode at channel 1-4 by "Execute".

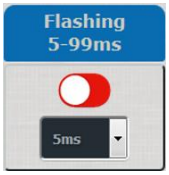
7.1.3 Dimming

If "Dimming" is switched on, the dimming level can be set in 1 pc steps in the lower range. The input is done by using the keyboard or by scrolling in the window. Incorrect entries are ignored. If "Dimming" is activated, the function "Blinking" and "Flashing" is deactivated at the same time. The buttons are switched off and change colour from green to red. The output to the channel is done by means of the button "Execute".

7.1.4 Flashing

If "Flashing" is activated, the "Flashing" the flash frequency can be set from 0.1-9.9 Hz in 0.1 Hz steps in the window "Flashing". When flashing no brightness adjustment can be made. The value can be set using the keyboard or by scrolling in the window. When this function is enabled, functions such as "Dimming" and "Flashing" are disabled. The buttons are switched off and change colour from green to red. Incorrect entries are ignored. The output to the channel is done by means of the button "Execute".

7.1.5 Lightning



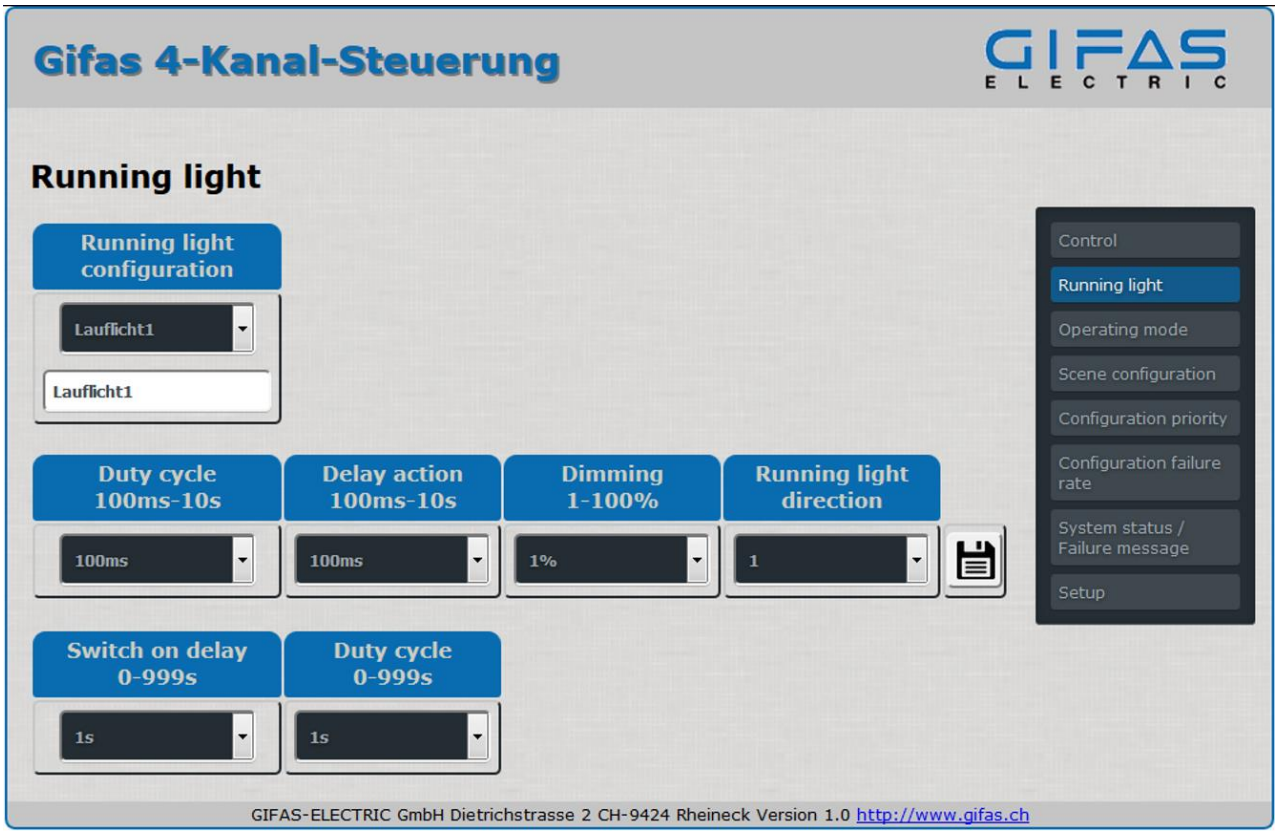
If "Flashing" is activated, the flash pulse of 5-9 9ms can be set in 1 ms steps in the "Flashing" window . When flashing no brightness adjustment can be made. The value can be set using the keyboard or by scrolling in the window. When this function is enabled, functions such as "Dimming" and "Flashing" are disabled. The buttons are switched off and change colour from green to red. Incorrect entries are ignored. The output to the channel is done by means of the button "Execute".

