

DRAFT VERSION

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# Signaalklok



## User manual

SIG-1.1-A

SIG-2.2-A

Software version 1.1s

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## First use

Thank you for choosing the Signaalklok module from De Graaf Elektronica. We hope you will enjoy using our device. If anything is still not clear after reading the manual, please contact us.

The first step for commissioning your device is to connect it correctly. Connect the module to the network and follow the connection diagram in Appendix 1 to correctly connect the signalling devices (buzzers/bells). Next, connect the power supply. The device will now start, after which you can configure the module via the internet. To do this, follow the steps in the next section.

## Obtain the IP address

When the Signaalklok is connected to a network and powered, the module will request its own IP address from your router. This IP address determines the link through which you can reach the device.

When the module has started, it will send an e-mail to the e-mail address used when placing the order (unless otherwise specified). This e-mail contains the name and IP address of the module. You can access the web interface by navigating to <http://your-ip-address/>. You can set whether you want to continue receiving e-mails in the future. Please refer to the section "E-mail settings".

If you do not receive an e-mail with the IP address, after checking your spam box, you can look for the module using its MAC address (bottom of the lid). To do so, download "Advanced IP Scanner" from the following link: <https://www.advanced-ip-scanner.com/nl/>.

Install the program or run it directly without installing and click "Scan". After a moment of patience, you can see the MAC address and the corresponding IP address appear.

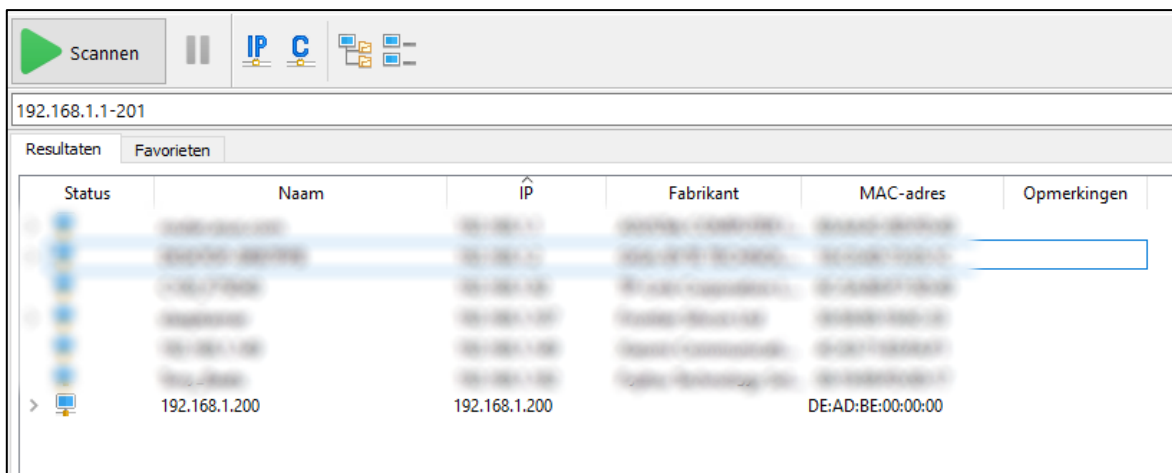


Figure 1: A screenshot of a device found using "Advanced IP Scanner"  
Its IP address is 192.168.1.200

## Basic operation

Once the IP address is obtained, you can navigate your browser to the web page <http://uw-ip-adres/>. On first use, you will need to log in. See section "Logging in". After loading, you will be on the module's dashboard (Figure 2: Dashboard). Here you can view live status of inputs/outputs and control outputs. You can also see which time schedule is currently active. If you click on the button for one of the outputs, the default bell rhythm will start playing on the signal generators connected to this output.

The names of inputs/outputs are customisable in the settings menu, there is also an option to hide specific inputs/outputs from the dashboard.

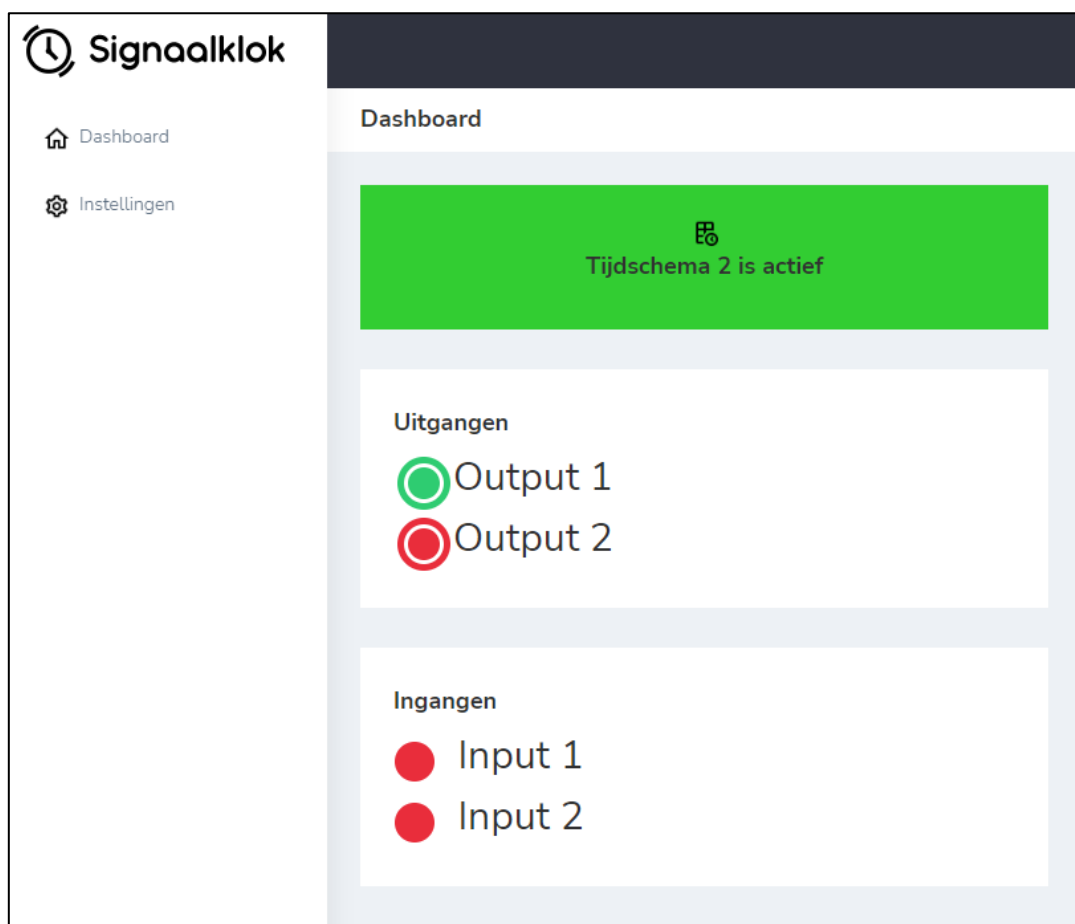


Figure 2: Dashboard

## Settings

### Logging in

When you access the web pages, the system asks for login by default. This is to prevent anyone from making changes to the settings or being able to operate the signal generators without permission. To log in, click the "Log in" button. Then enter your chosen credentials. By default, the user name is "admin" and the password "admin".



