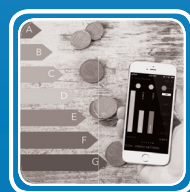


INTELLIGENT ELECTRO-INSTALLATION



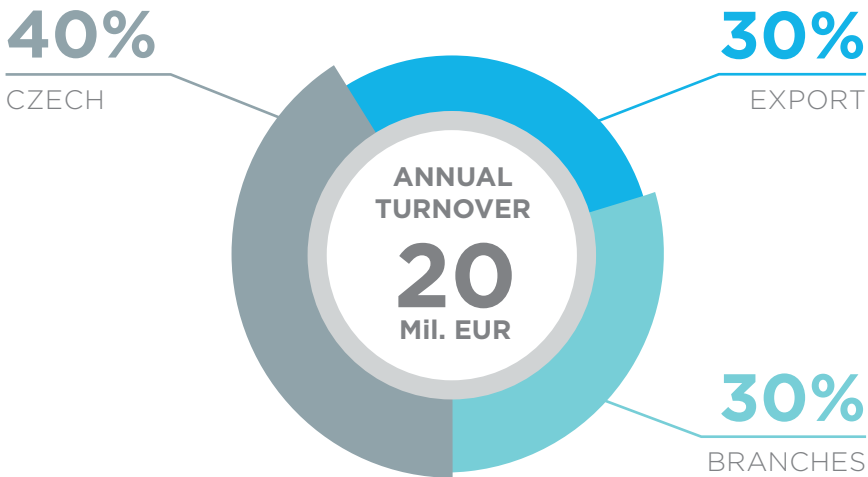
ELKO EP, Holding

The company ELKO EP has been one of the leading European players in the field of residential and industrial electrical devices for more than 23 years. Since 2007, the company has been developing and producing its own system of Smart Home & Building Solutions called iNELS.

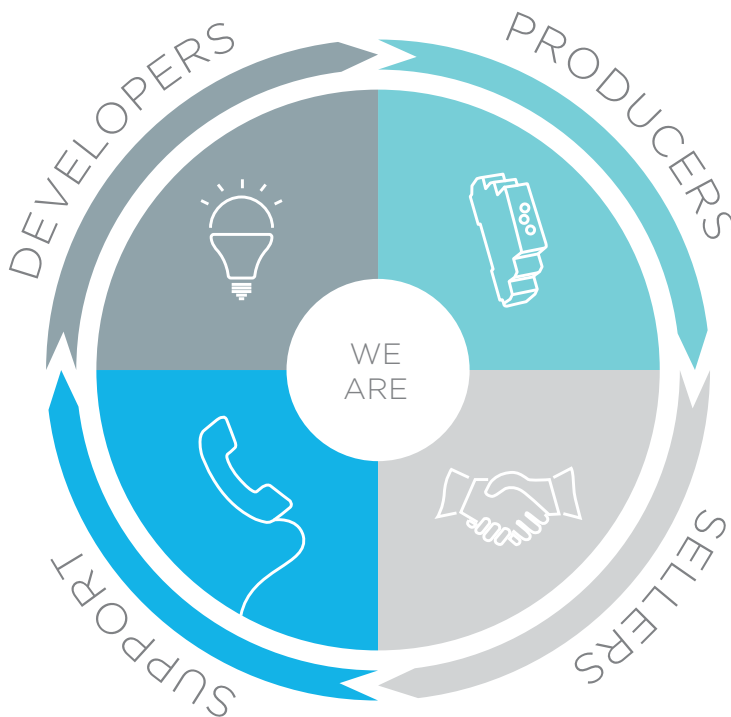
At present, ELKO EP employs nearly 300 people, exports to 70 countries around the world and already has 10 foreign branches. The company is justly proud to produce its own components, and to have its own development and innovation of new products. It is also able to offer its customers instantaneous distribution and rapid, flawless service. The company became the Company of the Year in 2012 and earned its place as one of the TOP 100 Czech companies.



Facts and Stats



3rd position
in Europe



10
BRANCHES
OVER THE WORLD

70
EXPORTING
COUNTRIES

300
EMPLOYEES

5 000
INELS INSTALLATION

12 000 000
MANUFACTURED PRODUCTS

www.elkoep.com

Choose the right one!

PRICE OF INSTALLATION



Control using the TV	●
Tablet	●
PC / Laptop	●
Music playback	-
Video cameras	●
Weather station	-
Door communicator	-
Controlling home appliances	-
Touch panel	●
Control via Smartphone	●
Detectors	●
Wireless switch	●
Heating regulation	●
Controlling blinds	●
Dimming lights	●
Controlling appliances	●

Wireless electrical installations

Most of you have already built a house or furnished an apartment. If you want to bring life into your home, we have an elegant wireless solution. As the name implies, the wireless communication is works with a range of up to 200 m (depending on the internal structure of the house/apartment and the building materials used.)

The central brain is the RF Touch unit, which can be placed anywhere within range. It's possible not only to program entire system from this unit, but also to control it. Brightly replaces several thermostats and controllers. Within the system, you have an unlimited opportunity to add any drivers and place them wherever convenient.

Energy savings:

 Controlling appliances	 Dimming lights	 Controlling blinds	 Heating regulation	 Group controller	 Detectors	 Control via smartphone	 Touch panel
 Controlling household appliances	 Door communicator	 Weather station	 Video cameras (outdoor/indoor)	 Audio Zone (music playback)	 PC /Laptop	 Tablet	 Video Zone (controlling via TV)

PRICE OF INSTALLATION



Control using the TV	●
Tablet	●
PC / Laptop	●
Music playback	●
Video cameras	●
Weather station	●
Door communicator	●
Controlling home appliances	●
Touch panel	●
Control via Smartphone	●
Detectors	●
Wireless switch	●
Heating regulation	●
Controlling blinds	●
Dimming lights	●
Controlling appliances	●

Bus electrical installations

Are you building a new house? Then you should consider a bus-based solution. A bus in this sense is a data conductor that is distributed in the walls across the entire home. As opposed to a wireless solution, its advantage is range, because up to 18 x 550 m buses can be distributed in a single building.

Connection to a computer expands the scope of its available functions. This system may be expanded to include multimedia extensions and can connect third party devices (household appliances, A/C, etc.). Control and monitoring the system can be performed via PC, the Internet, telephone, tablet, etc.

The system offers a wider range of applicable functions. A computer is used to set the parameters.

Energy savings:

 Controlling appliances	 Dimming lights	 Controlling blinds	 Heating regulation	 Wireless switch	 Detectors	 Control via smartphone	 Touch panel
 Controlling household appliances	 Door communicator	 Weather station	 Video cameras (outdoor/indoor)	 Audio Zone (music playback)	 PC /Laptop	 Tablet	 Video Zone (controlling via TV)

BUS electro-installation

What are the benefits of bus controlling?

- Save energy by regulating lighting and heating properly
- Control of blinds, awnings, exterior or internal window shutters
- Dimming lights, lighting scenes
- Control of appliances or electrical devices
- Control access gates, garage doors
- Logical and central functions (exit button, ...)
- Manual and automatic control mode
- Preventing undesirable opening of a window or a door
- Responding to the movement of people (authorized and unauthorized)
- Remote monitoring via smartphone, tablet or laptop
- Possibility to control via the TV screen
- Integration of third-party devices (cameras, air conditioning, ...)



When you build a new house or decide on a complex reconstruction, the bus solutions of iNELS BUS system represents a unique solution of electro-installation. The system offers wide range of functions which bring a pleasant comfort to the users. It also allows to integrate each technology in the house and brings savings. The way of controlling can be changed according to user requirements, the electro-installation can also be extended.

Using of applications to smartphones or tablets is very popular. They provide efficient and easy way to control your home during your absence.

iNELS BUS System allows you to integrate and control most of technologies used in your house. It saves your money spent on energy. You don't need to wonder whether it is summer or winter. Simply set the desired the temperature in the room and your house will automatically know what to do.

The main idea of intelligent living is saving. The house is able to switch off the lighting and heating in the room at the time of your absence. In winter it pulls up the blinds, what allows the house warming by sun rays. Vice versa in the summer the blinds are pulled down earlier what reduce the switching frequency of energy-intensive air conditioning.

Flood, temperature, fire or gas leak detector sends command to close the water supply, gas, ventilation, etc.

The really useful features is also a simulation of presence when you are on vacation.

To control the electro-installation you can use wall-switches, glass touch switches, touch display, smartphone, tablet or TV screen. So you can easily control whole house from one place.

Do you like to listen music, to watch movies or to view pictures? All these data can be available from anywhere in your house thanks to iNELS Multimedia. In addition you can easily turn off the children's television in other room. Whole house can be controlled via TV screen.