7.1.6 Implement/Execution

In order to save the already set function on the corresponding channel, this must be confirmed with the button "Execute". Only then will the corresponding channel execute the desired setting.

7.2 Running light

With the running light, the lamps cannot be individually controlled or addressed. The configuration takes place in the web interface and the radio programming unit. The running light can be switched on or off using the external digital inputs/scenes and/or the web interface. The lamps can be dimmed during running light operation. In addition, the speed and running direction can be defined in advance (channel 1-4 or channel 4-1).



7.2.1 Description of the running light function

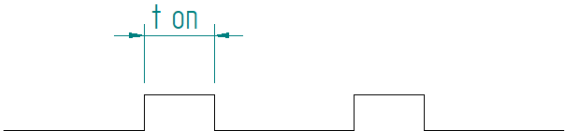
The following functions can be set:

Function	Range	Explanation
Configuration of running light	Running light1-4	Selection of the 4 running lights for individual parameterization
Designation of running light	Max. 19 characters	Individually created description for scenes
Duty cycle LED	100ms - 10sec	Defining the brightness
Delay action LED	100ms – 10sec	Determination of the running light direction:
Dimming	1-100%	Selection of the 4 running lights for individual parameterization
Running light direction	Right/left	Determination of the running light direction: 1 = channel 1-2-3-4 2 = channel 4-3-2-1
Save settings		All settings are stored in Operation mode of the running light.
Switch-on delay	0-999sec	Lets the running light start with a time delay.
Duty cycle	0-999sec	Extends the running light function by the parameterized value.

In case of a power failure no setting is lost and the data can also be exported and then transferred to a new controller.

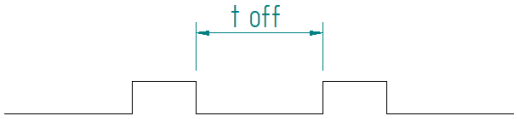
7.2.2 Operationg time LED

Used to define the luminous duration "t on". If the value is increased, the individual lights shine longer.



7.2.3 Delay action LED

Here you define how long a break between 2 lights should be, in which no light is lit "t off".

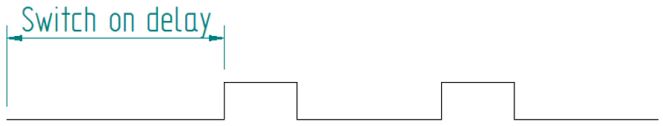


7.2.4 Running light direction

Determines the running direction of the running light. Depending on the connection, the running light can go from right to left or from left to right.

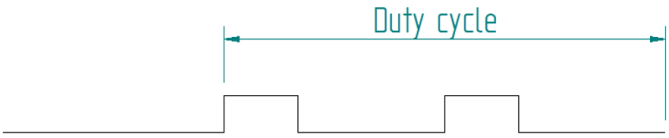
7.2.5 Switch-on delay

The time delay must be activated by pressing the corresponding button. It is only now that it is possible to set a switch-on delay. If the switch-on delay action is activated, the running light start is delayed by the set value. The running light with time function can be started with a pulse. A pulse mode for running light only makes sense in conjunction with duty cycle/on delay. The choice of whether impulse or continuous signal is required is the responsibility of the operator. If the running light is started without on delay/on duration, a continuous signal must inevitably be set.



7.2.6 Operating time

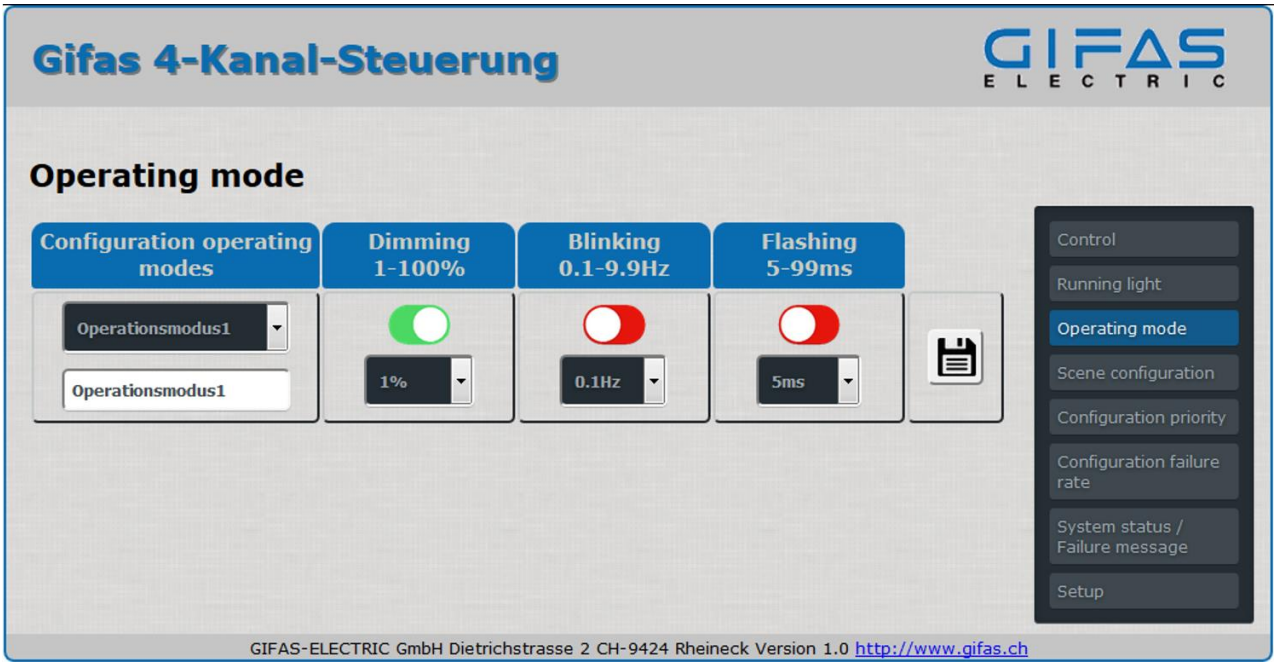
The on duration must be activated by pressing the corresponding button. The on duration is used to set the duration of the running light. When the set value has elapsed, the running light is stopped and the control returns to the previous state.