It is recommended to change the login details. Please refer to the chapter "User settings".

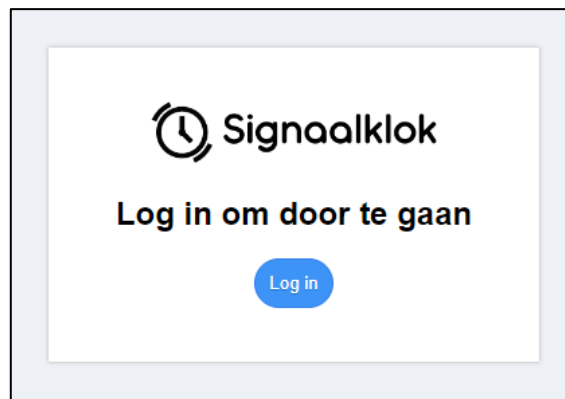


Figure 3: click "Log in" to continue

You can set, under the "User" heading, whether the entire module or parts of the module should be protected by a password.

### In-/outputs

On the "In-/Output" page, you can choose the what the name of an input or output should be; This name can be 1 to 15 characters. By unchecking the box next to the chosen name, the input/output disappears from the dashboard. However, these inputs/outputs remain active for the rest of the system (e.g. for use in a time schedule).

Under the heading "Input connections", you can choose what the input(s) on the module should do. You can connect them directly to one of the outputs or use them only for the e-mail function.

If you connect an input to an output, the module plays the standard tone as soon as the input is activated.

If you select "NONE", the Signaalklok will only send e-mails when the input is activated. Provided this is set under the e-mail settings.

Figure 4: In-/output settings

## Timetables

### Activate a schedule

Only one schedule can be active. To choose which schedule, go to settings → Time schedules. You can then select a time schedule of your choice by clicking on the radio button for the desired time schedule. Do you click on the button "Disable time schedule"? Then all time schedules are disabled. You can see which schedule is active by looking at the green radio button (in the example shown here, this is schedule 2).

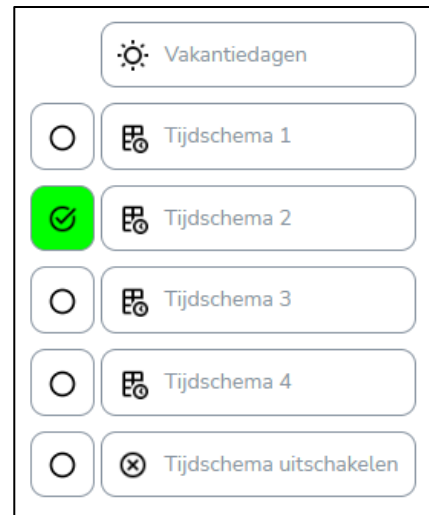


Figure 5: Schedule 2 is active

### Set holidays

Holidays and days off can be managed by navigating to settings → Schedules via the menu. Next, select "Holidays". Now you are in the menu where you can add or remove holidays.

The "Enable holidays" checkbox determines whether the module takes into account the dates you specify. Do you uncheck this box? Then the signal generators continue to go off during holiday periods according to the schedule.

By clicking on add holiday, you can add a new period. Select the start and end dates by pressing the calendar icons or enter them manually. You can delete the holiday by clicking the "Delete" button.



Do you want to enter a period of just one day? Then enter the same for the start date and end date.

**Remember to click "Save" to process the changes.**

### Vakanties aanpassen

Vakanties inschakelen

Start	t/m	Eind	Wis
13-10-2022 <input type="text"/>		13-10-2022 <input type="text"/>	Wis
27-10-2022 <input type="text"/>		13-11-2022 <input type="text"/>	Wis

Figure 6: Holidays



### Edit schedules

In total, there are four time schedules with up to 50 switching times per schedule. These can all be managed separately. To do this, navigate in the menu to settings → Time schedules and click on the name of the time schedule you want to manage. You can now modify the time schedule.

By clicking on the "Delete" and "Add time" buttons, you can manage how many switching times are present in the schedule. You can choose the signal time by selecting a time for each row of the table in the form hour : minute. Then select which outputs are to be switched on (only for modules with more than one output) and choose which bell rhythm you want to sound. When you click the "Add time" button, a new row appears in the table with the standard bell rhythm of the module.

Finally, select the checkboxes for the days you want to activate the signal.

**Remember to click "Save" to process the changes.**



Do you want to set this schedule as an active time schedule? Then don't forget to check whether it is actually activated (see chapter "Activate a schedule").

**Tijdschema aanpassen**

Tijd	Uitgangen	Ritme	Ma	Di	Wo	Do	Vr	Za	Zo	Wis
12 : 00	1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wis
17 : 20	<input checked="" type="checkbox"/> <input type="checkbox"/>	16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wis
17 : 40	1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/>	8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wis
17 : 45	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	11	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wis
17 : 50	1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wis
17 : 55	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wis

Tijd toevoegen    Opslaan

Figure 7: Edit a time schedule

## Ringtones

### Standard ringtone

The default ringtone is the ringtone that plays when you operate the signal generator using the dashboard or one of the inputs. It is also the default ringtone selected when you add new times to a time schedule.

Using the menu to go to settings → Bell rhythms takes you to the settings page. On the left side, click the radio button to set the desired ringtones as default.

You can also listen to the ring rhythms before applying them (see chapter "Listen to ringtones").

### Listen to ringtones

If you want to hear a ringtone, go to settings → Bell rhythms in the menu. Then click on the name of the desired ringtone. You will now see a table appearing with a description of the rhythm. Click the "Play" button to play it on your device.