Switching el. appliances



Light dimming



Heating regulation



Air conditioning control



Roller blind control



Detector control



Multimedia

CONTROL YOUR ELECTRO-INSTALLATION VIA SMARTPHONE

Get your house under control thanks the Apps in your smartphone or tablet. The Apps have been developed for these operating systems – Android and iOS (iPhone, iPad).



CONTROL TOUCH UNIT EST

The EST unit with colour touch screen allows you to control heating, adjust the colour of LED strips and control lighting, shutters, other appliances or scenes. This unit is especially suitable for areas/rooms where would otherwise be necessary to use a bunch of controllers.



CONTROL THROUGH A TV

From the comfort of your couch you can easily control the whole house, you can adjust the temperature in the given room or turn the lights OFF in your garage. The multimedia extension allows you to view pictures from your holiday, play the movie in the other room or listen the radio or music. All your pictures, movies and music will be stored in just one place, but available from any room in the house.



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Hotel solutions

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Overview of system units

System units



CU3-01M

Basic element of the system, 2x CIB BUS, 1x EBM BUS, OLED display, Ethernet 100 Mbps, 2x analog input, 4x digital inputs, 6-MODULE.



CU3-02M

Basic element of the system, 2x CIB BUS, 1x EBM BUS, RF control interface, OLED display, Ethernet 100 Mbps, 2x analog input, 4x digital inputs, 6-MODULE.



MI3-02M, MI3-02M/iNELS2

Allows you to expand the system to two CIB (2 x 32 units), 1-MODULE.



BPS3-01M, BPS3-02M

Used for impedance segregation of bus from the power supply, 1-MODULE.



GSM3-01M

GSM gateway for communication iNELS system with GSM mobile phones, EBM BUS, 3-MODULE.



PS3-100/iNELS

Power supply 100W, supply voltage 100-250 V AC, output voltage DC/max. current: 27.6 V/3.6 A and 12.2 V/0.35 A, 6-MODULE.

Switching actuators



SA3-02M

2x changeover contacts 16 A, LED indication for relay status, manual control, 1-MODULE.



SA3-04M

4x changeover contacts 16 A, LED indication for relay status, manual control, 3-MODULE.



SA3-06M

6x changeover contacts 8 A, LED indication for relay status, manual control, 3-MODULE.



SA3-012M

12x switch contacts 8 A, LED indication for relay status, manual control, 6-MODULE.



SA3-01B

1x switch contacts 16 A, 1x thermo input, mounting into the installation box.



SA3-02B

2x changeover contacts 8 A, 1x thermo input, mounting into the installation box.

Shutter actuator



JA3-02B/DC

Actuators for control and management of blinds, shutters, awnings, mounting into the installation box.

Dimming actuators



DA3-22M

Unit for dimming ESL, LED and RLC load, 1x thermo input TC/TZ, 3-MODULE.



LBC3-02M

Control unit for electric ballast, 2x analog signal 0(1)-10 V, 2x changeover contacts 16 A, LED indication for relay status, 3-MODULE.



EMDC-64M

iNELS-DALI/DMX converter for controlling electronic ballasts DALI and DMX receivers. 3-MODULE.



DCDA-33M

Dimming actuator for LED and RGB light sources controlled by varying current. Control interface DMX, DALI and CIB. 3-MODULE.



RFDA-73M/RGB

Dimming unit for LED strips, 3-MODULE.

Input units



IM3-140M
Input module,
14x binary inputs,
3-MODULE.



IM3-20B, IM3-40B
Binary input modules, 2x/4x
input, 1x thermo input,
mounting into the installation box.



IM3-80B
Input module,
8x binary input,
1x thermo input, mounting
into the installation box.



TI3-10B
Unit for connecting,
1x sensor TC, TZ, Ni1000,
Pt1000 or Pt100,
mounting into the
installation box.



TI3-40B
Unit for connecting,
4x sensor TC, TZ, Ni1000,
Pt1000 or Pt100,
mounting into the
installation box.



TI3-60M
Unit for connecting,
6x sensor TC, TZ, Ni1000,
Pt1000 or Pt100,
3-MODULE.

Converters



ADC3-60M
Analog signal converter
on the bus,
6x inputs,
3-MODULE.



DAC3-04B
Converter from bus to
signal 0(1)-10 V,
4 channels, 1x thermo
input, assembly
the installation box.



DAC3-04M
Converter from bus
to signal 0(1)-10 V,
4 channels, 1x thermo
input, 3-MODULE.

Applications iNELS Home Control



iHC-MA
Application to control
the system iNELS from
phone with
Android OS.



iHC-TA
Application to control
the system iNELS from
tablet with Android OS.

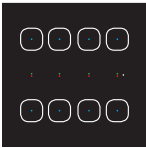


iHC-MI
Application to control
the system iNELS from
iPhone.



iHC-TI
Application to control
the system iNELS from
iPad.

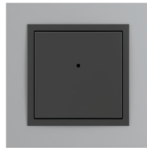
Wall units and controllers



**GSB3-40,
GSB3-60,
GSB3-80**
Capacitive glass wall mounted
controllers, 4x/6x/8x buttons,
built-in temperature sensor
and light intensity sensor, 2x
AIN/DIN.



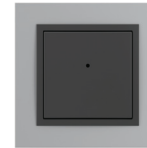
EST3
3.5" control unit with
colour touch screen.
4 basic button
templates are available -
2x2, 2x3, 3x3, 3x4.
LOGUS⁹⁰ design.



**WSB3-20,
WSB3-20H**
Two-button controller,
built-in temperature sensor and
humidity (version H), 2x AIN/
DIN, 1x indication LED, comes in
LOGUS⁹⁰ design.



**WSB3-40,
WSB3-40H**
Four button controller,
built-in temperature sensor and
humidity (version H),
2x AIN/DIN, 2x indication
LED, comes in LOGUS⁹⁰ design.



**WMR3-21,
GMR3-61**
RFID card readers in an
elegant glass or LOGUS⁹⁰
design, 1x switching contact
8 A for door lock control.



IDRT3-1
Control unit for correction of
the heating circuit in a range
of ± 3 , ± 4 or ± 5 °C.

AUDIO/VIDEO



LARA
The music and internet
radio player in wall
button size. Integrated
power amplifier 2x 10 W,
in LOGUS⁹⁰ design.



eLAN-IR-003
Converter Ethernet to IR code,
3 inputs, support IR codes for
the frequency of 20-455 kHz.



iMM Client
The VideoZone player
enabling control of all
functions via TV.
Translate IP protocols of
third-party devices.

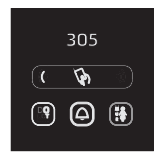


Connection Server
Translate IP protocols of
third-party devices.

Hotel solutions



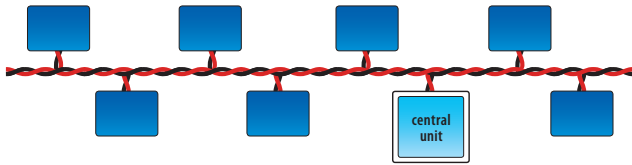
EHT3
Control panel with 3.5"
color touchscreen. The
temperature control,
lighting, shading, music
scenes. LOGUS⁹⁰ design.



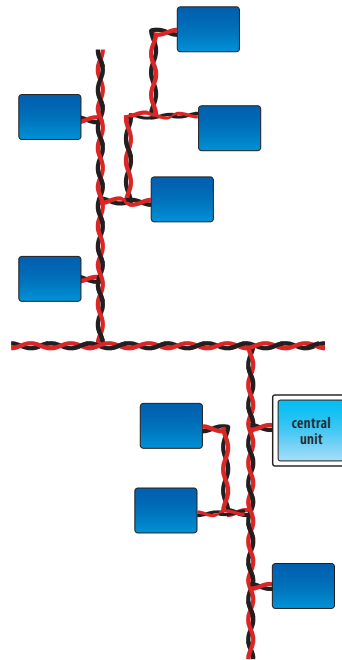
GHR3-11
Glass RFID card reader
with a button and a bell
signaling "Do not disturb"
and "Make up room".