7.2.7 Execution of running light

The running light can be executed by using the web interface and by the external digital inputs. In the first step, the running light is selected by using the "Scene" menu. The running light can be executed in the web interface exclusively via "Scene". The "Control" menu is blocked and the message "Remotely controlled by external input/scene" appears.

7.3 Operating mode



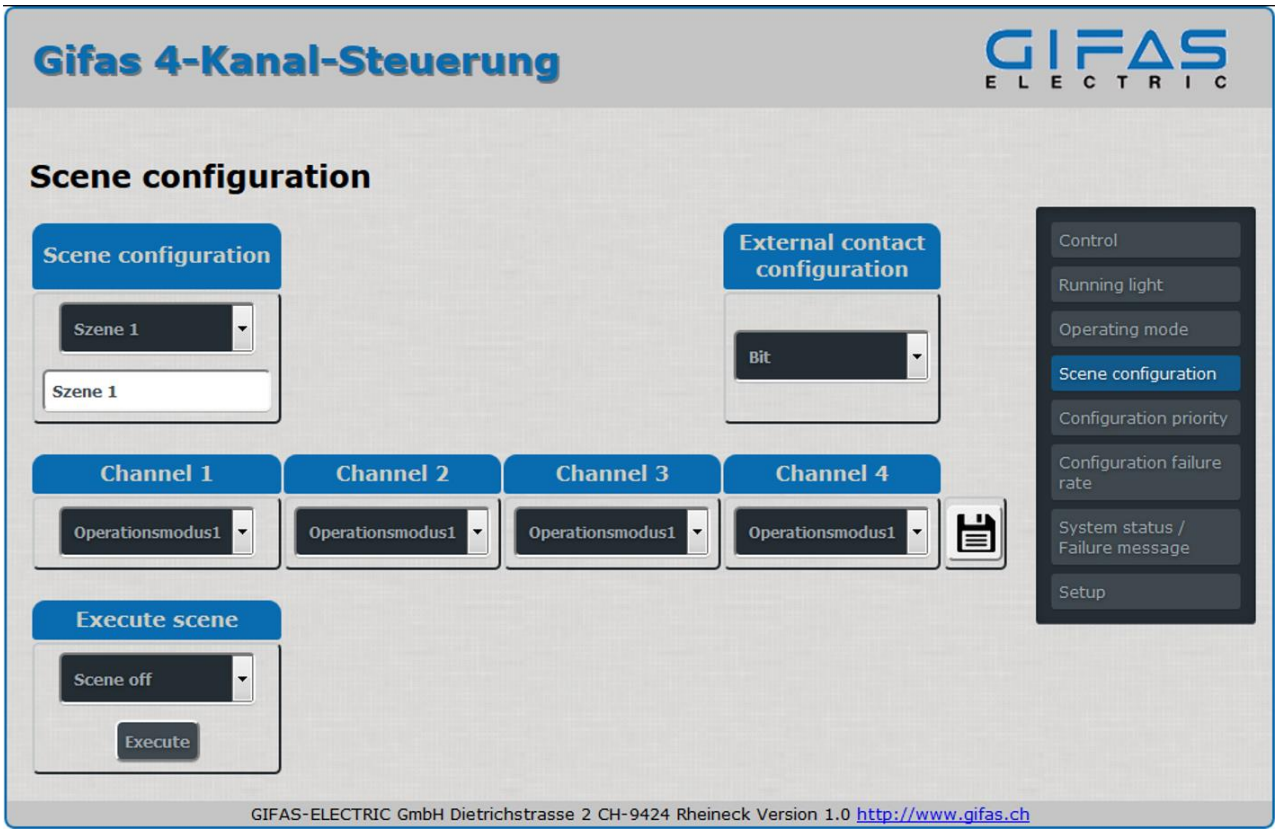
If "Configuration Operation mode" is selected in the menu "Configuration Operation mode", the following menu can be used to assign certain functions to an Operation mode. The operation modes must be defined in advance if a scene is to be configured. In the first area, Operation mode 1 to 11 can be selected. The respective Operation mode can be changed under a user-specific name and can be saved permanently. The following setting options are available:

