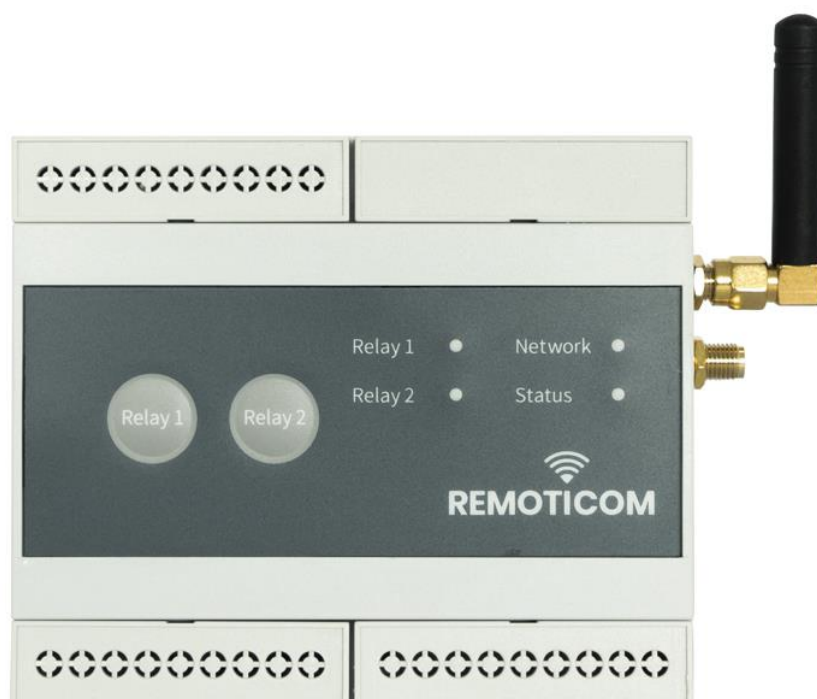


DYNA100 Relay Controller Installation Guide



The information contained in this document is subject to change with or without notice. For this reason, always make sure you are using the latest version available at support.remoticom.com. If you have any additional questions, please contact your point of contact.

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1. Revision history

Version	Description	Editor	Date
0.1	Initial draft	P. Poncelet	2023-04-21
1.0	Initial release	P. Poncelet	2023-04-25

2. General overview

The DYNA100 Relay Controller is a DIN rail mountable 230V powered switching system that can be managed via API over NB-IoT/2G/LTE-M networks and features two controllable Relay outputs. The switch-on and switch-off times of Relay 1 and Relay 2 can be controlled separately. In addition, for Relay 1 it is possible to use the astronomical table. The Relay controller remembers the local time in case of power failure thanks to an internal "real-time" clock with battery backup. The system automatically connects to GPS to obtain date and time(zone) information.

Relay 1 switches the public lighting by default. Switching on and off is handled via API commands based on the measured light level (via external sensors).

Relay 2 switches the public night lighting or "special event lights", etc. It can be turned on or off regardless of the astronomical table times. In addition, relay 2 can be set to a fixed on or off time.

The Relay Controller is equipped with local control by means of push buttons on a foil switch and with LED indicators for reading the current status. The Relay state can be manually switched by pressing the button of each relay for 5 seconds.

For more information, visit: <https://remoticom.com/en/product/dyna100/>

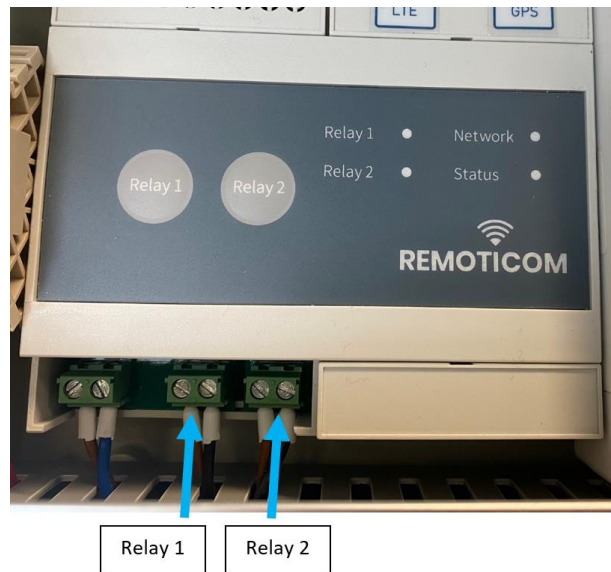
3. Device specifications

3.1 Communication

- The DYNA100 Relay Controller connects to NB-IoT, LTE-CatM and 2G networks.
- The DYNA100 Relay Controller can be configured, controlled and monitored using REST API.

