FOX202 | FOX DIMM

Instruction manual

Version 1.0 | 2016

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1 | Terms of use

We would like to thank you for choosing equipment from Nexwell Engineering.

The author made a great effort that the contained information in this document are accurate and reliable, but cannot be held responsible for the improper use of this manual, including the destruction or damage of the equipment.

Due to the product development, the manufacturer reserves the right to do changes.

For any questions or concerns regarding the operation of Nexwell devices, please contact: biuro.techniczne@nexwell.eu

Nexwell Engineering does not accept any liability deriving from the usage of the devices. Installations need to be carried out in accordance with all applicable standards for electrical safety conditions.

All connection work shall be done without any power supply.

You can find the current version of the instruction manual on the producer's website www.nexwell.eu

Important!

RESPONSIBILITY

Nexwell products are not intended for the use in: medical purposes as a direct threat and sustaining life and human health; industrial purposes, referring to controlling of critical for safety reasons, of technological processes and their safety systems, and in other applications, whose failure could danger human lives or cause environmental disasters.

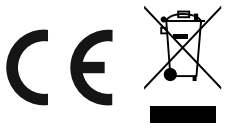
INSTALLATION PLACE

Nexwell products shall be installed where the access is possible without any special equipment (e. g. ladders), and in that way the assembly or disassembly does not result in any material losses (e. g. do not immure it).

PACKAGING AND UTILIZATION

The products are packaged in biodegradable, environmentally-friendly, separable cardboard materials, and protecting ESD foil.

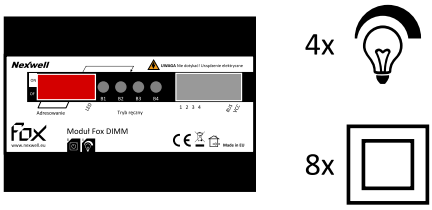
Disposal of waste of used electrical and electronic equipment (for the European Union and other European countries with separate collection systems) the European Directive 2002/96/EC on Waste Electrical & Electronic Equipment (WEEE) enunciates a ban on disposing used electrical and electronic equipment together with other waste as municipal waste – you could get fined. According to the law, used devices must be collected separately and sorted. The thwarted "trash" symbol on the product reminds you of your obligation of special sorting. Consumers should contact their local authority or retailer for information concerning the proceeding with used electrical and electronic equipment.



2 | Overview

Usage

The module Fox DIMM possesses four dimming outputs with the possibility to pair the outputs in the configuration. Also, the outputs have the so-called *Slope (Rampa)* function, which allows a gentle darkening and brightening as well as turning on and off the lighting. The dimmer enables the usage of resistive loads, halogen bulbs or energy-saving bulbs, which are able to work with dimmable light. Additionally, the dimmer can be used with transformers of halogen bulbs (230 VAC – 12 VAC) if an information is placed about opportunities for collaborations.



Definitions

System inputs - potential-free contact inputs, assigned to control the local module Fox DIMM or other system elements. The system inputs can work with monostable and bistable switches in the following configurations:

- holding
- clicking [possibility to set maximum clicking time]

Also, the system inputs can work with movement sensors in the system NO or NC.

System outputs – outputs of 350 W are cooperating with resistive loads, halogen bulbs or energy-saving bulbs, which are able to work with dimmable light.

Fox BUS inputs – the Fox BUS inputs possess two data lines as well as +/- 24 VDC power supply.

Manual control - electro-technical function to control the module outputs. To work properly, the module needs to be configured in FoxMaker. This is necessary because the manual control switches are directly connected microprocessor modules. The manual control is activated when the module is powered.

Physical characteristics

- Outputs
  - Type: TRIAC
  - Number of outputs: 4
  - Load of the output: 13 A
  - Amount of load of the whole module: 1400 W
  - State LEDs: Yes
  - Manual control: Yes
- Inputs
  - Type: potential-free contacts NO or NC
  - Number of inputs: 8
- Fuse
  - Type: slow-blow 1.6 A
  - Number: 4
  - LEDs signalizing blown fuse x 4 (on PCB board)
- Power supply: 24 VDC
- Power consumption: 125 mA (LED off)
- Communication: Fox BUS
- Addressing module: DIP switches
- Installation: switchboard – DIN rail [TH-35]
- Width on the DIN rail: U/6

The module Fox DIMM in the Fox system

The module Fox DIMM needs to be connected with other system components through the Fox BUS rail. After the successful connection, the module shall be configured through the application FoxMaker.