- channel off
- dimming 1 - 100%
- flash 0.1 – 9.9Hz
- lightning 5 – 99ms

No setting is lost in the event of a power failure. The data can also be exported and then transferred to a new controller.

7.4 Configuration – Scene

Scenes are required for control by the digital inputs. If configured in advance, scenes can be used to set all channels to a specific value on command. The channels can perform different functions:



7.4.1 Description of function of scenes

Function	Range	Explanation
Configuration of scenes	Scene 1-8 Scene 1-31	Selection of scenes: Binary (bit) setting: max. 8 scenes possible Byte (binary code) Setting: max. 31 scenes possible
Designation of scenes	Max. 19 characters	Individually created description for scenes with max. 19 characters
Channel 1-4	11 operating mode 4 operation modes	Selection of the 11 operation modes, the 4 running light modes. Or deactivating the channels. Since a scene of 1,2,3 or 4 channels can be operated in individual mode
Save settings		Setting is saved permanently
Configuration of external input		Used to parameterize the digital input With bit processing, max. 8 scenes are possible. With byte processing there are max. 31 scenes.
Execution of scenes		The already saved scenes can be selected and started by means of the "Execute" button.

7.4.2 Creating / processing of scenes

Scenes are configured in a separate "Scene" menu in the web interface or via the radio programming unit. Scenes are created with the operation modes. See example:

1. Selection of the scene	Scene 1-31 or 1-8	Individual designation
2. Definition of the scene	Channel 1	Pre-defined operation modes 1-11
	Channel 2	Pre-defined operation modes 1-11
	Channel 3	Pre-defined operation modes 1-11
	Channel 4	Pre-defined operation modes 1-11
3. Saving the setting		

In case of a power failure no setting is lost and the data can also be exported and then transferred to a new controller.

7.4.3 Execution of scenes using the web interface

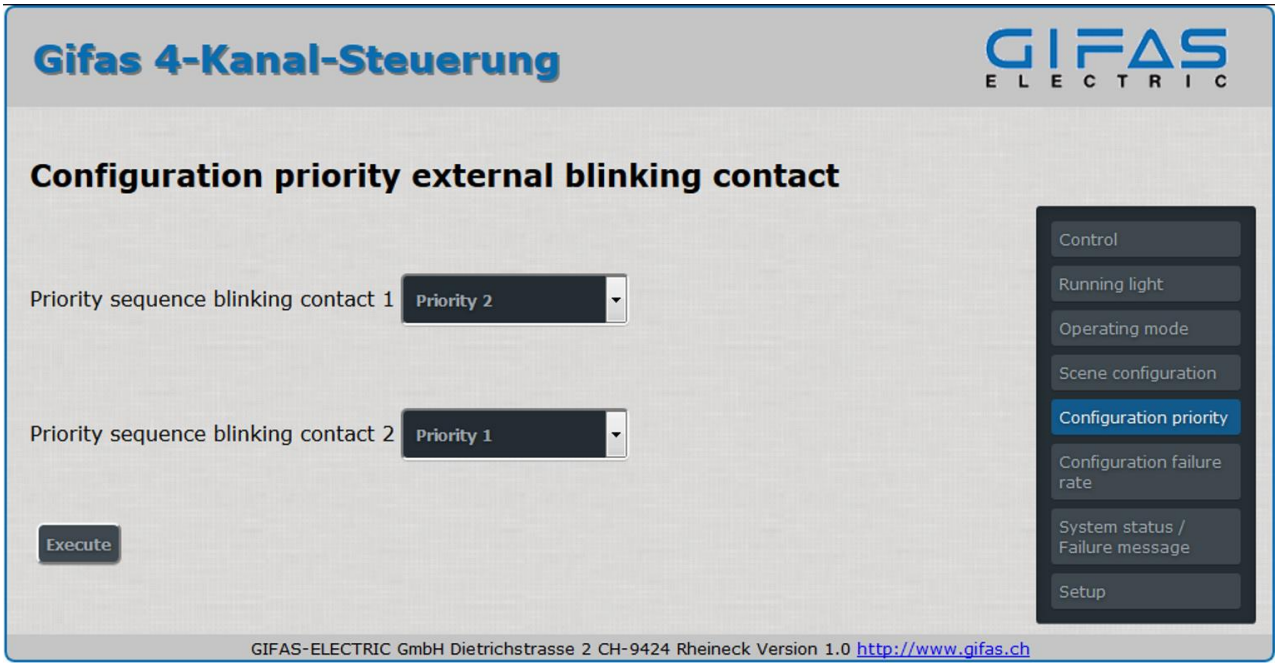
If a scene is executed via a web interface, it is intermittently signaled at the external on-gear. For the controller, the execution of a scene via the external digital inputs has a higher priority.