➡ The ringtone will be played as a fixed tone (440Hz) through your device's speakers. So turn on your sound.

### Edit ringtone

The system has 16 different ringtones. Ringtones 1 to 8 are fixed, but you can adjust the other 8 yourself. If you want to change a ringtone, go to settings → Bell rhythms in the menu. Then click on the name of the desired ringtone. A table will appear with a description of the ringtone.

The ringtone consists of the actions "Bell on" and "wait" (= bell off). You can add up to 24 actions with the "Add action" button; you can also delete the action with the "Delete action" button. Under "Repeat" you can specify how often the rhythm should repeat itself.

➡ You can only work with integers here. So it is not possible to perform an action 1.5 seconds.

In the example in Figure 9, the signal generator turns on for 3 seconds and then off for 3 seconds. This repeats 4 times. You can listen to the ringtone you created at any time by clicking "Play". **Remember to click "Save" to process the changes.**

➡ The ringtone will be played as a fixed tone (440Hz) through your device's speakers. So turn on your sound.



Figure 8: Ringtones overview



Figure 9: Edit ringtone



## Network

You can change the module's IP address via the network settings (menu → settings → network).

Furthermore, it is possible to choose a port for HTTP control. Press the info sign next to this item for more information (see figure 10).

You can set the module to a fixed address in your network by disabling DHCP (= automatic configuration). In this case, specify the desired IP address, gateway (usually the IP address of your router), subnet (usually 255.255.255.0) and a DNS server (e.g. 8.8.8.8).



Check your router's settings for more information -or- have a system administrator do it for you.

**Don't forget to click "Apply and restart".** Have you changed the DHCP settings? If so, your module may have a new IP address. See chapter "Obtain the IP address" for more information.

## Time

The time settings are relatively self-explanatory. You can access them via settings → Time. Enter your time zone, select your DST (Daylight Saving Time) location and enter a different NTP server if necessary.

Should it not be possible to contact the specified NTP server, then the time is retrieved via the pre-programmed servers "time.google.com" or "time.windows.com".

Should the time still not be retrieved, check that port 123 is freely accessible to the module.

**Don't forget to click "Apply and restart".**

Figure 10: Network settings

Figuur 11: Tijd instellingen

## User settings

Via settings → User, you can set the language, e-mail and security options. You can also find the software version and MAC address (hardware address) of the module here.

### Language

Under the heading "Language", select a language, then click "Apply". Refresh the page to see the result. You can choose between Dutch, English and German.

### Security

Under the heading "Security", you can choose whether a username and password are required for operation and setup. By unchecking the boxes, you can choose which pages should be secured. Click "Apply" to make the changes.



It is recommended that you at least secure settings to prevent employees/students from changing settings.

### Change user account

If you enter a new username and password under the "Edit user" heading and then click "Apply", you have successfully changed the username and password. You will be automatically logged out and must log in again with the new data.



**Note: Enter a new user name and a new password before clicking "Apply".**

### E-mail settings

Under the heading "E-mail settings", choose whether you want to receive an e-mail when booting up the device and/or using the input. The start-up mail indicates the IP address of the module and is sent as soon as the module restarts.

Figure 12: E-mail settings

Remember to enter a correct e-mail address and press "Apply".

### Module info / name

At module info, you can see the current software version and MAC address. Furthermore, it is possible to choose a name for your Signaalklok (max. 24 characters). This name can be seen on the dashboard and in e-mails.

## Software reset

### Partial reset

Partial reset restores network settings, username and password.

#### Method:

Remove the power source and the cover from the module. You will now see a button labelled "RESET" roughly in the centre of the PCB. Press this button and while holding the button down, reconnect the power source. Wait 3 seconds and release the little button again. The Signaalklok will now retrieve an IP via DHCP and you can log in again with the default password.

### Full reset

The full reset resets all settings except ringtones, schedules and holidays.

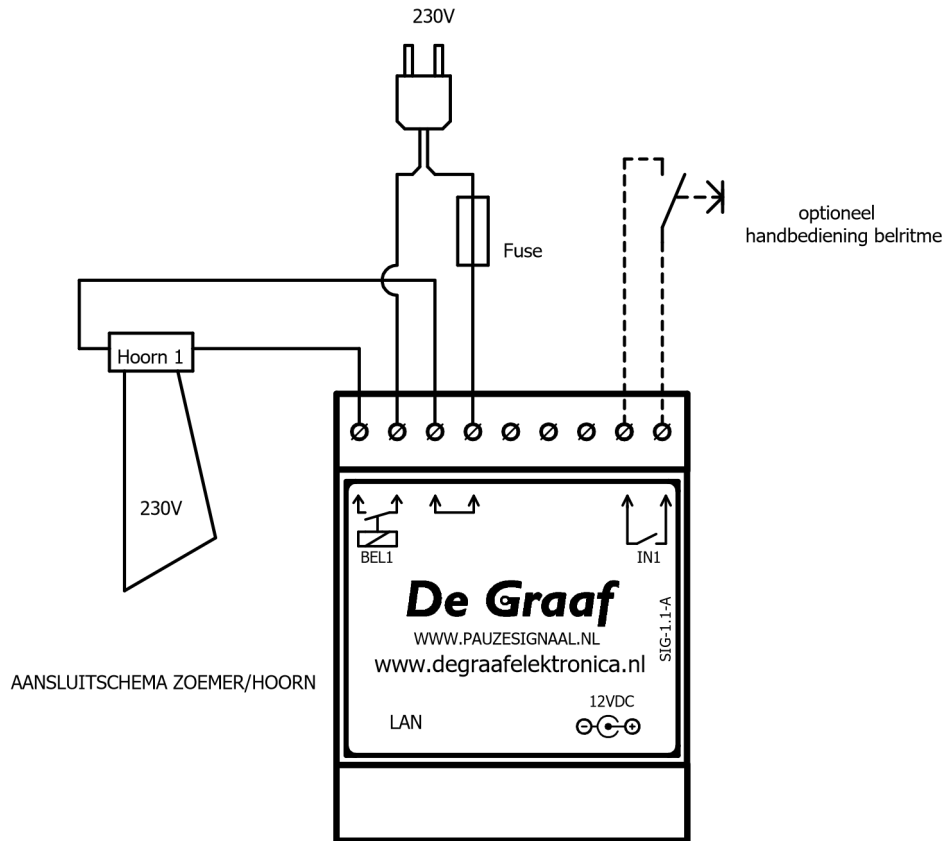
#### Method:

Follow the steps for a partial reset, but now press and hold the button for 15 instead of 3 seconds.