Examples of CIB bus topology

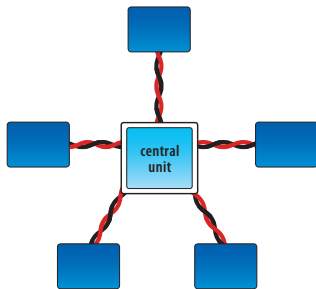
Linear structure



Tree structure



Circular structure



Product identification - explanation

SA3-04M

- S** Switching
- A** Actuator
- 3** 3rd generation of iNELS
-
- 0** Number of inputs
- 4** Number of outputs
- M** Modular design

DA3-22M

- D** Dimming
- A** Actuator
- 3** 3rd generation of iNELS
-
- 2** Number of inputs
- 2** Number of outputs
- M** Modular design

DAC3-04M

- D** Digital
- A** Analogue
- C** Converter
- 3** 3rd generation of iNELS
-
- 0** Number of inputs
- 4** Number of outputs
- M** Modular design

IM3-20B

- I** Input
- M** Module
- 3** 3rd generation of iNELS
-
- 2** Number of inputs
- 0** Number of outputs
- B** Box (in a mounting box)

GSB3-80

- G** Glass
- S** Switch
- B** Button
- 3** 3rd generation of iNELS
-
- 8** Number of inputs
- 0** Number of outputs

WSB3-40

- W** Wall
- S** Switch
- B** Button
- 3** 3rd generation of iNELS
-
- 4** Number of inputs
- 0** Number of outputs

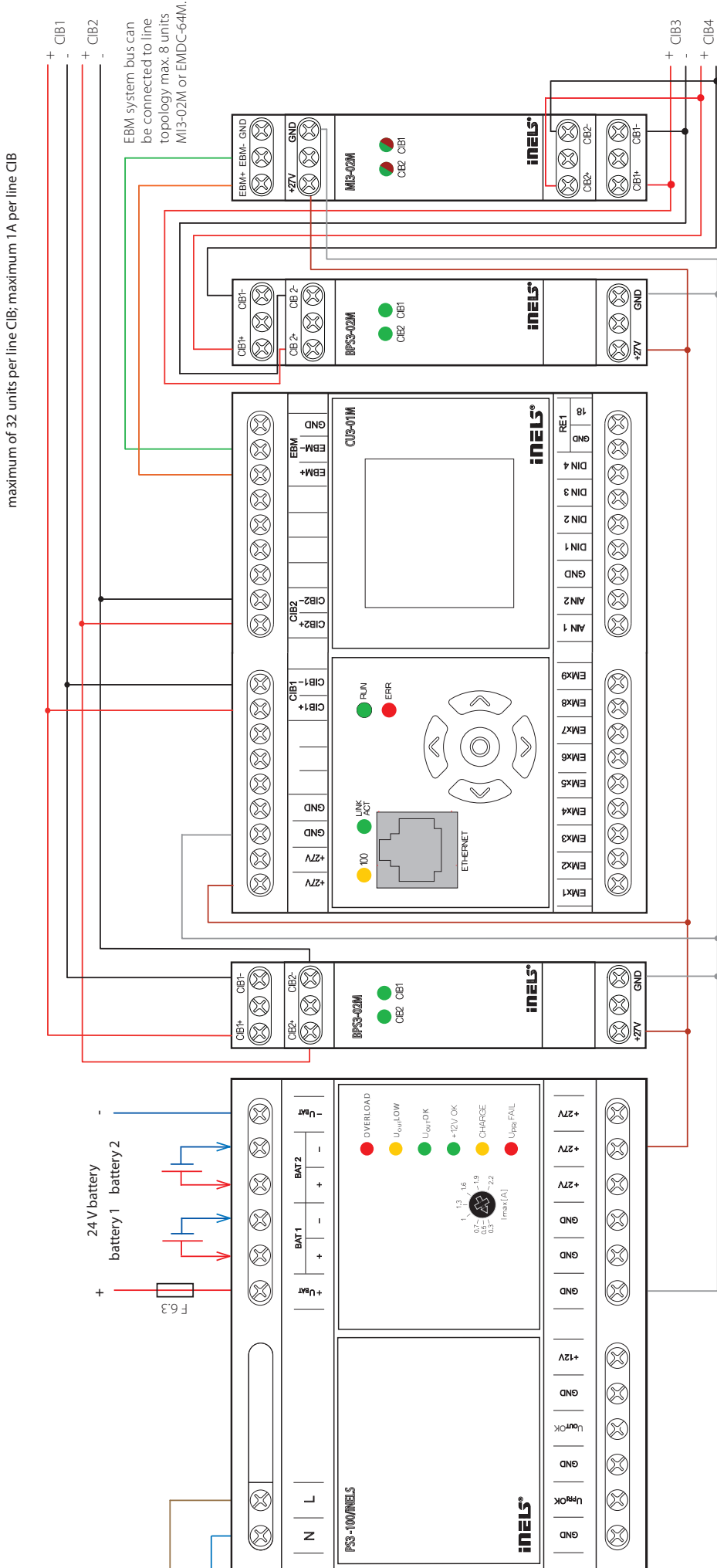
TI3-60M

- T** Temperature
- I** Input
- 3** 3rd generation of iNELS
-
- 6** Number of inputs
- 0** Number of outputs
- M** Modular design

LBC3-02M

- L** Lighting
- B** Ballast
- C** Controller
- 3** 3rd generation of iNELS
-
- 0** Number of inputs
- 2** Number of outputs
- M** Modular design

Basic system connection with the central unit CU3-01M





CU3-01M



CU3-02M

EAN code

CU3-01M: 8595188132220

CU3-02M: 8595188132398

TECHNICAL PARAMETERS

CU3-01M, CU3-02M

LED indication:	
Green LED RUN:	Flashing - communication with CIB, ON - no communication
Red LED ERR:	Flashing - no project, ON - unit STOP
OLED display	
Type:	displays the current status and settings
Resolution:	color OLED
Visible area:	128x128 / 1:1 aspect ratio
Controlling:	26x26 mm
The internal real-time clock:	using arrows
	accuracy: 1s/day at 23 °C

INPUTS

Inputs:	4x NO or NC to GND (-)
	2 analogue inputs 0÷30

OUTPUTS

Output:	relay output- NO/GND
Number of connected units:	
(directly to the CU3-01M(02M):	max. 64 (2x32)
Expansion possibilities	up to 576 units
external bus master:	(CU3-01M(02M) and 8x MI3-02M)

COMMUNICATION

CIB	
Maximum number of units:	max. 32 units to one CIB line
Maximum cable length:	max. 550m (depends on power loss)
System bus EBM	
Maximum cable length:	max. 500 m
Number of connected ext. masters:	up to 8 (regards to increasing the cycle turns)
Ethernet	
Connector:	RJ45 on the front panel
Communication speed:	100 Mbps
Indication of the Ethernet:	green - Ethernet communication yellow - Ethernet speed 100 Mbps
The default IP address:	192.168.1.1 (the IP address can be changed in the menu using the display and buttons)

iNELS RF CONTROL INTERFACE FOR CU3-02M

Communication protocol:	RF Touch Compatible
transmitting frequency:	868 MHz / 915 MHz / 916 MHz
Signal transmission methods:	bidirectionally addressed message
Output for RF antenna:	SMA connector*
RF antenna:	1 dB (part of package)
Free space range:	up to 100 m

• Central units CU3-01M and CU3-02M are the brain of the iNELS system, a "mediator" between user's programming environment and controllers, units and actuators connected to the bus.

• It's possible to directly connect up to 2 lines of CIB buses in to CU3-01M and CU3-02M, and on each bus we can connect up to 32 iNELS3 units.

• The main difference between CU3-02M and CU3-01M is that CU3-02M is moreover equipped by RF module which enables communication with selected units from iNELS RF Control system.

• Central units CU3-01M (02M) support also peripheral units from iNELS2 thanks to external master MI3-02M/iNELS2.

• User's project and retentive data are stored in a non-volatile internal memory hereby data are backed up without the supply voltage. Real time clock (RTC) backup for 10 days.

• Power supply controlling system - network voltage and the status of the backup battery.

• Possibility of setting time synchronization via NTP server.

• The RJ45 Ethernet port's connector is located on the front panel of the unit, the transmission speed is 100 Mbps.

• For CU3-01M (02M) it is possible to use 4 potential-free inputs for connecting external controllers (buttons, switches, sensors, detectors, etc.) and 2 analog inputs 0-30V.

• CU3-01M (02M) comes with OLED display that shows the current status and enables settings (network settings, date, time, service) of the central unit CU3-01M (02M).

• Movement in the menu CU3-01M (02M) using arrows on the front panel.

• CU3-01M (02M) in 6-MODULE are designed for mounting into a switchboard on the EN60715 DIN rail.

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	110 mA (at 27V DC)

OPERATING CONDITIONS

Working temperature:	-20 to +55 °C
Storage temperature:	-25 to +70 °C
Humidity:	max. 80%
Degree of protection:	IP 20 devices, IP 40 with cover in the switchboard
Overvoltage category:	II.
Degree of pollution:	2
Operating position:	any
installation:	to the switching board on the EN60715 DIN rail
Design:	6-MODULE
Terminal:	max. 2.5 mm ²

DIMENSIONS AND WEIGHT

Dimensions:	90 x 105 x 65 mm
Weights:	250 g

* Max Tightening Torque for antenna connector is 0.56 Nm.

