

M-LED-p: Ampio lighting bus controller

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Technical data

Supply voltage
11 – 16V DC

Current consumption
25mA

Number of controlled OWA light points
up to 16 nodes

Number of ground detecting inputs
4

1-Wire
up to 6 sensors

Dimensions

Width
41mm

Height
44mm

Depth
16.5mm

Environment

Temperature
-40 – 50°C

Humidity
≤95%RH, non-condensing

The image above is for illustration purpose only. The actual module may vary from the one presented here.

General features

Module M-LED-p is a component of the Ampio system. Required voltage to power the module is 11 – 16V DC. The module is controlled via CAN bus.

The module acts as an OWA lighting bus controller. It also has four ground-detecting inputs and a 1-Wire interface.

OWA lighting bus

The OWA lighting bus (One Wire Ampio) is a solution dedicated to controlling LED lighting. Each bus segment contains a controller and up to 16 lighting node drivers or LED lamps with integrated drivers. From the controller level, it is possible to smoothly adjust the brightness of light sources connected to each of the controllers. It is possible to control sets of light points or individual lights independently. It is also possible to implement the so-called *staircase effect*, i.e. smooth brightening and dimming of consecutive light points along the stairs, driveway, etc.

The OWA lighting bus consists of two wires - a ground wire and a wire that ensures communication between the controller and the drivers of a lighting node. Lighting node drivers also require a power line, hence the OWA bus is usually run with a three-wire cable.

With the use of several power lines, it is possible to connect to a single segment of the OWA bus lighting node drivers powered by different voltages. In such a case, however, care should be taken to properly equalise the ground potentials of each of the power supplies, i.e. to connect the grounding of the power supplies.

The M-LED-p module also facilitates the diagnostics of the power line of lighting node drivers, and if it is connected to the module, the information about its voltage will be available in the building automation bus.

Ground detecting inputs

The module has inputs that go into the active state when they are shorted to ground. They can be used in the case of any devices with potential-free contact outputs, e.g. wall switches, reed switches, buttons, switches, etc. They can also be

used for integration with devices with potential-free relay outputs or optocoupler outputs with a collector voltage greater than 12V.

Temperature sensors

The module is equipped with a 1-Wire interface connector that allows to connect up to 6 digital Dallas DS18B20 temperature sensors. The temperature measurement result is available for all devices operating within the building automation bus. It may turn out to be particularly useful for purposes related to temperature regulation, or to present the measurement result on touch panels and in a mobile application.

The total length of the 1-Wire bus cable to which the temperature sensors are connected cannot exceed 15m.

Typical application

- Smooth brightness adjustment of individual LED spot and strips;
- smooth brightness adjustment of the groups of LED spots and strips;
- LED lighting power line diagnostics;
- connecting classic light switches or other devices with potential-free contact outputs;
- integration with devices with potential-free relay outputs;
- integration with devices with optocoupler outputs;
- room temperature measurement.

Installation

The dimensions of the module enable its installation in a standard junction box. In order to start the module, it must be connected to the CAN bus. The bus of the Ampio system consists of four wires - two for power and two for communication between the modules.

In addition to the CAN bus interface, the device has three connectors with screw terminals. They allow for the connection of four signal lines to the ground-detecting inputs, up to 6 digital Dallas DS18B20 temperature sensors, and the connection of the OWA lighting bus.

In order to use the power line diagnostics functionality of the lighting node drivers, it must be connected to the *MON* terminal - this connection, however, is optional.