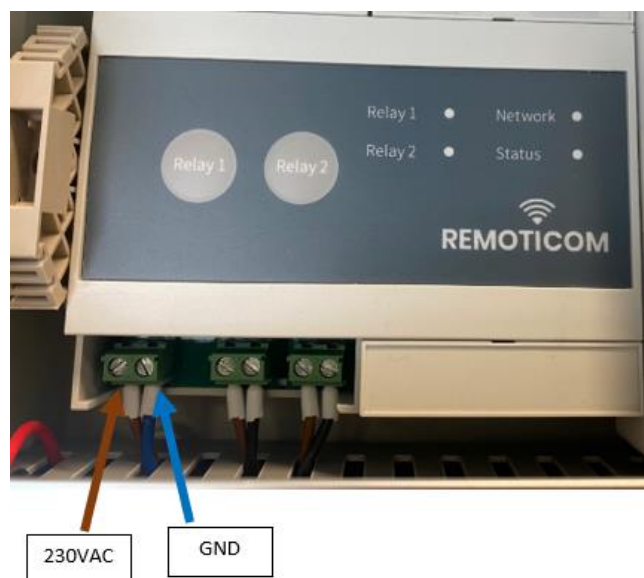
3.2 Relay Interface

- The Relay Controller has 2 Relay outputs.
- Both relays are single-pole-single-throw (SPST), normal open (NO) relays.
- Both relays operate on max. 250VAC, 5A



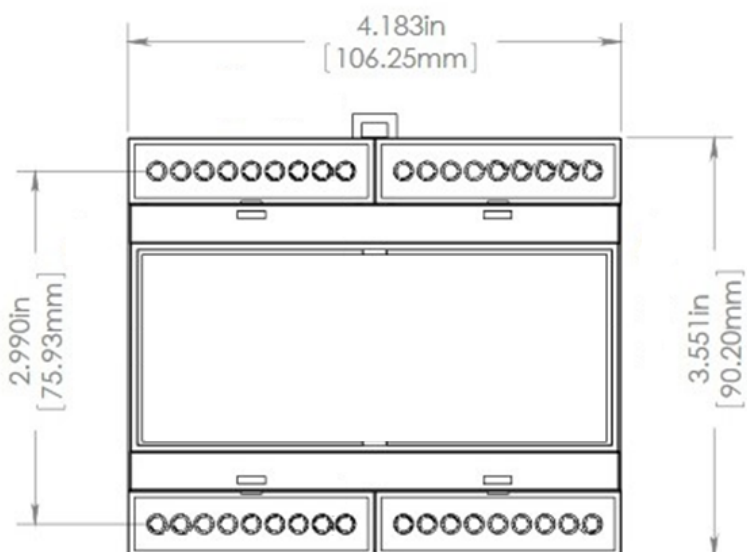
3.3 Power supply

- The device is powered via 230VAC.
- The connection is as following:



3.4 Others

- The device is equipped with an internal backup battery to keep track of the time in case the mains power is disconnected.
- Product dimensions are:



4. Installation

The Dyna100 relay controller is DIN-rail mountable by using the foreseen clips at its rear-side.



4.1 Safety Instructions

Information for your own safety

This manual does not contain all of the safety measures for operation of the equipment because special operating conditions and local code requirements or regulations may necessitate further measures. However, it does contain information which must be read for your personal safety and to avoid material damage. This information is highlighted by a warning triangle and is represented as follows, depending on the degree of potential danger.

Note! This means that failure to observe the instruction can result in death, serious injury or considerable material damage.

Note! This means hazard of electric shock and failure to take the necessary safety precautions will result in death, serious injury or considerable material damage.

Operation of the equipment described in this manual may only be performed by qualified personnel. Qualified personnel in this manual means a person who is authorized to commission, start up, ground and label devices, systems and circuits according to Safety and Regulatory standards.

The equipment may only be used for the application specified in the datasheet and the user manual and only relate to devices and components recommended and approved by REMOTICOM.