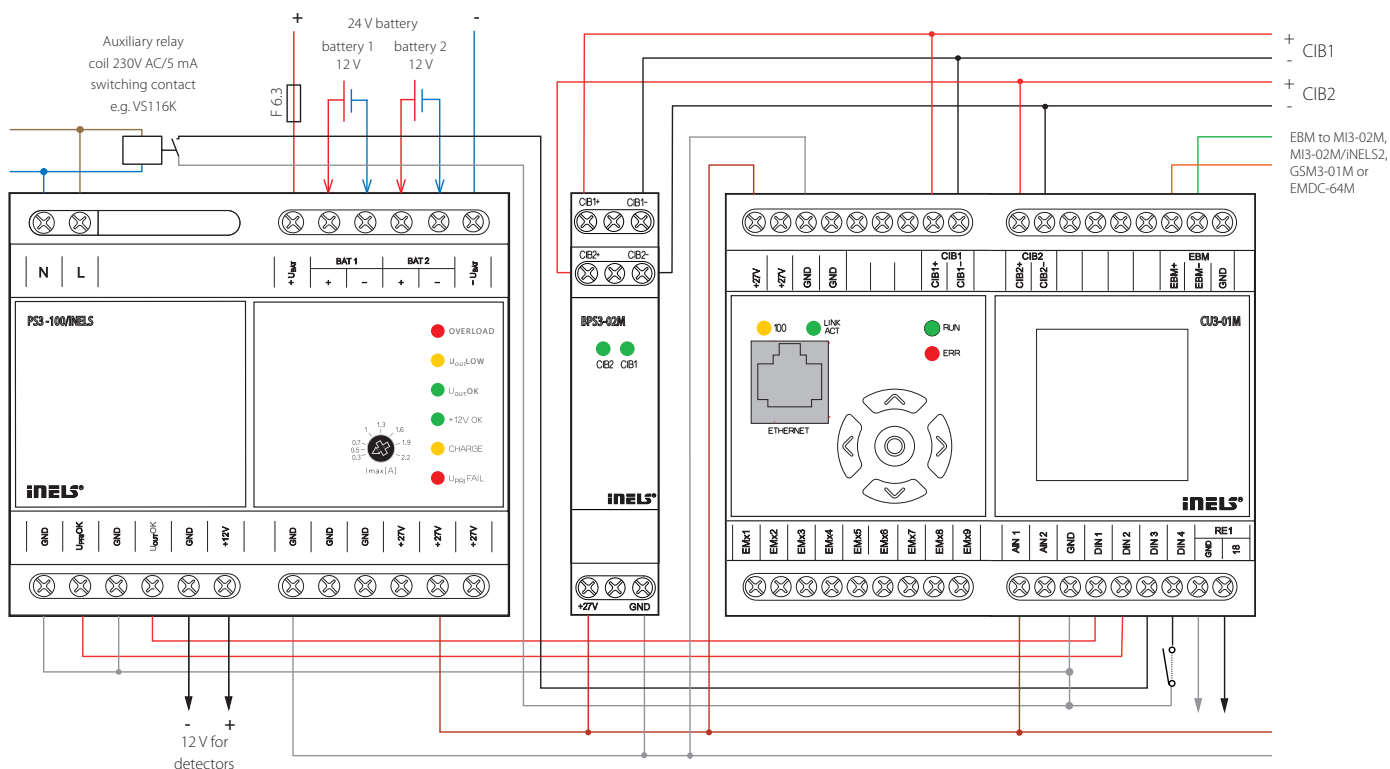
Installation bus CIB:

- Two-wired bus with an arbitrary topology (not only to be as closed circle).
- With its own modulated communications on the DC voltage supply.
- One line of CIB bus allows you to connect up max. 32 units of iNELS3, or iNELS2 if you use external master MI3-02M/iNELS2.
- The current load of one line is max. 1A.
- Maximum length of the bus is approximately 550 m (depends on the voltage drop).
- Recommended cable :
- iNELS BUS Cable - Twisted pair of copper wires with size of AWG20 wire (diameter of 0.812 mm, cross-section of 0.5190 mm²).

System bus EBM:

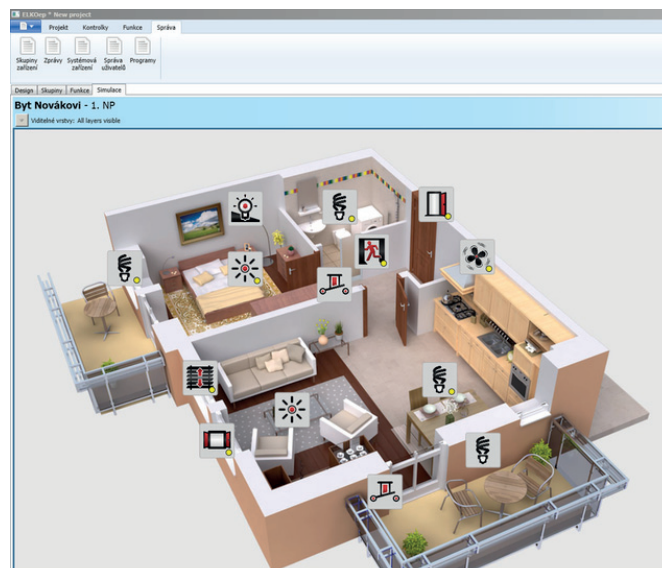
- Used to connect the CU3-01M(02M) central unit with MI3-02M external masters, MI3-02M/iNELS2, GSM communicator GSM3-01M or converter DALI/DMX EMDC-64M.
- EBM has strictly linear topology and wires are connected to terminals EBM + and EBM-, wires can not be interchanged.
- Max. length of the line of bus is 500m.
- The EBM bus has to be terminated at both ends.
- This part adapted to be inserted between terminals is included into central units packages and it is necessary to insert between terminals EBM+ and EBM-.
- Recommended cabling:
- CAT5e UTP and higher, or FTP CAT5e and higher or STP CAT5e and higher.

- The configurations of units and the whole system are done via Ethernet, through configuration software - iNELS3 Designer & Manager (iDM3), which is designed for operating systems Windows7 and Windows8.
- The central unit features two communication protocols:
 - ELKONET - to communicate with iMM and Connection Server or directly with the application iHC.
 - ASCII - communication with third systems and integration with BMS (Building Management System).
- Supported Software:
 - Parameterization, configuration, control and visualization: iNELS3 Designer & Manager (iDM3).
- By means of iDM3, you can update firmware of central units and peripheral units connected by bus.



iNELS3 Designer & Manager

- iNELS3 Designer & Manager (iDM3) is a programming environment, which is designed for creating projects for iNELS BUS System's installations with the CU3-01M(02M) central unit.
- iDM3 allows management to address the requirements of lighting, blinds or shutters, heating, air conditioning to the overall supervision of the installation and alarm reporting.
- Look at our webpage www.inels.com in the section dedicated to System partners where you can download the complete manual and also "iDM3 tutorials" dedicated to solving the specific cases.
- iDM3 provides the following:
 - the possibility of automatic numbering project
 - easy-shifting of units for superior masters
 - visualization of the bus in terms of HW addresses's number
 - visualization of the bus in terms of the current load
 - creating of the floors
 - creating layers in these levels (up to 5 layers)
 - visibility settings / invisibility of the individual layers
 - assignment of the floor plan or only the base color
 - possibility to zoom in on the floor plan
 - the possibility of entering multiple conditions
 - visualization of the connections between the elements or element groups
 - the possibility of simulation functions
 - comprehensive list of individual connections
 - the possibility of breaking down elements into logical groups
 - the possibility of using timers and counters
 - transparent management of users and their roles
 - signaling the status of units.