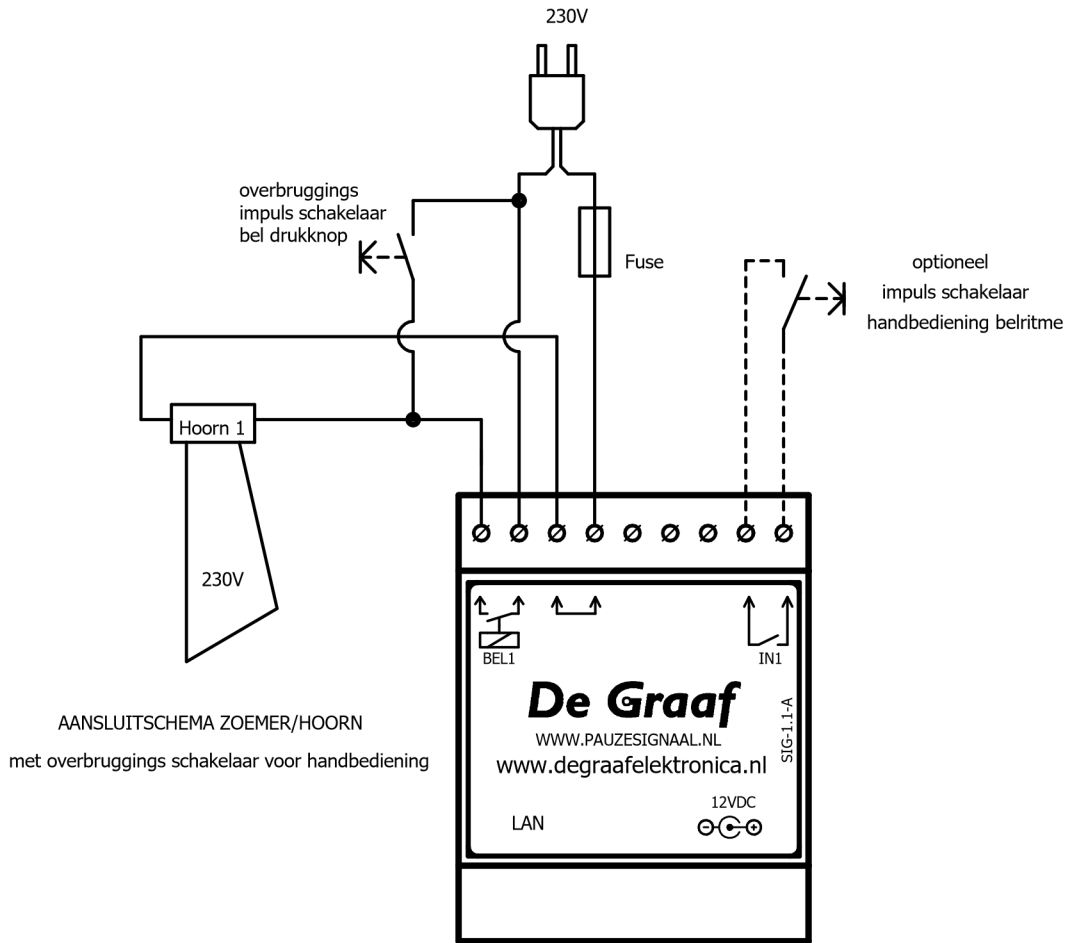
## Appendix 1: wiring diagrams

SIG-1.1-A

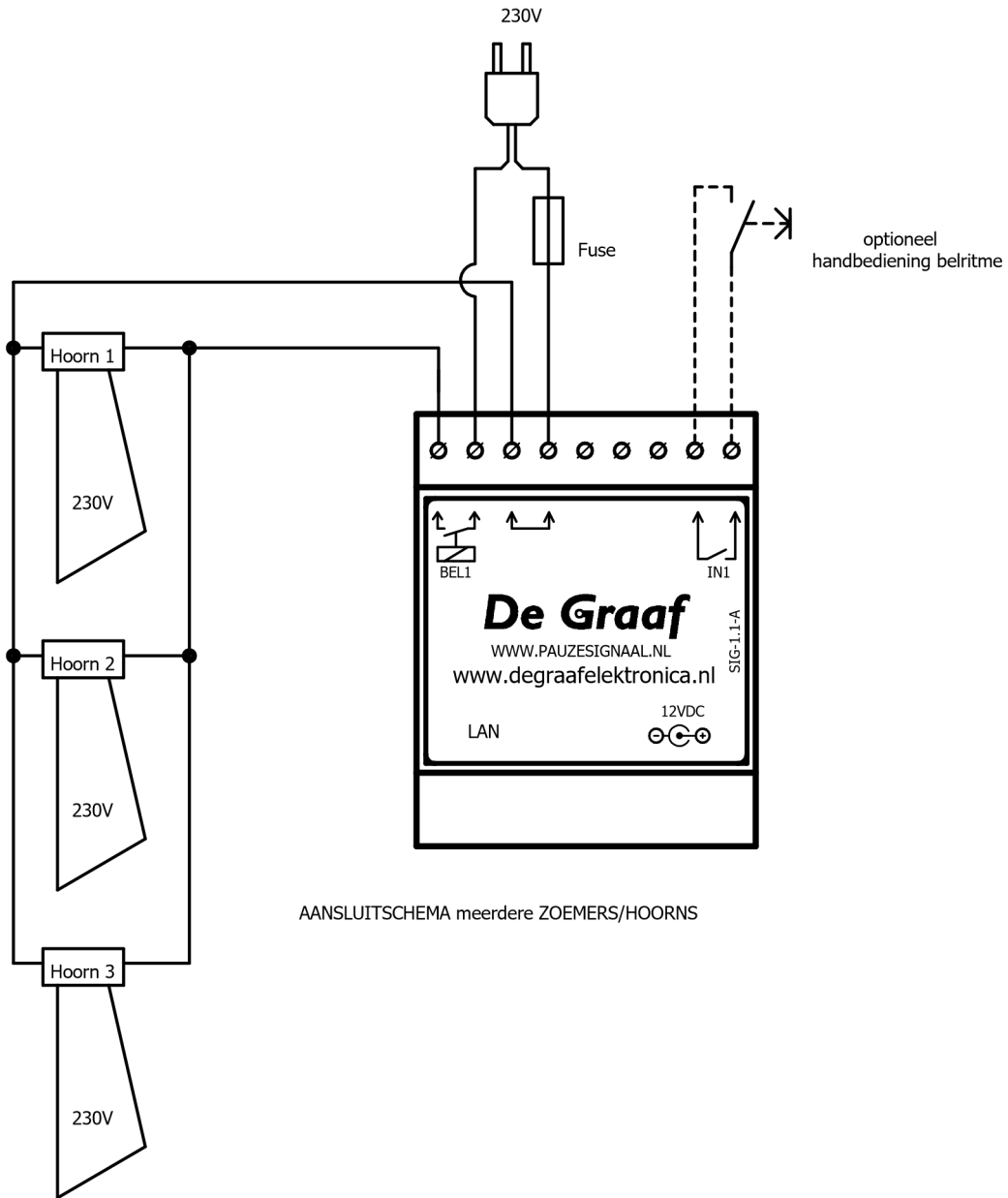
*Single signal generator*



Single signal generator with manual override

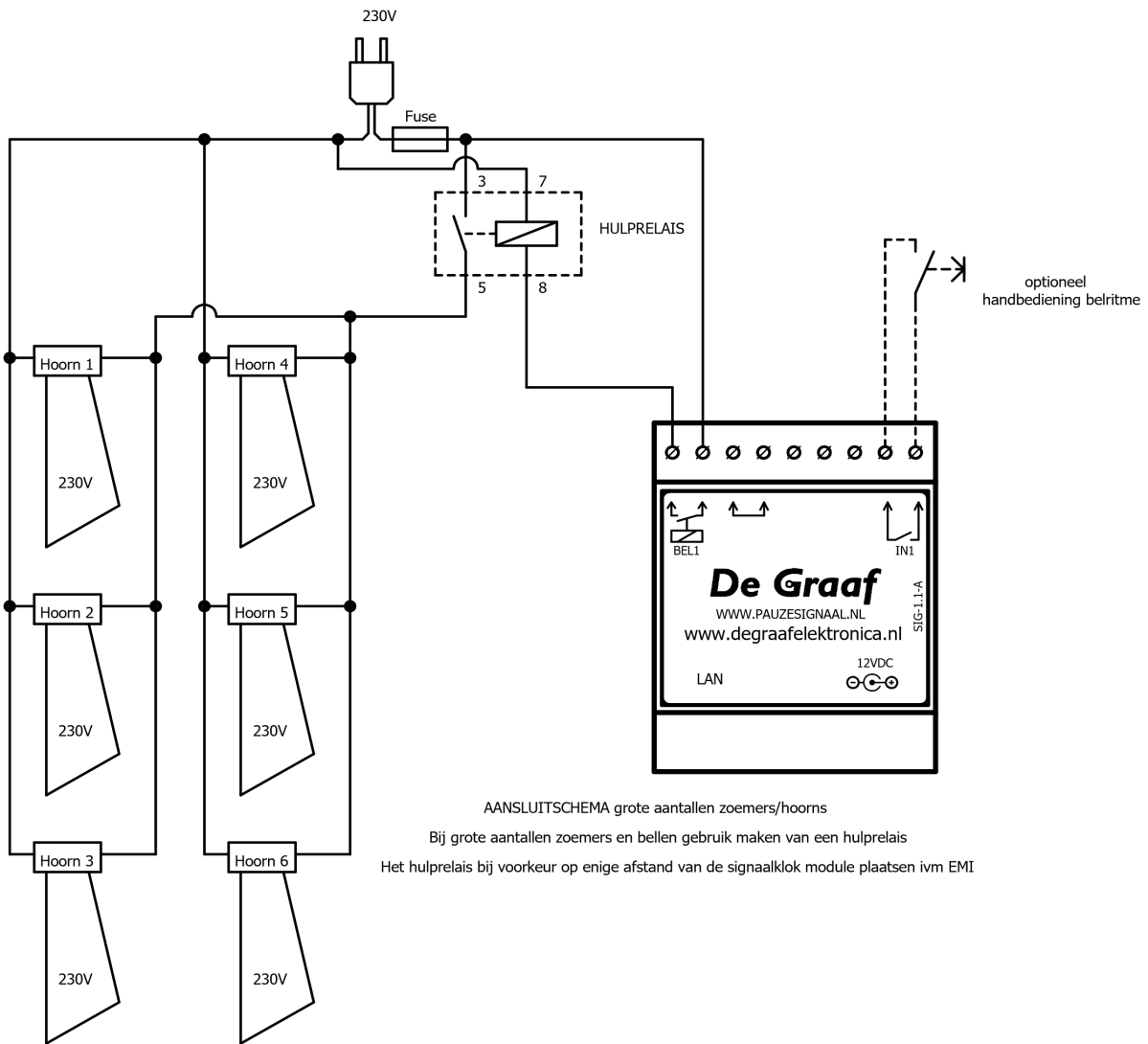