7.4.4 Stopping of scenes using the web interface

If a scene is executed when the web interface is used, the "Control" menu is blocked. Leaving the scene by using the web interface is only possible if the "Scene off" is selected. Afterwards, each channel can be set separately in the “Control” menu. Alternatively, another scene can be selected and executed.

7.5 Configuration – priority of external flashing contact

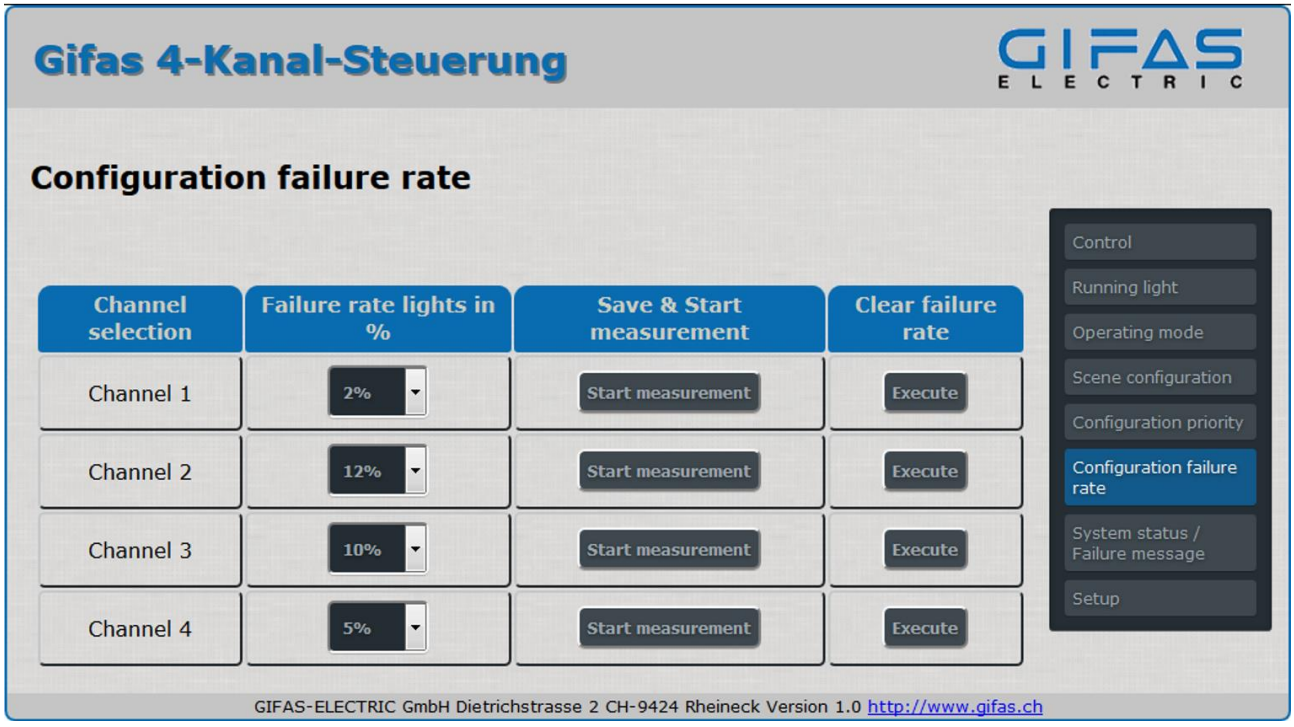
The priority order of the external flashing contacts can be set in this menu. The flashing contact with priority 1 has the highest priority. If, for example, a positive edge is detected on both external flashing contacts, only the left signal with the highest priority is executed. In addition, the execution of a scene or operation mode is interrupted by the external flashing contact. As soon as no positive edge is present at the input for more than 2 seconds, the control returns to the previously executed state. The settings are retained in the event of a power failure.