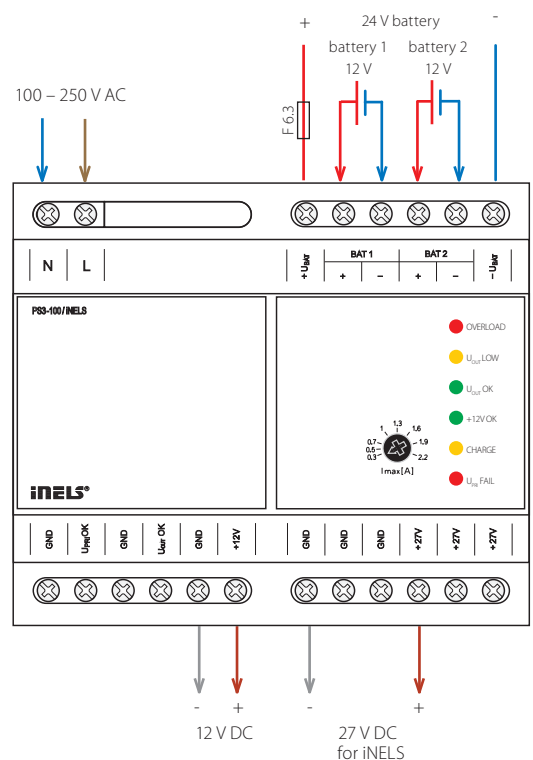
EAN code
PS3-100/iNELS: 8595188131568

Description of device functions

- The device consists of several functional blocks.
- The basic part is 100 W power supply with 2 output voltage levels.
 - Voltage of 27.6 V is used to supply the system iNELS and to recharge the batteries.
 - Voltage of 12.2 V is for power as intrusion detectors (PZTS) or EPS.
 - Both voltages are available without interruption during power AC power supply (UPS function) - assuming they are connected to a backup battery.
- Other parts of the source circuits are battery backup and recharge, which provide switching mode connection, charging and disconnecting the battery.
 - When in the backup mode, the battery is completely discharged, the circuit is immediately switched off to avoid deep discharge. The maximum discharge current is also guarded - when exceeded, the batteries are again disconnected.
 - If the switched source is working (oscillating), and its output voltage are greater than 26.9 V, the backup batters are charged by the current, and the maximum value is set by trimmer on the panel source.
 - When charging the yellow LED CHARGE illuminates. The source first feeds the iNELS system, and the remaining capacity of up to 100 W only recharges the battery.
 - If the output is high, this disconnects the charge (the yellow LED CHARGE switches off).
 - Upon further increasing, the load further decreases the voltage source and the load current also flows from the battery (power supply and battery power to the load together).
 - If the source is disconnected from the AC network (does not oscillate), and you connect batteries now, the batters remain disconnected and power outputs are without power. To activate, the source must be connected to the power supply.
- The last part of the unit are signaling circuits and status outputs.
 - STATUS outputs (see technical data) are equipped with current limiting, so they can switch signaling components directly without external resistors (e.g. LED, optocouplers or relay coil).
 - The LED signaling function is given in the table of technical parameters and illustratively described in seven case studies.

- PS3-100/iNELS is a stabilized switching power supply, with the total power of 100 W.
- Used to supply central units and external master within intelligent electro-installation iNELS.
- Through bus separators from the supply voltage BPS3-01M and BPS3-02M, it supplies supplies CIB bus lines from which iNELS peripheral units are also powered.
- Used in the instrumentation field.
- Fixed output voltage DC 27.6 V and DC 12.2 V, galvanically isolated from the mains.
- Power source of 27 V and 12 V have a common ground terminal GND.
- Electronic short circuit protection, high-capacity and thermal overload, over voltage.
- UPS functions - backup of output 24V and 12V on connected batteries.
- Recharging the batteries from 27 V source.
- Protection battery backup fuse - protection against short circuit and reverse polarity battery.
- Continuously adjustable maximum battery charging current.
- Indication of operating and fault conditions 6 LED diodes on the front panel of the power supply.
- 2 STATUS outputs with open collector for reporting operational status of the source.
- Source supplies power to the priority system iNELS, the remaining power is used for rechargeable batteries.
- When the battery is fully discharged, the battery is automatically disconnected from the load.
- PS3-100/iNELS in 6-MODULE version is designed for mounting into a switchboard, on DIN rail EN60715.

Example of connection



TECHNICAL PARAMETERS

AC INPUT

Power supply:	100 - 250 V AC/ 50 - 60 Hz
Power load (apparent / active):	max. 13 VA/ 2 W
Power consumption at max. load (apparent / active):	max. 180 VA/ 111 W
Protection:	- safety fuse T3.15 A inside the unit - electronic protection (short circuit current and thermal overload)

DC INPUT

Power supply:	- DC 24 V (two 12V batteries in series)
Protection:	-safety fuse F6.3 A external -electronic protection against current overload
Terminals for connecting the battery:	- each battery separately - separately routed extreme terminals (24)
Automatic disconnect the battery:	- for the battery voltage <21 V - when exceeding discharge current 4.2 A

OUTPUTS

Output voltage 1:	27.6 V
Max. capacity:	3.6 A
Output voltage 2:	12.2 V
Max. capacity:	0.35 A
The overall efficiency of resources:	about 88%
Time delay after connecting to the AC network:	up to 1 s
Max. charging current:	adjustable from 0.2 to 2.2 A

LED SIGNALIZATION

Output voltage 27 V OK ($U_{OUT} > 24 V$):	green LED $U_{OUT} OK$
Switch. power supply does not work (does not oscillate)	flashing red LED $U_{PRI} FAIL$ (if a battery is connected)
Low output voltage ($21 V < U_{OUT} < 24V$):	yellow LED $U_{OUT} LOW$
Output voltage 12 V OK ($U > 11 V$):	green LED + 12 V OK
Overloading the power supply ($U_{OUT} < 21 V$):	red LED OVERLOAD
Charging the battery (charging current > 50mA):	yellow LED CHARGE

OUTPUT STATUS

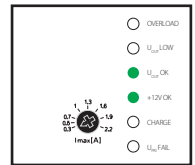
STATUS output 1 ($U_{PRI} OK$):	closed, when power supply works (not blinking LED $U_{PRI} FAIL$)
STATUS output 2 ($U_{OUT} OK$):	closed, if $U_{OUT} > 21 V$ (not lit red LED OVERLOAD)
Output type:	open collector current limited
Max. connectable voltage:	50 V DC
Max. current output:	50 mA
Voltage drop on the switch max:	at 10 mA ... 140 mV at 30 mA ... 400 mV at 50 mA ... 700 mV

OTHER DATA

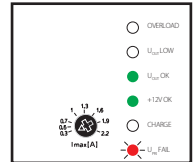
Electric strength AC input - output:	4 kV
The connection terminals:	row
Cable size (mm ²):	max. 1x 2.5, max. 2x 1.5 (with sleeve max. 1x 1.5)
Operating temperature:	-20 °C to +55 °C
Storage Temperature:	-30 °C to +70 °C
Working humidity:	20 to 90 % RH
Cover:	IP20 device, IP40 mounting in the switchboard
Overvoltage category:	III.
Degree of pollution:	2
Working position:	arbitrary, vertical is optimum
Installation:	on the DIN rail EN60715
Execution:	6-MODULE
Dimensions:	90 x 105 x 65 mm
Weight:	392 g
Related standards:	General: EN61204 Safety: EN61204-7 EMC: EN61204-3

Indication LED

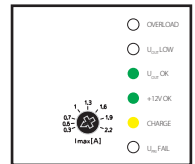
switching power supply works correctly
output voltage 27V is correct ($U_{OUT}>24V$)
output voltage 12V is correct
batteries are not recharged



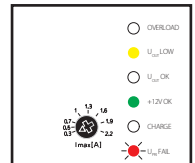
switching power supply not working correctly -
UPS mode
output voltage 27V is correct ($U_{OUT}>24V$)
output voltage 12V is correct
batteries are not recharged



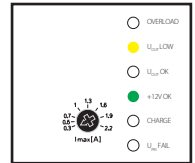
switching power supply works correctly
output voltage 27V is correct ($U_{OUT}>24V$)
output voltage 12V is correct
batteries are recharged



switching power supply not working correctly -
UPS mode
low output voltage 27V ($21V < U_{OUT} < 24V$)
output voltage 12V is correct
batteries are not recharged



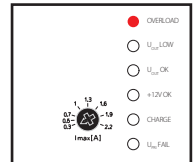
switching power supply works correctly
low output voltage 27V ($21V < U_{OUT} < 24V$)
output voltage 12V is correct
batteries are not recharged



switching power supply works correctly
output voltage 27V is correct ($U_{OUT}>24V$)
low output voltage 12V (short-circuit, overload)
batteries are recharged



switching power supply is overload
low output voltage 27V ($U_{OUT}<21V$)
low output voltage 12V
batteries are not recharged





EAN code
 MI3-02M: 8595188132411
 MI3-02M/iNELS2: 8595188150637

TECHNICAL PARAMETERS

OUTPUTS

Number of connected units:	max. 64 (2x32)
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COMMUNICATION

Installation BUS:	2x CIB for connection of peripheral units
Data BUS:	for communication with central unit
Unit status indication:	green LED
Bus fault indication:	red LED
Length of BUS CIB wire:	max. 2x550 m
Length of BUS EBM wire:	max. 500 m

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	25 mA (at 27V DC)