Several signal generators (max. 230V/5A. Otherwise, use an auxiliary relay as in the next connection diagram)





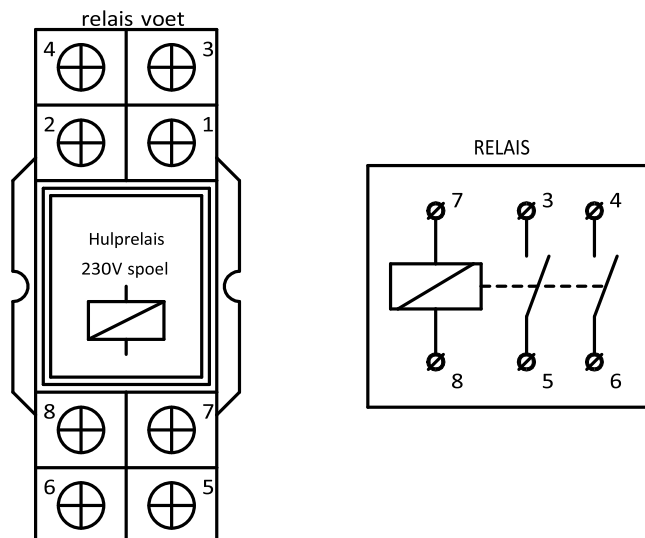
*Several signal generators with auxiliary relay*