Description of the device

1. Input connectors
2. Output connectors
3. Fox BUS connector
4. Power supply output 230 VAC connector
5. Switches manual control
6. State display of module outputs
7. Module addressing switches
8. LEDs signalizing blown fuse (on PCB board)

Meaning of the address module switches

- **1-5** – address
- **7** – Manual control – switch enables usage of manual control
- **8** – LED On/Off – switch enables turning on and off the LED display

Meaning of module state LEDs

- **1-4** – Control state of individual dimmer outputs (needed is power supply 230 V at the input: 230 V/50 Hz)
  - LED imitates control state of individual dimmer outputs
- **BUS** – data bus
  - LED blinks very fast for 5 s [20 Hz] – module output had a shortcut
  - LED blinks fast [4 Hz] – module does not communicate with the Fox system
  - LED blinks once every two seconds [0,5 Hz] – module communicates with Fox system
- **VCC** – power supply of the module
  - LED lights up – module is correctly powered
- **LED signalizing blown fuse**
  - LED lights up the whole time – fuse is blown

Functionality of the module housing

On the motherboard are two temperature measurement points placed. In the case that the power output, through the TRIAC radiators, reaches 100 °C the power supply will be turned off.
On the module's board are also four fuses placed, for each output one. Close to each fuse, there is a LED to indicate the efficiency. The LED lights up if the fuse is blown.

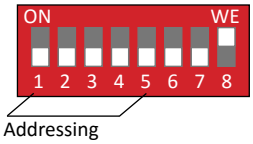
3 | Installation and connection

Installation

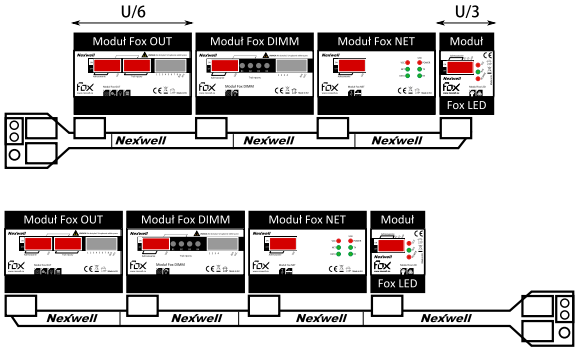
The module Fox DIMM is a device of the Fox BUS. It is designed for usage in switchboards on a DIN rail. **Module width on the rail - U/6 (104mm).**
Please follow the general installation instructions for the installation of the bus. **The installation work should done without any power supply.**

Connection

1. Before powering the device, an address needs to be set. The addressing is done by changing the state of the switches located on the housing of the device – switch addressing [1-5] (see figure). In the project documentation you should note the device's address and its location in the building.



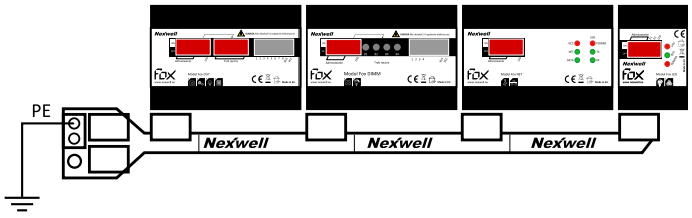
2. Then connect the Fox BUS communication and module power supply. You shall use the Fox BUS rails, there are right and left ones available (see figure).



Left and right Fox BUS rail

The Fox BUS rails are designed to connect up to four modules with the width U/6 each. We suggest to place module with a smaller width at the end of the left rail, and to place smaller ones at the beginning of the right rail.