OPERATING CONDITIONS

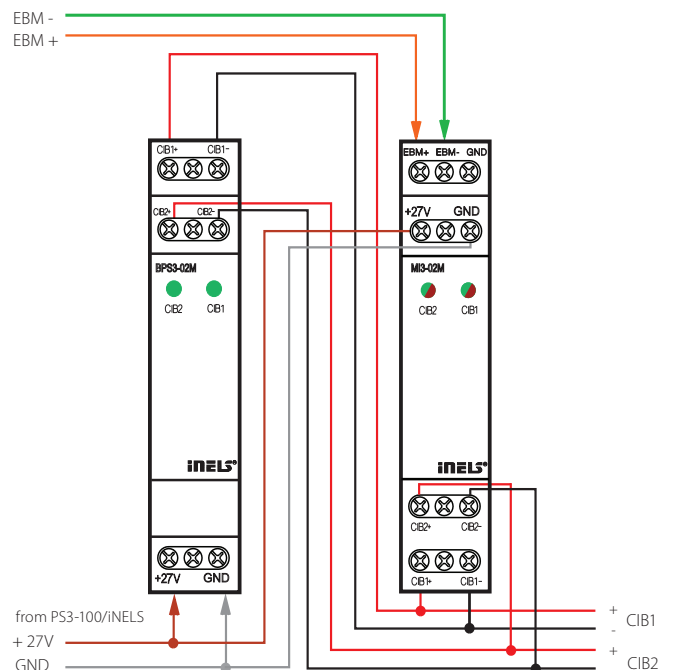
Operating temperature:	-20 to +55 °C
Storage temperature:	-25 to +70 °C
Humidity:	max. 80 %
Protection degree:	IP20 device, IP40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	in a switchboard on DIN rail EN 60715
Design:	1-MODULE
Terminal:	max. 2.5 mm ²

DIMENSIONS AND WEIGHT

Dimensions:	90 x 17.6 x 64 mm
Weight:	58 g

- External master MI3-02M provides expansion of the amount of units iNELS3 connected to the central unit CU3-01M or CU3-02M of two other lines of CIB bus (i.e. about 2x32 peripheral units).
- If you require the use of a central unit CU3-01 (02M) in combination with the iNELS2 units, all the units must be connected to the bus CIB lines, which are based on an external master MI3-02M/iNELS2.
- Through the system bus EBM, it is possible to connect to one central unit up to 8 external masters MI3-02M or MI3-02M/iNELS2.
- Combining central unit CU3-01M (02M) and 8 external masters MI3-02M we can reach maximum capacity of iNELS system up to 576 peripheral units.
- If you require an extended system then it is possible to use communication of up to 8 central units with iMM or Connection server using ELKONET protocol, eventually the integration of more central units into BMS via ASCII protocol.
- MI3-02M and MI3-02M/iNELS2 have marked on the front panel of the unique hardware address. This address belongs to the line CIB1. Hardware address of CIB2 line is always one value higher than for CIB1.
- MI3 units are supplied from PS3-100/iNELS.
- To power the lines CIB, it is necessary to use a BUS separator BPS2-02M or BPS2-01M (supply only one line). In case of using MI3-02M/iNELS2 is used BPS2-02M or BPS2-01M.
- Status signaling of each bus (operation, fault) is indicated by two-color LEDs on the front panel of the module.
- The last MI2-02M connected to the EBM bus must be closed with a 120 Ω termination resistor. This part adapted to be inserted between terminals is included into central units packages and it is necessary to insert between terminals EBM+ and EBM-.
- MI3-02M, MI3-02M/iNELS2 in 1-MODULE version is designed for mounting into a switchboard, on DIN rail EN60715.

Example of connection





EAN code
BPS3-01M: 8595188132442

EAN code
BPS3-02M: 8595188132435

TECHNICAL PARAMETERS

OUTPUTS	BPS3-01M	BPS3-02M
Maximum capacity:	3 A	2x 1 A

COMMUNICATION	BPS3-01M	BPS3-02M
Installation BUS:	1x CIB	2x CIB

POWER SUPPLY	BPS3-01M	BPS3-02M
Supply voltage/ tolerance:	27 V DC, -20 / +10 %	
Rated current:	max. 8 mA	max. 15 mA
Status indication voltage on terminals:	1x green LED	2x green LED

CONNECTION	BPS3-01M	BPS3-02M
Terminals:	max. 2.5 mm ² /1.5 mm ² with sleeve	

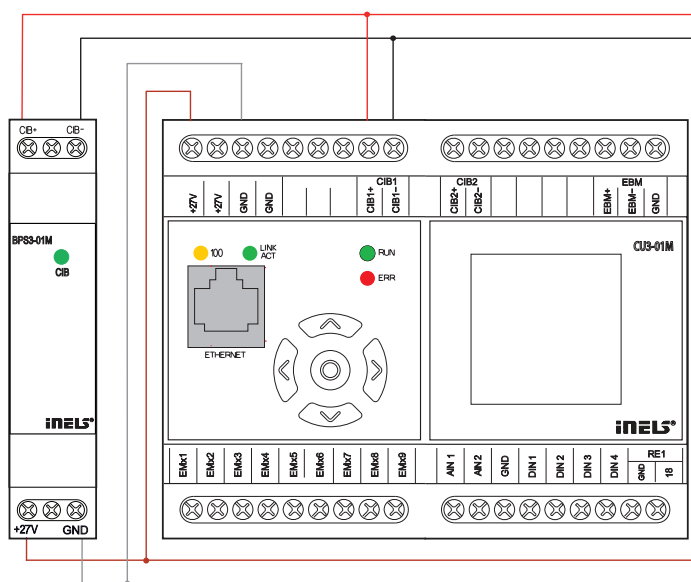
OPERATING CONDITIONS	BPS3-01M	BPS3-02M
Operating temperature:	-20 to +55 °C	
Storage temperature:	-30 to +70 °C	
Protection degree:	IP20 device, IP40 mouting in to the switchboard	
Overvoltage category:	II.	
Pollution degree:	2	
Operating position:	any	
Installation:	in a switchboard on DIN rail EN 60715	
Design:	1-MODULE	

DIMENSIONS AND WEIGHT	BPS3-01M	BPS3-02M
Dimensions:	90 x 17.6 x 64 mm	
Weight:	70 g	85 g

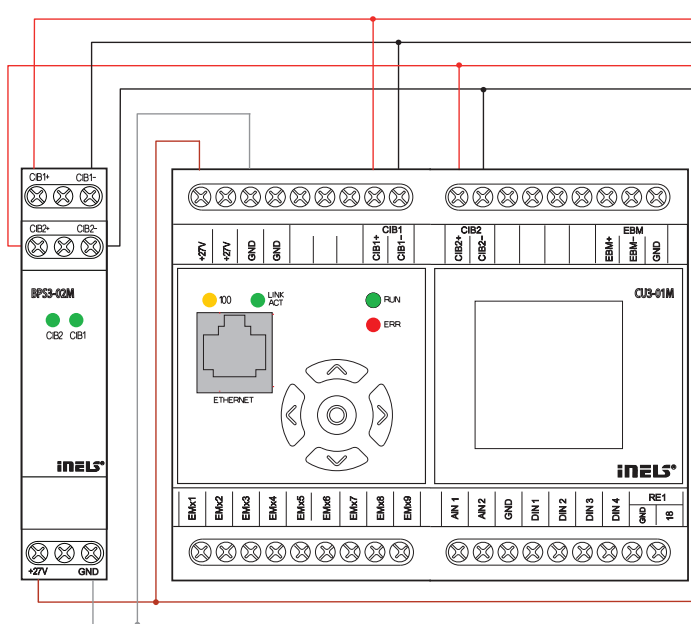
- Units BPS3-01M and BPS3-02M serve for impedance separation of CIB from supply voltage power.
- Bus separator BPS3 or BPS3-01M-02M is required for each type CU3-01(02M) central unit and external master MI3-02M.
- BPS3-01M allows you to connect one bus CIB with max. load 3 A (for short part of CIB line within one distribution board).
- BPS3-02M allows you to connect two separate CIB1 and CIB2 with max. load 1 A for each line.
- Outputs are equipped with overcurrent and overvoltage protection.
- Indication of output voltage outputs CIB LED.
- BPS3-01M and BPS3-02M in 1-MODULE version is designed for mounting into a switchboard, on DIN rail EN60715.

Example of connection

BPS3-01M



BPS3-02M





EAN code
 GSM3-01M: 8595188132428
 External antenna AN-E: 859518819121

- It serves for communication with the iNELS system via commands sent in short SMS messages from mobile phone GSM.
- With the GSM3-01M and a smartphone, it is possible by SMS message or a call to control the iNELS system or obtain information on its status and current events.
- By means of the software iDM3, you can use up to 8 incoming calls, 8 outgoing calls, 32 incoming SMS messages and 32 outgoing SMS messages.
- For SMS messaging, the message length is limited to 32 characters, and for each message, you can set up to eight telephone numbers. In total, it is possible in iDM3 to use up to 512 telephone numbers.
- One telephone number can be set for each incoming and outgoing call.
- The maximum length of an incoming call is around 30s, and then the GSM3-01M hangs up. The user can set the length of outgoing calls in the software iDM3.
- GSM3-01M can be used for informing users about any system status, e.g. in the event of a fault in some technology or building interference.
- Operating range is 850, 900 as well as 1800, 1900 MHz (quad-band).