7.6 Configuration failure rate

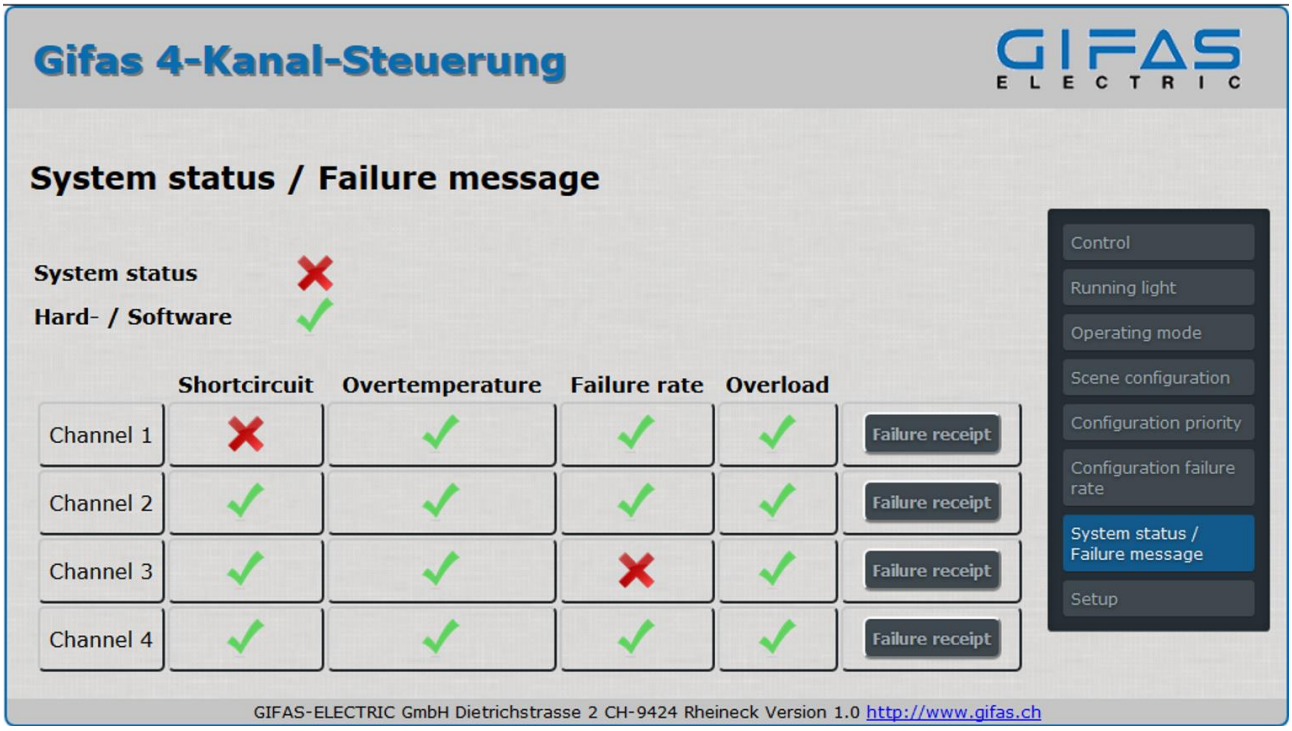
The failure rate detection is used to monitor the channels for possible lamp failures. The detection of whether lamps have failed or not is carried out by means of a measurement integrated in the control system. If the current of a channel decreases by the set value, the controller detects that too many lights have failed. The error is output by the potential-free contact, by the radio programming unit, by the web interface and the display on the board.

If "Configuration of failure rate" is selected in the menu, the desired failure rate can be set. Each channel must be measured individually and the failure rate has to be set. The failure rate can be set in 1 pc steps in the first section. A keyboard or mouse can be used for input. The ""Start measurement"" button is used to carry out the measurement. The measurement and the setting in per cent are automatically saved permanently after the measurement has been completed. In the event of a power failure, the values remain unchanged and the measurement does not have to be repeated. If flash or running lights are used, the controller cannot monitor the failure rate. In addition, false tripping can occur in applications with low loads and dimming below 6 pc. Since the controller is designed for a max.10 A per channel and the failure rate can be set in 1 pc steps, the smallest possible resolution is 100 mA (1 pc corresponds to 100 mA).

