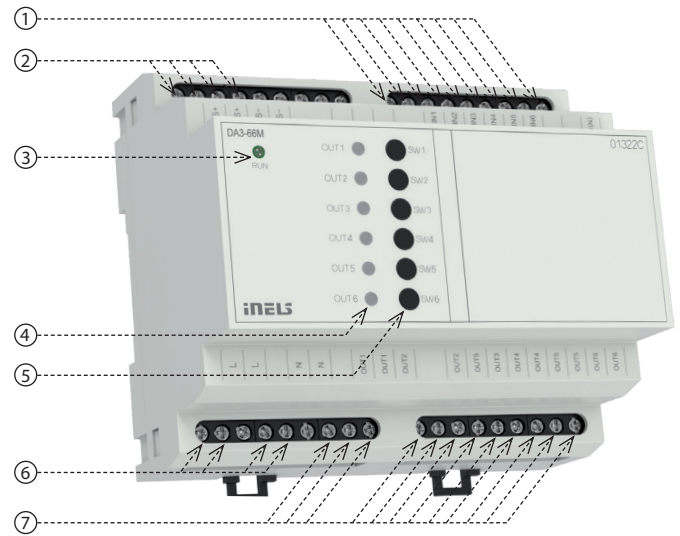


## Characteristics

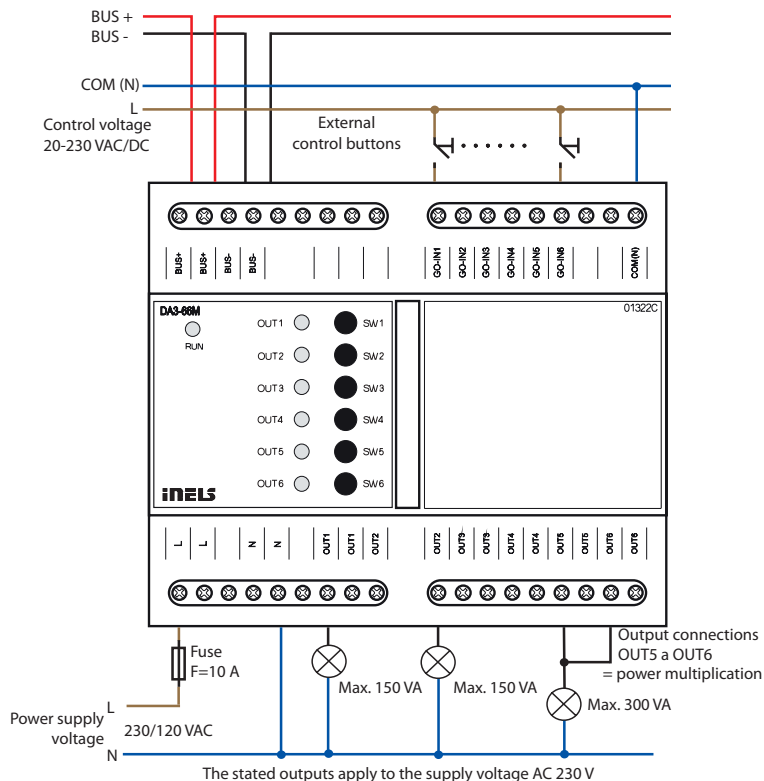
- DA3-66M is a universal dimming 6-channels actuator, which is used to control the brightness of dimmable light sources such as ESL, LED and RLC with 230 V power supply.
- The DA3-66M has 6 semiconductor controlled 230 V AC outputs. The maximum possible load is 150 VA for each channel.
- The individual outputs of the dimmer can be connected in parallel and thus increase the maximum output load at the expense of the number of outputs.
- Each output channel is independently controllable and addressable.
- By setting the min, the brightness potentiometer on the front of the device eliminates flickering of different types of light sources.
- Min. brightness and type of load is performed using SW IDM.
- Use the control buttons on the front panel to manually control the output.
- The actuator is equipped with electronic overcurrent and thermal protection, which switches off the output in case of overload, short circuit, overheating.
- The dimmer has 6 galvanically separated inputs which can be used both to control the dimmer and as a binary input to the INELS system.
- The the device supply (potential L) must be protected with a safety device corresponding to the power input of the connected load, e.g. with a quick-release fuse.
- During installation, it is necessary to leave at least half a module of free space on each side of the actuator for better cooling.
- DA3-66M is in 6-MODULE version and is intended for mounting in a switchboard on DIN rail EN60715.