- ✓ Use only insulating tools.
- ✓ Do not connect while circuit is live (hot).
- ✓ Place the DYNA100 Relay Controller only in dry surroundings.
- ✓ Do not mount the device in an explosive area or expose the meter to dust, mildew and insects.
- ✓ Make sure the used wires are suitable for the maximum current of this device.
- ✓ Make sure the AC wires are connected correctly before activating the current/voltage to the meter.
- ✓ Do not connect the meter to a 3 phase - 400VAC - network.
- ✓ Do not touch the meter connecting clamps directly with your bare hands, with metal, blank wire or other material as you may get an electrical shock.
- ✓ Make sure the protection covers are placed after installation.
- ✓ Installation, maintenance and reparation should only be done by qualified personnel.
- ✓ Never break the seals and open the rear cover as this might influence the functionality of the device and will avoid any warranty.
- ✓ Do not drop or allow physical impact to the meter as there are high precision components inside that may break.

5. API documentation

The DYNA100 Relay Controller API uses Jason Web Tokens and requires an authorization token in order to securely communicate between device and backend. Please reach out to support@remoticom.com to request an API token in case this was not provided already.

Enable / Disable relay

The state of each relay can be manually changed by this command.

Url /commands

Method POST

Response status 201

Headers

- Authorization: [token]
- ContentType: application/json

Choices

- Enabled: 1
- Disabled: 0

Enable relay 1

```
{
  "devices":["003a0031594d511720383539"],
  "commands":{
    "dyna_b.relay_1_enabled_no_restrictions":"1"
  }
}
```

Disable relay 2

```
{
  "devices":["003a0031594d511720383539"],
  "commands":{
    "dyna_b.relay_2_enabled":"0"
  }
}
```

Note! If a sunrise or sunset window is set for Relay 2, a different command needs to be used to control relay 1.

Enable relay 1 when sunset / sunrise window is set

```
{
  "devices":["003a0031594d511720383539"],
  "commands":{
    "dyna_b.relay_1_enabled":"1"
  }
}
```

Relay 1: Sunrise / sunset window

Relay 1 is switched on/off depending on the sunrise/sunset and the configured window surrounding these times. The sunrise and sunset windows can be set using 4 commands.

Every command can be set with a value between 0 and 99 this is the time in minutes before or after sunrise/sunset, with 0 as the minimal value and 99 as the maximal.

The state of Relay 1 will be controlled by the actual sunrise/sunset time of the location of installation (based on the time the device received from the network and/or GPS) and the configured window times.

In the example here below, relay 1 will be switched on 15min before sunrise and switched off 99min after sunrise. In the evening, relay 1 will be switched on 15min before sunset and switched off 99min after sunset.

Url /commands

Method POST

Response status 201

Headers

- Authorization: [token]
- ContentType: application/json

Set sunrise and sunset

```
{
  "devices":["003a0031594d511720383539"],
  "commands":{
    "dyna_b.sunrise_window_start":"15",
    "dyna_b.sunrise_window_stop":"99",
    "dyna_b.sunset_window_start":"15",
    "dyna_b.sunset_window_start":"99",
  }
}
```

Relay 2: Scheduling

Whilst Relay 1 can be used to switch on/off based on Astro time, relay 2 can be used to switch on/off by schedule. For the system to enable scheduling, the schedule needs to be enabled by using the relay_2_schedule command. Relay 2 can be scheduled to switch between a start and stop time. These times are set in minutes since midnight. For ex. 24:00 → 0, 00:01 → 1, 01:00 → 60, ...

Url /commands

Method POST

Response status 201

Headers

- Authorization: [token]
- ContentType: application/json

Set switch time and enable schedule

```
{
  "devices":["003a0031594d511720383539"],
  "commands":{
    "dyna_b.relay_2_schedule":"1",
    "dyna_b.relay_2_switch_time_start":"0",
    "dyna_b.relay_2_switch_time_stop":"60"
  }
}
```

Disable schedule

```
{
  "devices":["003a0031594d511720383539"],
  "commands":{
    "dyna_b.relay_2_schedule":"0",
  }
}
```

Set overrule settings

The system can also overrule Relay 1 this can be enabled for both the start and the stop time.

- Enabled: 1
- Disabled: 0

```
{
  "devices":["003a0031594d511720383539"],
  "commands":{
    "dyna_b.relay_1_switch_time_start_overrule":"1",
    "dyna_b.relay_1_switch_time_stop_overrule":"1"
  }
}
```

Set enable memorial

Enable auto switch ON at the Netherlands National Memorial Day on the 4th of May (20h00 – 20h02) The relays will switch off again after 2 minutes.

Url /commands

Method POST

Response status 201

Headers

- Authorization: [token]
- ContentType: application/json

Choices

- Enabled: 1
- Disabled: 0

Enable memorial

```
{
  "devices":["003a0031594d511720383539"],
  "commands":{
    "dyna_b.enable_memorial":"1",
  }
}
```