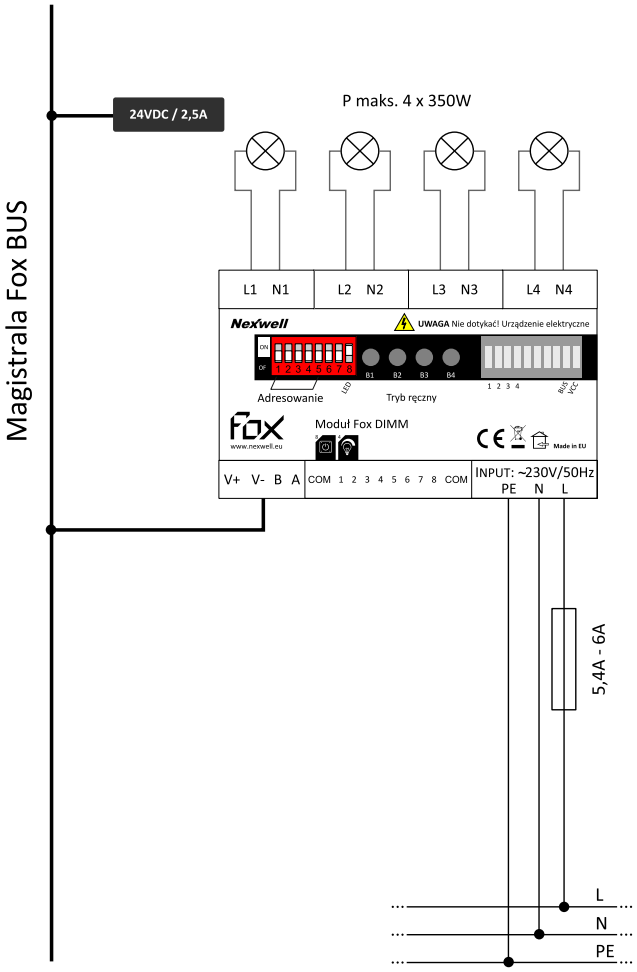
3. Afterwards you need to connect the PE cable (see figure).



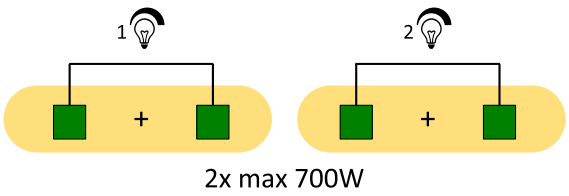
WARNING
Please tighten the screws 24 hours, after installing the connectors to the rail, to fix the electrical contact.

WARNING
Cables, that are longer than 15 metres, need to be shielded. Do not wire cables of local inputs close to electrical wires. The local inputs ignore electrical disturbances less than 20 ms.

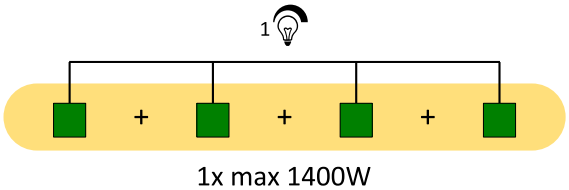
4. The next step is to connect the module outputs to the appropriate lighting circuits, remembering that maximum output load can not exceed 350 W (see figure).



5. If it is necessary to connect a larger load than 350 W to the circuit, you can group two outputs, and thereby increase the maximum power load up to 700 W, or group four outputs, and increase the power load up to 1400 W. The exact method of connecting is shown in the figure below.