## Description of device



1. For external inputs control buttons
2. BUS data bus
3. LED indication of the operating status of the unit
4. 6 LED channel status indication
5. Controls buttons
6. Supply voltage terminals
7. Output channel 1-6

## Connection



## Types of connectable loads

| type of source  | symbol | description  |
|-----------------|--------|--|
| R<br>resistive  |        | ordinary light bulb, halogen lamp                    |
| L<br>inductive  |        | coiled transformer for low-voltage halogen lamps     |
| C<br>capacitive |        | electronic transformer for low-voltage halogen lamps |
| LED             |        | LED lamps and LED light sources, 230 V               |
| ESL             |        | dimnable energy-saving fluorescent tubes             |

## Technical parameters

| Outputs                                     |   |                                   |
|---|---|-----------------------------------|
| Output:                                     | 6x contactless outputs, 2x MOSFET / channel   |                                   |
| Load type:                                  | R-resistive, L-inductive, C-capacitive, *   |                                   |
| Isolation BUS separated from all            | LED, ESL  |                                   |
| Minimal controlled load:                    | 10 VA   |                                   |
| Maximal controlled load:                    | DA3-66M / 230V: 150 VA for each channel<br>DA3-66M / 120V: 75 VA for each channel<br>possibility of parallel connection of outputs            |                                   |
| Output indication ON/OFF:                   | 6x yellow LED   |                                   |
| Device protection:                          | thermal/short-term overload/<br>long-term overload  |                                   |
| Inputs                                      |   |                                   |
| Wire buttons:                               | 6x galvanically separated   |                                   |
| Input voltage:                              | 20–230 AC(50–60 Hz)/DC  |                                   |
| Isolation voltage:                          | between inputs max. 230 VAC/DC<br>(basic insulation)<br><br>to all other internal circuits:<br>reinforced insulation: overvoltage category II |                                   |
| Maximum cable length:                       | 10 m  |                                   |
| Glow plug connection:                       | no  |                                   |
| Communication                               |   |                                   |
| Installation BUS:                           | BUS   |                                   |
| Power supply                                |   |                                   |
| Supply voltage by BUS/ tolerance:           | 27 V DC, -20/+10 %  |                                   |
| Rated current:                              | 100 mA (at 27 V DC), from BUS   |                                   |
| Status indication unit:                     | green LED RUN   |                                   |
| Supply voltage for power section/tolerance: | AC 230 V (50-60 Hz),<br>-15/+10 %   | AC 120 V (50-60 Hz),<br>-15/+10 % |
| Connection                                  |   |                                   |
| Terminal:                                   | max. 2.5 mm <sup>2</sup> /1.5 mm <sup>2</sup> with sleeve   |                                   |
| Operating conditions                        |   |                                   |
| Air humidity:                               | max. 80 %   |                                   |
| Operating temperature:                      | -20 to +50 °C   |                                   |
| Storing temperature:                        | -30 to +70 °C   |                                   |
| Protection degree:                          | IP20 device, IP40 mounting in the switchboard   |                                   |
| Overvoltage category:                       | II.   |                                   |
| Pollution degree:                           | 2   |                                   |
| Operating position:                         | vertical  |                                   |
| Installation:                               | switchboard on DIN rail EN 60715  |                                   |
| Design:                                     | 6-MODULE  |                                   |
| Dimensions and weight                       |   |                                   |
| Dimensions:                                 | 90 x 105 x 65 mm  |                                   |
| Weight:                                     | 320 g   |                                   |

## Warning

Before the device is installed and operated, read this instruction manual carefully and with full understanding and Installation Guide System iNELS3. The instruction manual is designated for mounting the device and for the user of such device. It has to be attached to electro-installation documentation. The instruction manual can be also found on a web site [www.inels.com](http://www.inels.com). Attention, danger of injury by electrical current! Mounting and connection can be done only by a professional with an adequate electrical qualification, and all has to be done while observing valid regulations. Do not touch parts of the device that are energized. Danger of life-threat! While mounting, servicing, executing any changes, and repairing it is essential to observe safety regulations, norms, directives and special regulations for working with electrical equipment. Before you start working with the device, it is essential to have all wires, connected parts, and terminals de-energized. This instruction manual contains only general directions which need to be applied in a particular installation. In the course of inspections and maintenance, always check (while de-energized) if terminals are tightened.