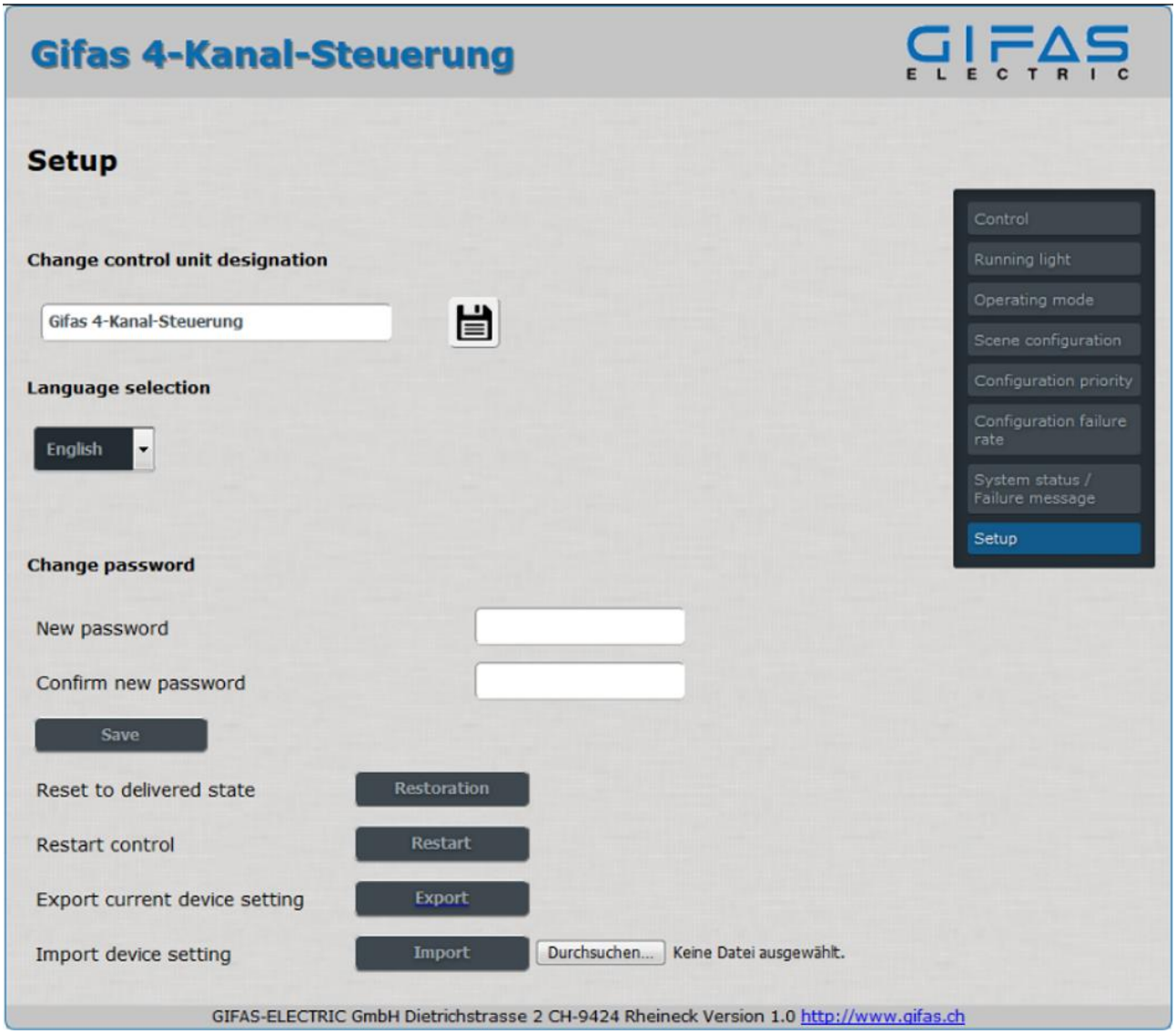

Gifas 4-Kanal-Steuerung
GIFAS ELECTRIC
Configuration failure rate
Channel selection
Failure rate lights in %
Save & Start measurement
Clear failure rate
Channel 1
2%
Start measurement
Execute
Channel 2
12%
Start measurement
Execute
Channel 3
10%
Start measurement
Execute
Channel 4
5%
Start measurement
Execute
Control
Running light
Operating mode
Scene configuration
Configuration priority
Configuration failure rate
System status / Failure message
Setup
GIFAS-ELECTRIC GmbH Dietrichstrasse 2 CH-9424 Rheineck Version 1.0 http://www.gifas.ch

7.7 System status/Error message

All errors are displayed in the "System status/Error message" menu. If an error is detected, the "System status" display is marked by an X. If the system is functioning correctly, the system status is marked by a tick. In addition, a hardware or software error is displayed. The table shows the specific errors for each channel and error. The same symbols are used for identification as described above. The errors can be deleted by using the "Acknowledge error" button.



7.8 Setup



7.8.1 Designation of Control unit

The control unit can be provided with an individual designation with max. 35 characters. When delivered, the standard designation is "GIFAS 4-channel control". If the designation is changed and then confirmed with "SaveS", the text of the control unit changes. The designation is also displayed on the radio programming unit.

7.8.2 Language selection

The control can be set to the following languages as required.

- German
- French
- Italian
- English

7.8.3 Password

Here you can create your own individual password. The factory password will be overwritten. It is not possible to create multiple passwords. If the password is lost by the user, the control unit can be reset to the factory settings by using the radio programming unit.

7.8.4 Reset to factory settings

The controller can be reset to the factory settings. All changes and all individual settings and designations including the password are irrevocably deleted.

7.8.5 Re-Start of control

There is no loss of data when the controller is restarted.