- SIM card is inserted into the unit from the front panel.
- The MINI USB connector on the front panel is used for servicing, but configuration of telephone numbers, SMS messages and calls is done from the software iDM3.
- GSM3-01M connects to the central unit CU3-01M(02M) via the EBM system bus (terminals EBM+ and EBM-).
- In case it involves the last unit on the system bus EBM, it is necessary to terminate the wire with a resistor with rated resistance of 120Ω. This part adapted to be inserted between terminals is included into central units packages and it is necessary to insert between terminals EBM+ and EBM-.
- The package includes is an external magnetic antenna (cable 3m, 5db gain), which is connected to the connector RSMA (F) on the front panel.
- GSM3-01M in 3-MODULE version is designed for mounting into a switchboard, on DIN rail EN60715.

TECHNICAL PARAMETERS

COMMUNICATION

Communication interface:	system bus EBM
GSM network (Quad-band):	850/900/1800/1900 MHz
Transmitter output power:	2 W for GSM 900, 1 W for GSM 1800
Number of supported calls:	8 incoming, 8 outgoing
Number of informative SMS:	32 incoming, 32 outgoing
Number of telephone numbers:	up to 512
LED indication - operation state / fault in bus:	LED STATUS
Output for antenna:	SMA connector*

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	250 mA (at 27V DC) / max. 1 A
Supply voltage indication:	green LED Un

CONNECTION

Terminals:	max. 2.5 mm ² /1.5 mm ² with sleeve
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OPERATING CONDITIONS

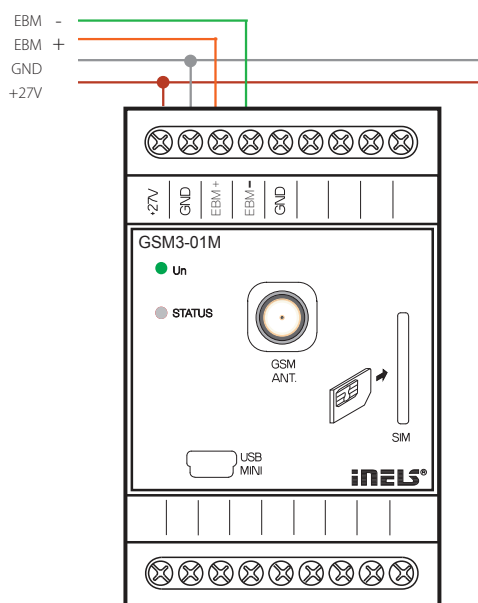
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	20 IP devices, 40 IP with cover in switchboard
Overvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	to DIN rail EN 60715
Design:	3-MODULE

DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	128 g

* Max Tightening Torque for antenna connector is 0.56 Nm.

Example of connection





EAN code
SA3-02M: 8595188132374

- Actuator SA3-02M is designed for switching two various appliance and loads with potentialless contact.
- SA3-02M is a switching actuator containing 2 independent relays with changeover potentialless contacts.
- Maximum load per contact is 16 A/4000 VA/AC1.
- Each of the two output contacts are individually controllable and addressable.
- Both relays are individually decorated input terminals, and therefore can switch various independent potentials.
- The actuator is designed for switching up to two various appliances and loads relay output (potentialless contact).
- Thanks to changeover contacts, it can be used to control one 230 V power (such as blinds, shutters or awnings) with appropriate bridging, the contacts can secure hardware blocking the possibility of simultaneous switching of the phase on both outputs, see example of connection.
- LEDs on the front panel signal the status of each output.
- Contact status of each relay can be changed separately and manually by control buttons on the front panel.
- Switching actuators SA3 are normally supplied in the option AgSnO₂ contact material.
- SA3-02M in 1-MODULE version is designed for mounting into a switchboard, on DIN rail EN60715.

TECHNICAL PARAMETERS

OUTPUTS

Output:	2x changeover 16 A/AC1
Switching voltage:	250 V AC1, 24 V DC
Switching load:	4000 VA/AC1, 384 W/DC
Surge current:	30 A; max. 4 s. at duty cycle 10%
Output relays separated from all internal circuits:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolation between relay inputs RE1 and RE2:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolates. voltage open relay contact:	1 kV
Minimal switching current:	100 mA
Switching frequency/no load:	1200 min ⁻¹
Switching frequency/rated load:	6 min ⁻¹
Mechanical lifetime:	3x 10 ⁷
Electrical lifetime AC1:	0.7x 10 ⁵
Outputs indication:	2x yellow LED

COMMUNICATION

Installation BUS:	CIB
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POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	50 mA (at 27V DC), from CIB BUS
Status indication unit:	green LED RUN

CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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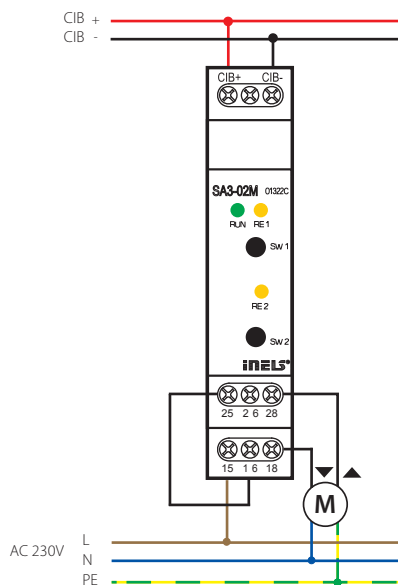
OPERATING CONDITIONS

Air humidity:	max. 80 %
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20 device, IP 40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	switchboard on DIN rail EN 60715
Design:	1-MODUL

DIMENSIONS AND WEIGHT

Dimensions:	90 x 17.6 x 64 mm
Weight:	82 g

Example of connection





EAN code
SA3-04M: 8595188132381

TECHNICAL PARAMETERS

OUTPUTS

Output:	4x changeover 16 A/AC1
Switching voltage:	250 V AC1, 24 V DC
Switching output:	4000 VA/AC1, 384 W/DC
Surge current:	30 A; max. 4 s. at 10% duty cycle
Output relays separated from all internal circuits:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolation between relay inputs RE1-3 and RE4:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolation between relay inputs RE1-3:	basic insulated. (Cat. II surges by EN 60664-1)
Isolates. voltage open relay contact:	1 kV
Min. switched current:	100 mA
Switching frequency /no load:	1200 min ⁻¹
Switching frequency/rated load:	6 min ⁻¹
Mechanical life:	3x 10 ⁷
Electrical life AC1:	0.7x 10 ⁵
Output indication:	4x yellow LED

COMMUNICATION

Installation BUS:	CIB
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POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	70 mA (at 27V DC), from CIB BUS
Status indication unit:	green LED RUN

CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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OPERATING CONDITIONS

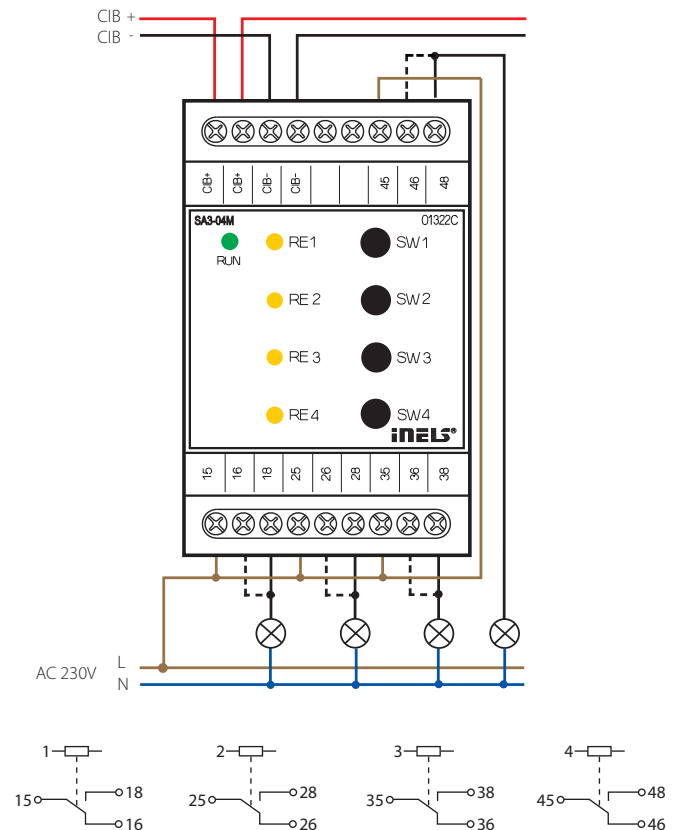
Air humidity:	max. 80 %
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20 device, IP 40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	switchboard on DIN rail EN 60715
Design:	3-MODULE

DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	161 g

- It serves for switching of various appliances and loads with potentialless contact.
- SA3-04M is a switching actuator containing 4 independent relays with changeover potentialless contacts.
- Maximum load per contact is 16 A/4000 VA/AC1.
- Each of the four output contacts are individually controllable and addressable.
- All four relays are individually decorated input terminals, and therefore can switch various independent potentials.
- The actuator is designed for switching to four various appliances and loads relay output (potential free contact).
- Thanks to changeover contacts, it can be used to control up to two drives 230V power (such as blinds, shutters or awnings) with appropriate bridging, the contacts can secure hardware blocking the possibility of simultaneous switching of the phase on both outputs, see example of connection.
- LEDs on the front panel signal the status of each output.
- Contact status of each relay can be changed separately and manually by control buttons on a front panel.
- Switching actuators SA3 is normally supplied in the option AgSnO₂ contact material.
- SA3-04M in 3-MODULE version is designed for mounting into a switchboard, on DIN rail EN60715.

