CU3-09M/DALI
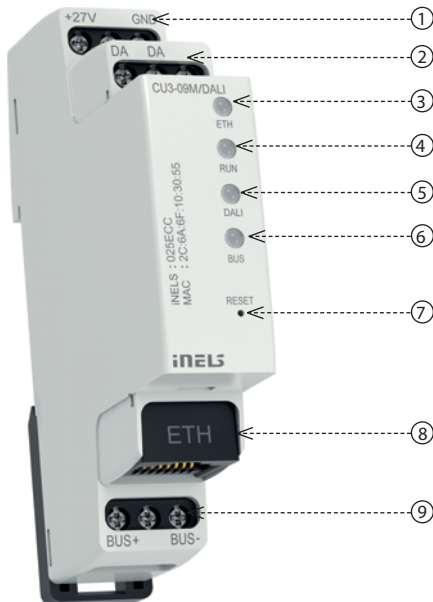
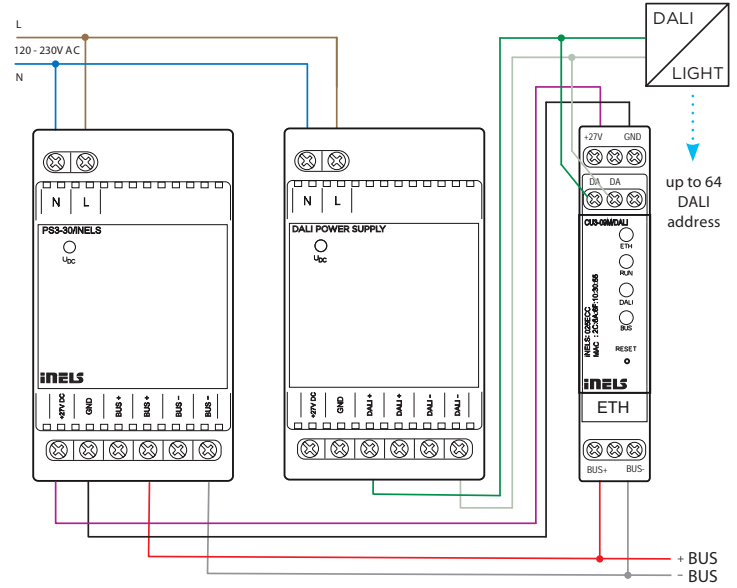EN **Central unit with 1x BUS, 1x DALI**

02-20/2024

Characteristics

- CU3-09M is one of the basic system control units of iNELS BUS istallations.
- The unit can work independently, as an autonomous project, or it can be controlled by the central software as part of a larger project.
- The unit is equipped with one BUS to swich it is possible to connect up to 32 elements from the iNELS BUS portfolio.
- The current load of one line is max. 1 A. BPS3-01M with 3 A can be used incase of connected device with more than 1 A.
- The CU3-09M/DALI system unit is equipped with one DALI bus.
- The DALI system bus allow control of up 64 independent DALI for devices.
- Addressing of DALI can be done via the iDM3 software.
- The RJ45 100 Mbps Ethernet connector is used direct communication with the cloud for mobile app control or for communication with the superior unit within the iNELS IP topology.
- Configuration takes place in the iNELS3 Designer & Manager software (iDM3).
- Through iDM3 it is possible to update the firmware of central units and bus connected peripheral units.
- The central unit is implemented with MQTT protocol for 3rd party communication.
- The unit is powered by 27 V DC from iNELS power supply.
- System units CU3-09M/DALI in 1-MODULE design are designed for mouting into a switchboard on DIN rail EN60715.

Description of device

Connection

1. Power supply terminals
2. DALI interface
3. LED indication of communication Ethernet
4. LED indication of unit operating status
5. DALI bus LED indication
6. BUS bus LED indication
7. Reset button
8. Ethernet port 100 Mbps (RJ45)
9. BUS data bus

Technical parameters

Indication LED STATUS

Green - RUN:	The main program runs
Red - ERR:	The main program stalled

Communication

System BUS	
Maximum number of units:	max. 32 Units
Status indication (LED BUS):	green: BUS Operating Status
	red: error indication on the bus

Output interface DALI	
DALI addresses max.	64
Bus power supply:	external DALI power supply must be connected
Status indication (LED DALI):	green: DALI Operating Status

Ethernet	
Connector:	RJ45
Communication speed:	100 Mbps
Ethernet status indication	green - Ethernet communication
(LED ETH):	yellow - speed Ethernet 100 Mbps
Default IP address:	192.168.1.1

RESET button

Restart:	short press
Reset (return to factory	press the button to bring power on,
settings):	button release 10 s after power is supplied

Power

Supply voltage/tolerance:	27 V DC, -20/+10 %
Rated current:	50 mA (at 27 V DC)

Operating conditions

Working temperature:	-20 to +55 °C
Storage temperature:	-25 to +70 °C
Air humidity:	max. 80%
Degree of protection:	IP20 device, IP40 with cover in the control cabinet
Degree of pollution:	2
Working position:	any
Installation:	to the control cabinet for DIN rail EN 60715
Design:	1-MODULE
Terminal plate:	max. 2.5 mm^2

Dimensions and weight

Dimensions:	94 x 17.6 x 64 mm
Weight:	72 g
Standards:	EN 63044-1, EN 62368-1

General instrucions

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 is it 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 300 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.

CAPACITY AND CENTRAL UNIT

It is possible to connect to the central unit CU3-01M/02M or miniCU CU3-07/08/09/10M independent BUSes by means of terminals BUS1+, BUS1- or BUS2+, BUS2-. It is possible to connect to each BUS up to 32 units, so it is possible to connect directly to the central unit a total of 64 units. 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. It is the sum of the rated currents of the units connected to the BUS line, other units can be connected using the units MI3-02M (for CU3-01M/02M) , which generate further BUSes. These are connected to the CU3-01M/02M unit via the system BUS EBM and you can connect a total of 8 units via EBM BUS to the central unit MI3-02M.

SUPPLYING THE SYSTEM

For supplying power to system units, it is recommended to use the power source of ELKO EP titled PSM3-30/iNELS, PSM3-60/iNELS, PSM3-100/iNELS or PS3-30/iNELS . We recommend backing up the system with backup batteries.

GENERAL INFORMATION

To operate the unit, it is necessary that the unit is connected to a central unit CU3 series, 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 CU3-0XM in the software iDM3.

There is LED diode on the PCB 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-.

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. 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.

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