AANSLUITSCHEMA grote aantallen zoemers/hoorns

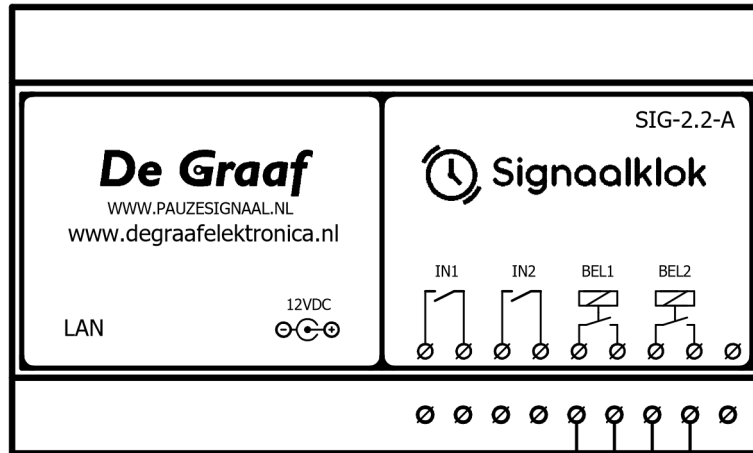
Bij grote aantallen zoemers en bellen gebruik maken van een hulprelais  
Het hulprelais bij voorkeur op enige afstand van de signaalklok module plaatsen ivm EMI

*Auxiliary relay*

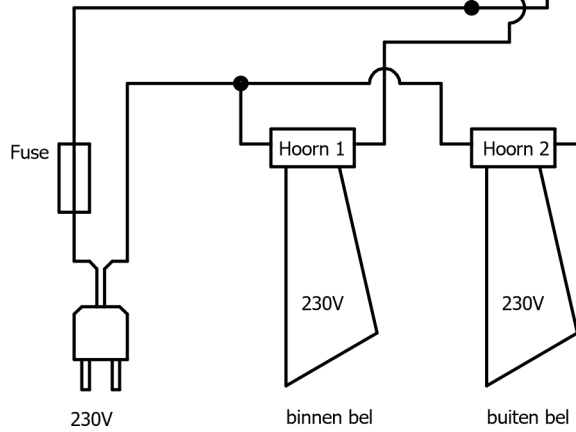


SIG-2.2-A

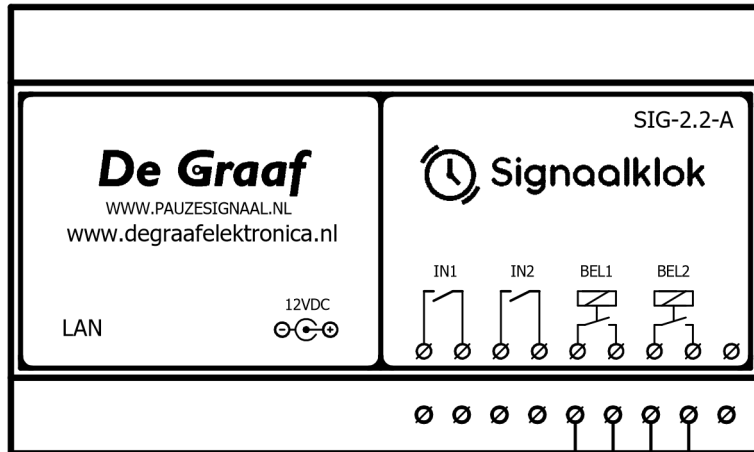
Single signal generator (1 per output)



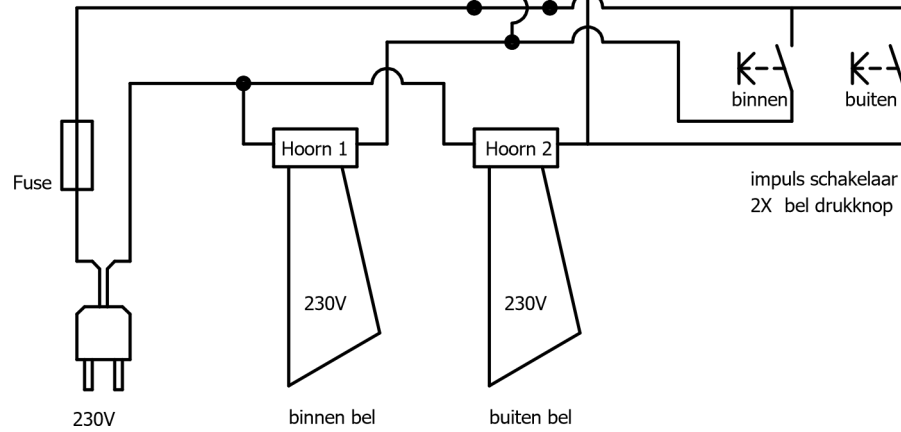
op de ingangen kunnen optioneel impuls schakelaars worden aangesloten om het ingestelde belritme handmatig te laten klinken



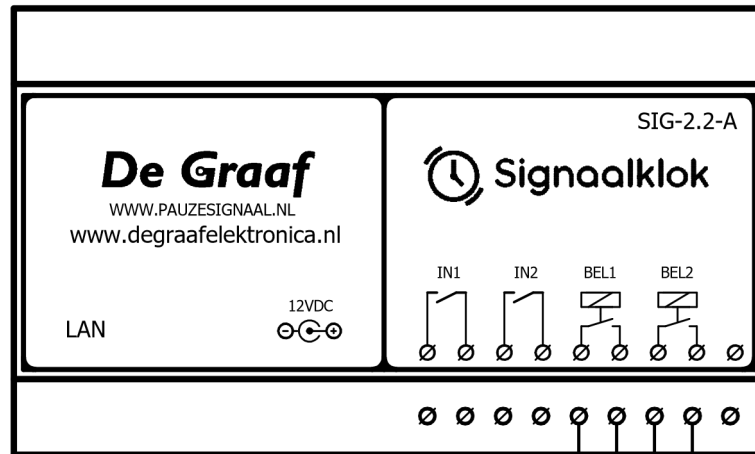
Single signal generator (1 per output) with manual override