## CONNECTION TO THE SYSTEM, INSTALLATION BUS

iNELS3 peripheral units are connected to the system through the BUS installation. Installation BUS conductors are connected to the terminal units to BUS+ and BUS- terminals, wires cannot be interchanged. For installation of BUS it is necessary to use a cable with a twisted pair of wires with a diameter of at least 0.8 mm, the recommended cable is iNELS BUS Cable, whose features best meet the requirements of the BUS installation. Bearing in mind that in terms of all the properties it is possible in most cases also use the cable JYSTY 1x2x0.8 or JYSTY 2x2x0.8, however it is not recommended as the best option. In the case of a cable with two pairs of twisted wires it is not possible to use the second pair of the other for modulated signal due to the speed of communications; it is not possible within one cable to use one pair for one segment BUS and the second pair for the second segment BUS. For installation of BUS it is vital to ensure that it is kept at a distance from the power lines of at least 30 cm and must be installed in accordance with its mechanical properties. To increase mechanical resistance of cables we recommend installation into a conduit of suitable diameter. BUS topology installation is free except for the ring, wherein each end of the bus must terminate at the terminals BUS + and BUS- peripheral unit. While maintaining all the above requirements, the maximum length of one segment of the installation BUS can reach up to 350 m. Due to the data communication and supply of units in one pair of wires, it is necessary to keep in mind the diameter of wires with regards to voltage loss on the lead and the maximum current drawn. The maximum length of the BUS applies provided that they comply with the tolerance of the supply voltage.

## INSTALLATION RECOMMENDATIONS

Assure sufficient device cooling. Due to the large number of light sources, the maximum load depends on the internal design of dimmable LEDs and ESLs and their effect  $\cos \varphi$ .

The effect of dimmable LEDs and ESLs fluctuates within a range of:  $\cos \varphi = 0.95$  to 0.4. The approximate value of the maximum load is attained by multiplying the dimmer load carrying capacity with the power factor of the connected light source.

## CAPACITY AND CENTRAL UNIT

It is necessary to comply with the requirement of a maximum load of one BUS line - maximum up to 1000 mA current. When connecting units which draw greater than 1A, BPS3-01M with 3A sampling can be used.

## SUPPLYING THE SYSTEM

For supplying power to system units, it is recommended to use the power source of ELKO EP titled PS3-100/iNELS or PS3-30/iNELS. We recommend backing up the system with backup batteries connected to the source of PS3-100/iNELS (see sample diagram of connecting the control system).

## DESCRIPTION OF DEVICE PROTECTION STATUS

The DA3-66M device features protection from overheating, short-term and long-term overloads:

- Thermal protection: activates upon constant output load, or insufficient device cooling. The protection switches off the output until the dimmer cools down to its operating temperature. The dimmer can then be switched back on. Remove faults by providing better dimmer cooling, by decreasing the power consumption of the connected load, or by switching to the correct light source position.
- Short-term overload: activates by short-term high overload, ex. by temporary short circuit. Protection appears by short flashing of the connected load. Remove faults by decreasing the power consumption of the connected load, or by switching to the correct light source position.
- Long-term overload: activates by constant output overload caused by excessive amount of connected load. The protection switches off the device, and it is possible after 5 minutes to switch the dimmer back on. Remove faults by decreasing the power consumption and by specialized inspection of the wiring distribution.

## GENERAL INFORMATION

The unit is capable of working as an independent element without a central unit only in very limited scope of its functions. For full utility of the unit, it is necessary for the unit to be connected to the central unit of the system CU3, or to a system that already contains this unit as its expansion to include further system.

All unit parameters are set through the central unit CU3 in the software iDM3.

There are LED diodes on the unit front panel, for indication of supply voltage and communication with the central unit series CU3. In case that the RUN diode flashes at regular intervals, so there is standard communication between the unit and BUS. If the RUN diode lights permanently, so the unit is supplied from BUS, but there is no communication between BUS and unit. In case that RUN diode is OFF, so there is no supply voltage on the terminals BUS+ and BUS-.

## ADDITIONAL INFORMATION

Energy-saving lamps not explicitly marked as dimmable cannot be dimmed. Incorrect setting of the light source type only influences the range and course of dimming (meaning no damage occurs to either the dimmer or load). Incorrect setting of the load type may cause the dimmer to overheat. The maximum number of dimmable light sources depends on their internal design.