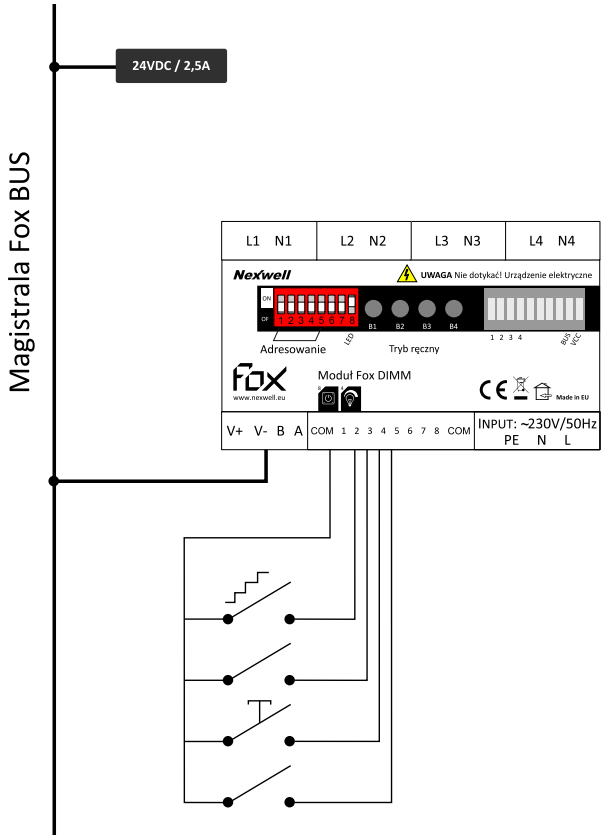


2x max 700W



1x max 1400W

6. You need to connect the wires to the connectors, in case that local input functions are used.



7. The next step is to connect the 230 V module power supply, remembering to connect the N and PE cables.

8. After completing the installation, you can power the bus.

WARNING
The Fox BUS connection via power supply and communication cables is resistant to short--circuits up to -/+ 30 VDC.

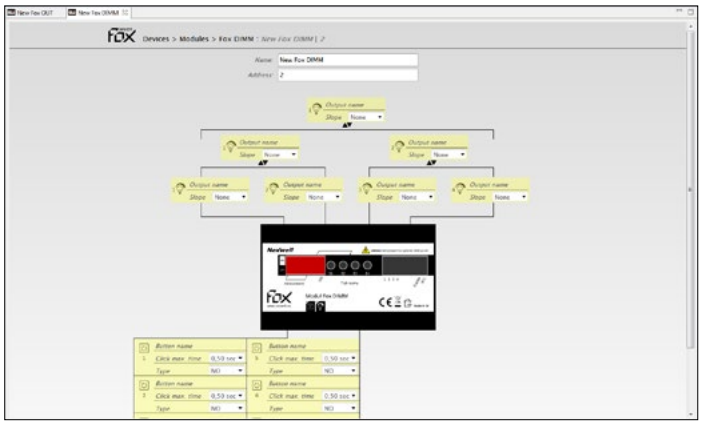
9. Afterwards you can go on with the module configuration in the FoxMaker.

WARNING
Please note that you need, for the correct configuration of the Fox DIMM, the module Fox NET. The minimum needed for configuring the Fox system with Fox DIMM consists of Fox DIMM and Fox NET.

4 | Configuration

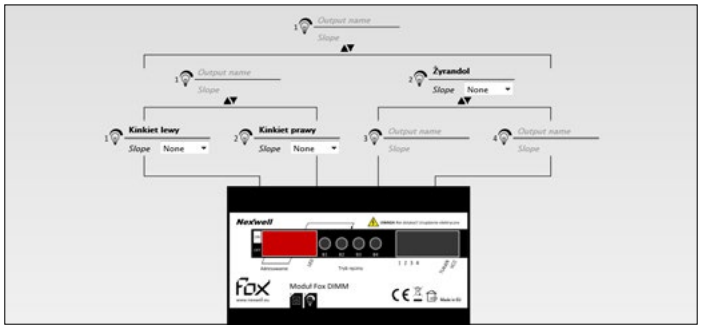
The device Fox DIMM needs to be configured through a computer and the application FoxMaker. It is a licensed freeware, and can be found on the producer's website *www.nexwell.eu*

1. The first step is to add a new device, in this case Fox DIMM, assign an unique name, and set the identical address, which was set during the connection process.



Screenshot FoxMaker – editor configuration Fox DIMM

2. Configuration of the outputs. To configure the output, you need to give it an unique name, and select the time from the *slope (Rampa)* list.



Screenshot FoxMaker – configuration of the outputs

WARNING

The module Fox DIMM can configure maximum four lighting outputs/points or eight inputs. Any not configured inputs/outputs are marked in yellow colour – after their configuration/usage the colour disappears. The outputs can be grouped in 2x 700 W (consisting of two outputs), or in 1x 1400 W (consisting of four outputs). If the outputs are grouped, the corresponding outputs are greyed out, and become inactive.

Slope, Rampa – is the length of the lightening time.

3. Configuration of the Inputs. To configure an input you need to give it an unique name, select the maximum click time, and choose between NO and NC, depending on which cable is connected to the input.

The maximum clicking time is the minimum holding time for the local switch. Beyond this time the device considers the touch as holding.

Screenshot FoxMaker – configuration of the inputs

4. The complete project can be added to the Fox system.

WARNING

For further details on creating and uploading a project to the Fox system, have a look on the documents of the FoxMaker. The current version can be downloaded from the producer's website: www.nexwell.eu