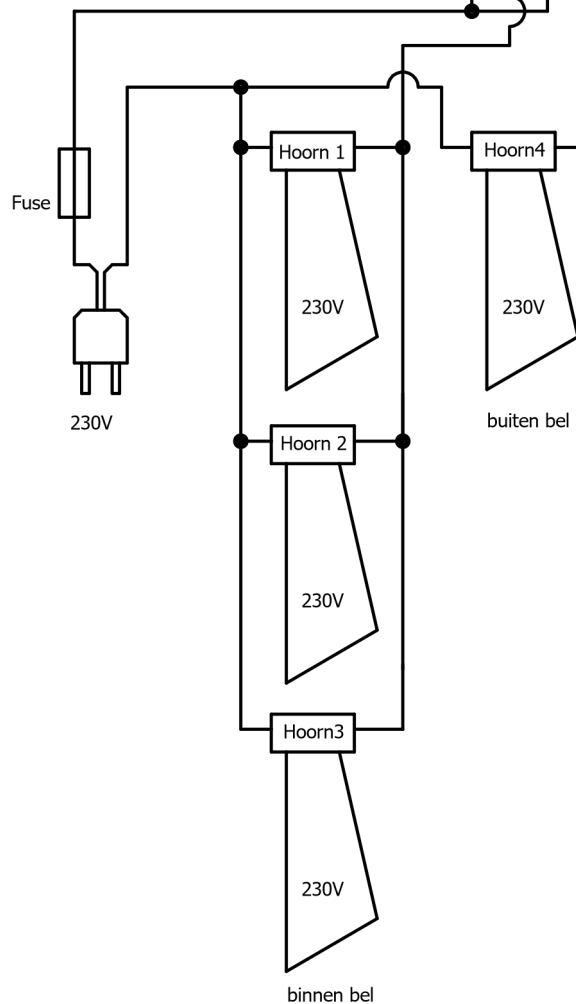
op de ingangen kunnen optioneel impuls schakelaars worden aangesloten om het ingestelde belritme handmatig te laten klinken



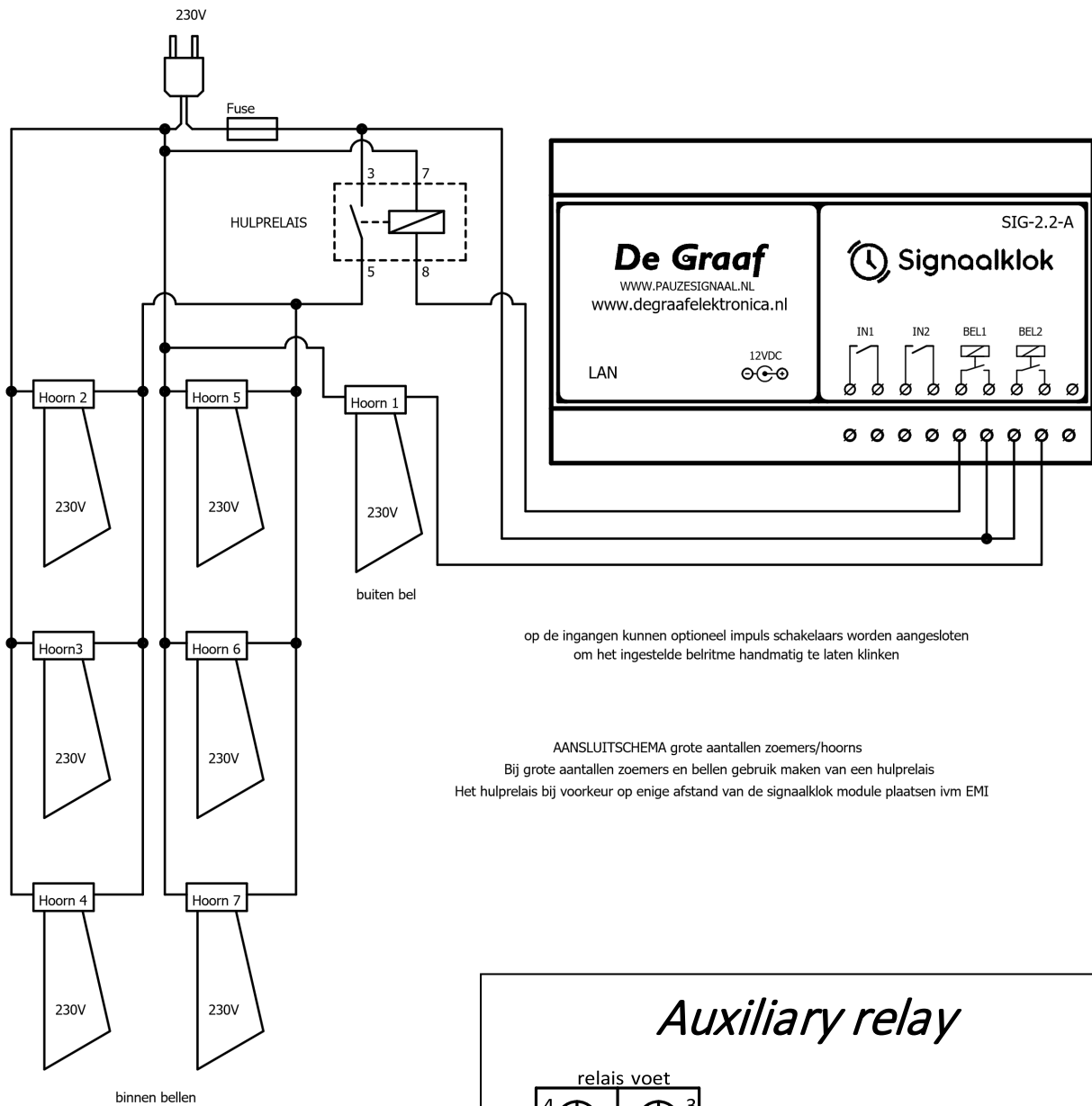
Several signal generators (max. 230V/8 Ampère per output. Otherwise, use an auxiliary relay as in the next connection diagram)



op de ingangen kunnen optioneel impuls schakelaars worden aangesloten om het ingestelde belritme handmatig te laten klinken