Device status LEDs

On the front of the module there are signalling LED indicators. The red LED with the label *CAN* indicates the status of communication on the CAN bus:

- one regular flash every 1 sec. – CAN bus communication is working properly,
- two regular flashes every 1 sec. – the module is not receiving information from other modules,
- three regular flashes every 1 sec. – the module cannot send information to the CAN bus;

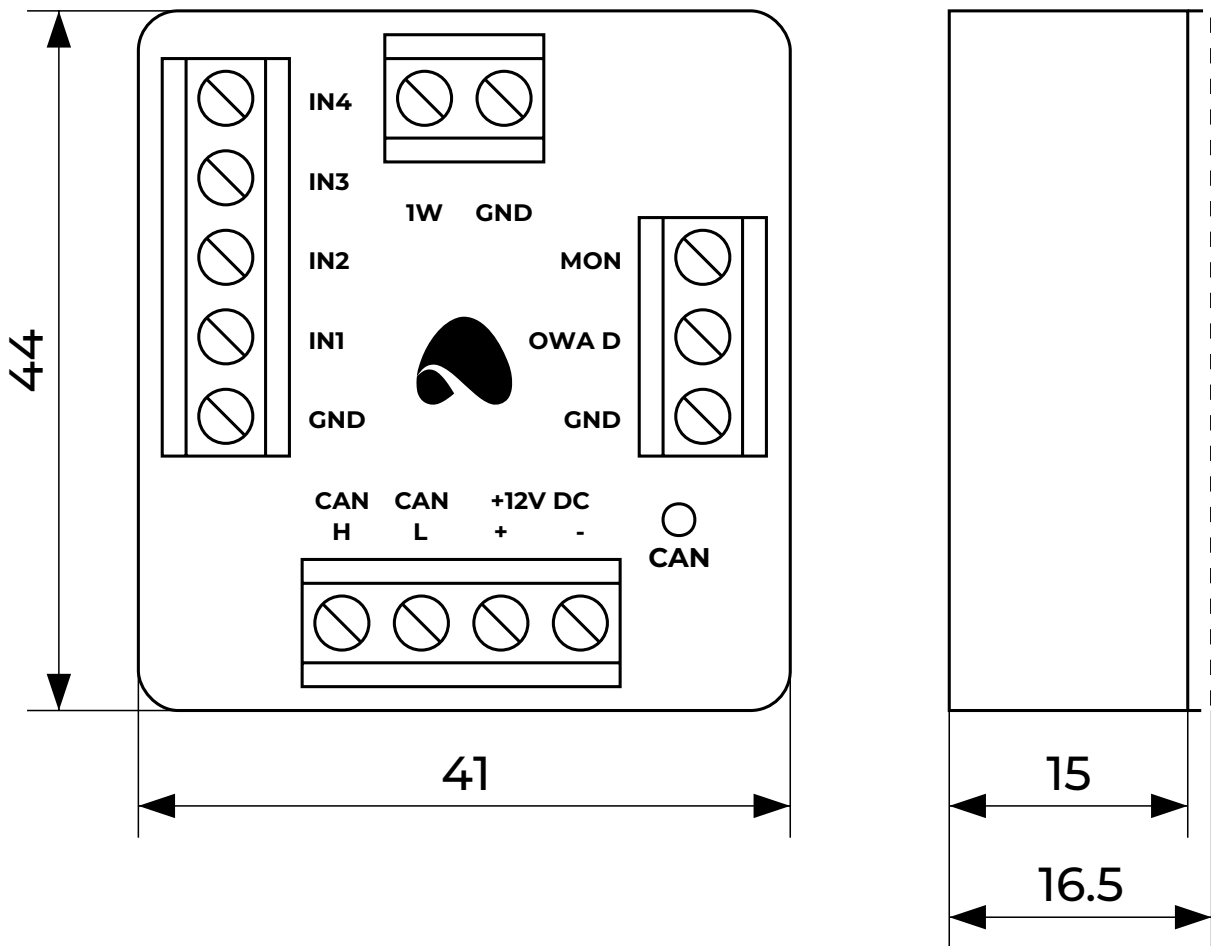
Programming

The module is programmed with the use of the [Ampio Designer](#) software. It allows you to modify the parameters of the module and define its behaviour in response to signals directly available to the module as well as general information coming from all devices present in the home automation bus.

Module dimensions

Dimensions expressed in millimeters.

The dashed lines mark the areas where the device connectors or its other elements can be located.



Connection diagram