7.8.6 Exporting current device setting

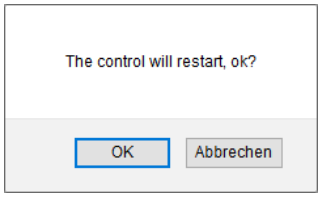
The settings can be exported using the "Export" button. When the button is pressed, a pop-up window appears in the web browser. The file path in which the configuration file is to be stored can then be defined. The file has the default name config.gifas. Of course the name can be changed.

All settings, descriptions and login data are exported.

- Password
- Setting operation mode with designation
- Setting scenes with designation
- Setting running light with designation
- Designation of Control unit
- Failure rate detection
- Priority of external flashing contact
- Language

7.8.7 Import device settings

The exported settings can also be imported back into the controller. The first step is to click on "Browse". Afterwards the already exported file can be selected by using the Explorer. Now you only have to click on “Import”. The final step is confirmed by clicking OK. The controller has now loaded all settings of the config file



8 Maintenance and debugging

8.1 Inspection and maintenance plan

Work to bo carried out	Time period/frequency
Functional test	according to country-specific regulations/as required
Cleaning housing	Depending level of contamination

8.2 Description of inspection and maintenance work

All control functions must be maintained in accordance with the respective regulations, standards and rules of the respective country and, if necessary, revised by professionally trained staff.

8.3 Troubleshooting / troubleshooting measures

Fault/error message	Possible cause(s)	Remedy
Short-circuit channel 1-4	– short-circuit system cable – Faulty lamp	Check installation for short circuit. Check lamps for visible damage.
Temperature rise	– Ambient temperature too high	Allow controller to cool down. Check ambient temperature if necessary, and take measures to reduce temperature.
Overvoltage	– power supply > 48VDC	Power supply - check output voltage.
Failure rates exceeded	– Too many lamps are failing. – Interruption of the supply line to the lamps.	Check lamps for functionality by visually inspecting them. Remove interruption in lamp string.
Hardware and/or software error	– Defect of a component on the circuit board – Software error triggered by an undefined state	Restart the controller in the event of a software error. If the error is still pending, the controller must be sent in.

Fault/error message	Possible cause(s)	Remedy
Network interruption	– Network cable disconnected	Check if all cable connections-/plug connections are correct.
No login to the web interface possible	– Forgotten password – Incorrect password – IP address not correct	Reset control to factory status by means of the radio programming unit. The password is reset to the factory setting.
Certain function/settings are not possible in the web interface	– Update web browser or change browser if necessary.	Since Microsoft no longer supports Internet Explorer, the web interface may be impaired.

Hint

The 4-channel control may only be replaced by the manufacturer or by a service technician appointed by the manufacturer or by a comparable qualified person.

9 Declaration of conformity

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KONFORMITÄTSERKLÄRUNG / DECLARATION OF CONFORMITY / DECLARATION DE CONFORMITE

Wir / We / Nous: **GIFAS-ELECTRIC GmbH, CH-9424 Rheineck**

erklären in alleiniger Verantwortung, dass das nachfolgend aufgeführte Produkt aufgrund seiner Bestückung und Bauart in der von uns in Verkehr gebrachten Ausführung den einschlägigen Sicherheits- und Gesundheitsanforderungen der EU-Richtlinie entspricht. Bei einer nicht mit uns abgestimmten Änderung des Produkts verliert diese Erklärung ihre Gültigkeit.

declare under our sole responsibility that the product about the equipment and construction as we put the execution into circulation of the appropriate security and health requested, correspond with the European guideline. Any change on the product without our agreement has the consequence, that the declaration will lose its validity.

déclarons sous notre seule responsabilité que le produit sousmentionné correspond aux exigences de sécurité et de santé des lignes d'application CE, en raison de son équipement et son genre de construction. Cette déclaration perd sa validité lors de modification du produit sans notre accord.

Produkt:	4-Kanalsteuerung 10A
Product:	4 channel control unit 10A
Produit:	Unité de commande 4-canaux
Typ/Type/Type:	860594
EU-Richtlinien:	Niederspannungsrichtlinie 2014/35/EU EMV Richtlinie 2014/30/EU Funkanlagen R&TTE 2014/53/EU Ecodesign 2009/125/EU RoHS-Richtlinie 2011/65/EU WEEE-Richtlinie 2012/19/EU
EC-Guidelines:	Low-Voltage Directive (LVD) 2014/35/EU EMC Guideline 2014/30/EU Radio Equipment Directive R&TTE 2014/53/EU Ecodesign 2009/125/EU RoHS-Directive 2011/65/EU WEEE-Directive 2012/19/EU
Directives de la CE:	Directive Basse Tension 2014/35/UE Directive CEM 2014/30/UE Directive des équipements Radio R&TTE 2014/53/EU Eco-design 2009/125/EU RoHS-Directive 2011/65/EU WEEE-Directive 2012/19/EU

10 Service

10.1 Service addresses

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10.2 Imprint

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