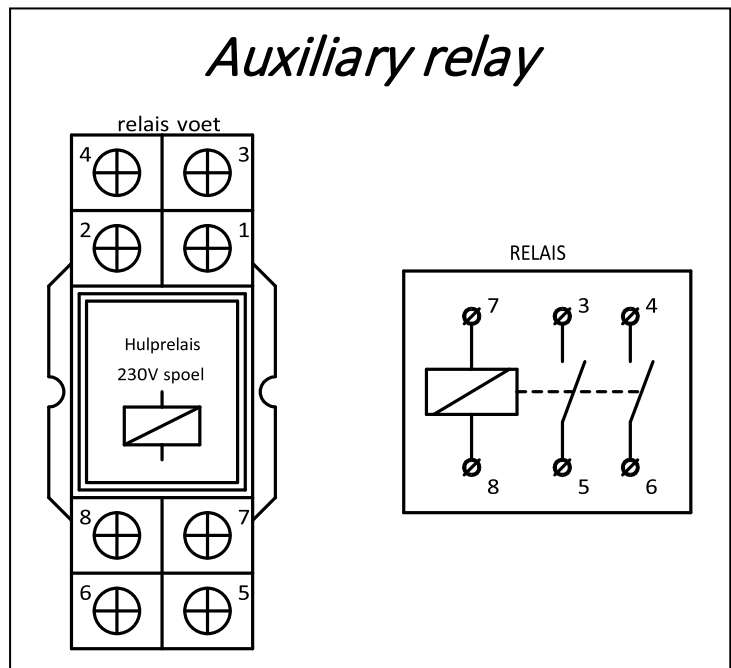
*Several signal generators with auxiliary relay*



op de ingangen kunnen optioneel impuls schakelaars worden aangesloten om het ingestelde belritme handmatig te laten klinken

AANSLUITSCHEMA grote aantallen zoemers/hoorns  
 Bij grote aantallen zoemers en bellen gebruik maken van een hulprelais  
 Het hulprelais bij voorkeur op enige afstand van de signaalklok module plaatsen ivm EMI

*Auxiliary relay*

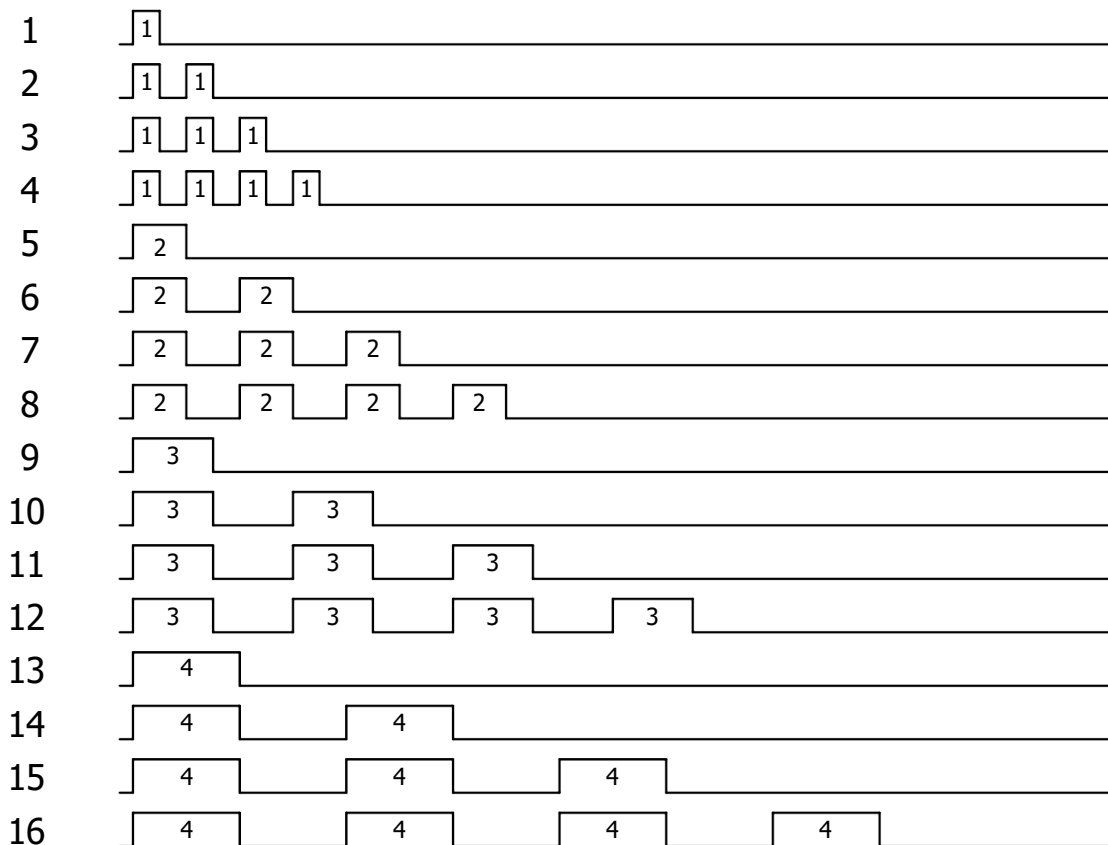


## Appendix 2: ringtones

## Belritme schema Signaalklok

Belritme 9 t/m 16 zijn vrij aanpasbaar in de software

Ritme:



Tijd in seconden



## Appendix 3: hardware specifications

### SIG-1.1-A

- 1 relay output max 230V/5A per output (ohmic load).
- 1 Opto input to be controlled with a potential-free NO contact.
- The module is fully pluggable.
- RJ45 network connection 10/100/1000 Mbps
- Built in Webserver
- DHCP or fixed IP.
- Supply voltage 12VDC (DC plug 5.5x2.1 mm)
- Energy usage max. 100 mA (use a stable 12V adapter/power supply, minimum 1.5A)
- Module dimensions: 90 x 53 x 58 mm

**CAUTION: do not switch an excessive amount of bells/horns or buzzers simultaneously on 1 output. In such cases, use an auxiliary relay.**

### SIG-2.2-A

- 2 relay output max 230V/8A per output (ohmic load).
- 2 Opto inputs to be controlled with a potential-free NO contact.
- The module is fully pluggable.
- RJ45 network connection 10/100/1000 Mbps
- Built in Webserver
- DHCP or fixed IP.
- Supply voltage 12VDC (DC plug 5.5x2.1 mm)
- Energy usage max. 150 mA (use a stable 12V adapter/power supply, minimum 1.5A)
- Module dimensions: 90 x 107 x 58 mm

**CAUTION: do not switch an excessive amount of bells/horns or buzzers simultaneously on 1 output. In such cases, use an auxiliary relay.**

### Software:

- 4 x 50 programmable times (4 schedules with each 50 switching times)
- 16 pre-programmed ringtones, 8 of which are freely customisable.
- Holiday start/end date programmable (no pause signals)
- NTP time server synchronisation via 3 built-in DNS time server addresses ("europe.pool.ntp.org", "time.google.com" and "time.windows.com"), the first of which is customisable.

## Appendix 4: software copyright information



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