Example of connection





EAN code
SA3-06M: 8595188132879

- The actuator is designed for switching up to six various appliances and loads with potentialless contact.
- SA3-06M is a switching actuator contains 6 independent relays with changeover potentialless contacts.
- Maximum load per contact is 8 A/2000 VA/AC1.
- Each of six output contacts are individually controllable and addressable.
- The relays are divided into two groups, the group of four relays on the bottom terminal switches the common potential, a pair of relays on top of the terminal switches second common potential.
- The actuator is suitable for operating discontinuously controlled thermo drives in the distributor underfloor heating.
- LEDs on the front panel signal the status of each output.
- Contact status of each relay can be changed separately and manually by control buttons on a front panel.
- SA3-06M is normally supplied in the option AgSnO₂ contact material.
- SA3-06M in 3-MODULE version is designed for mounting into a switchboard/DIN rail EN60715.

TECHNICAL PARAMETERS

OUTPUTS

Output:	6x changeover 8 A/AC1
Switching voltage:	250 V AC1, 24 V DC
Switching output:	2000 VA/AC1, 192 W/DC
Surge current:	10 A
Output relays separated from all internal circuits:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolation between bus inputs COM1 and COM2:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolation between individual relay outputs:	basic insulated. (Cat. II surges by EN 60664-1)
Isolates. voltage open relay contact:	1 kV
Max. current terminals COM1 and COM2:	16 A
Min. switched current:	100 mA/ 5V DC
Switching frequency /no load:	300 min ⁻¹
Switching frequency/rated load:	15 min ⁻¹
Mechanical life:	2x 10 ⁷
Electrical life AC1:	5x 10 ⁴
Output indication:	6x yellow LED

COMMUNICATION

Installation BUS:	CIB
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POWER SUPPLY

Supply voltage / tolerance:	27V DC, -20 / +10 %
Rated current:	60 mA (at 27V DC), from CIB BUS
Status indication unit:	green LED RUN

CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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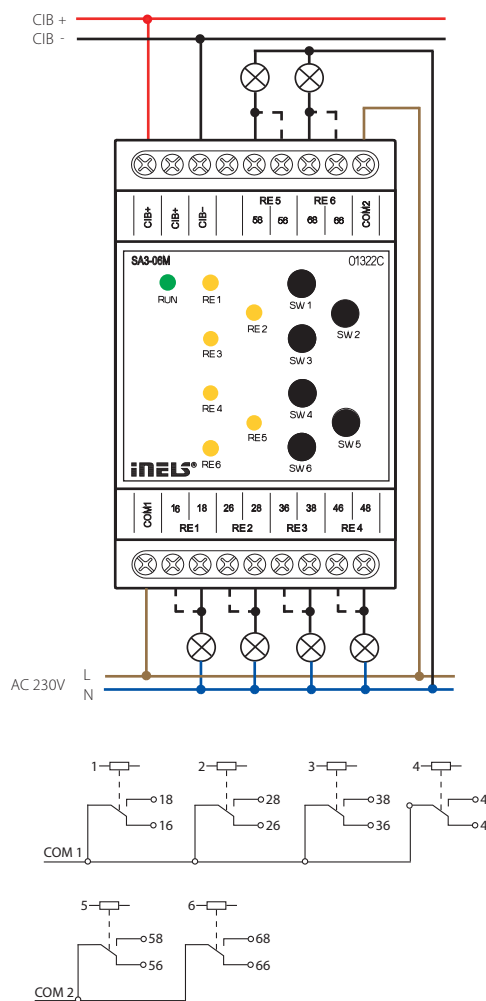
OPERATING CONDITIONS

Air humidity:	max. 80%
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP20 device, IP40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	switchboard on DIN rail EN 60715
Design:	3-MODULE

DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	157 g

Example of connection





EAN code

SA3-012M: 8595188132466

SA3-012M/120V: 8595188133029

TECHNICAL PARAMETERS

OUTPUTS

Output:	12x NO 8 A/AC1
Switched voltage:	250 V AC1, 24 V DC
Switched output:	2000 VA/AC1, 192 W/DC
Peak current:	10 A
Output relays separated from all internal circuits:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolation between bus inputs COM1, COM2 and COM3:	reinforced Insulation (Cat. II surges by EN 60664-1)
Isolates. voltage open relay contact:	1 kV
Max. current of one common terminal:	16 A
Minimal switched current:	100 mA / 10 V DC
Switching frequency without load:	300 min ⁻¹
Switching frequency with rated load:	15 min ⁻¹
Mechanical life:	1x 10 ⁷
Electrical life AC1:	1x 10 ⁵
Output indication:	12 x yellow LED

COMMUNICATION

Installation BUS:	CIB
The installation bus CIB is separated from all internal circuits:	reinforced Insulation (Cat. II surges by EN 60664-1)
Status indication unit:	green LED RUN

POWER SUPPLY

Voltage of CIB / tolerance / nominal current:	27V DC, -20 / +10 %, 5mA
SA3-012M/120V	
Supply voltage of power section (relay) tolerance / nominal current:	AC 120V (60 Hz), -15 / +10 %, 40 mA
SA3-012M	
Supply voltage of power section (relay) tolerance / nominal current:	AC 230V (50 Hz), -15 / +10 %, 20 mA

CONNECTION

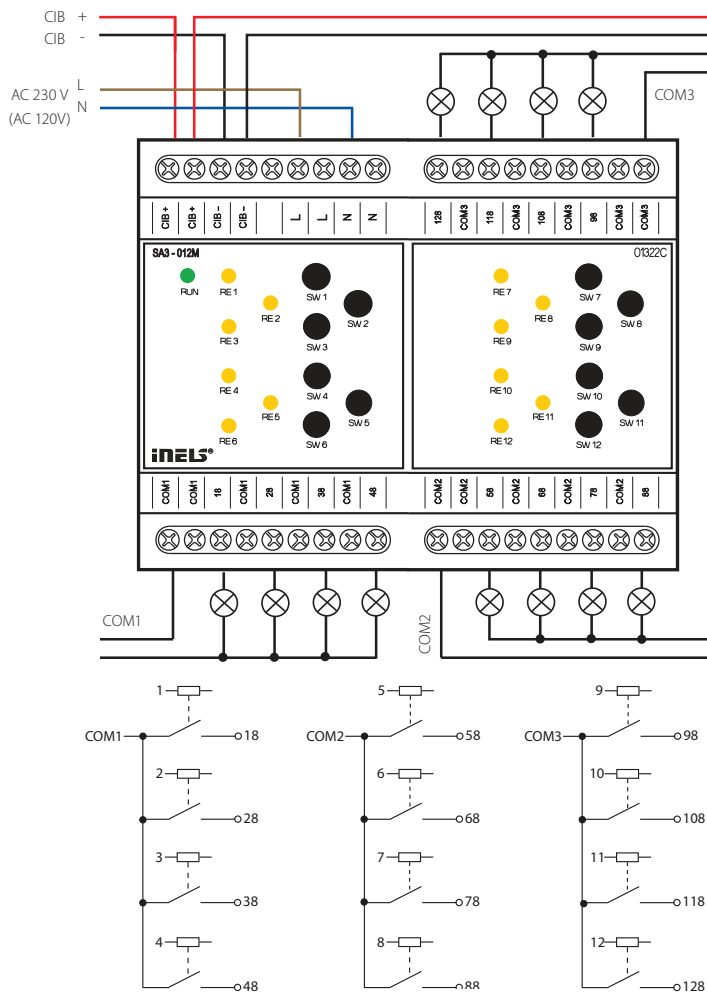
Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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OPERATING CONDITIONS

Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20 device, IP 40 mounting in the switchboard
Overtoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	switchboard on DIN rail EN 60715
Design:	6-MODULE
Dimensions:	90 x 105 x 65 mm
Weight:	307 g

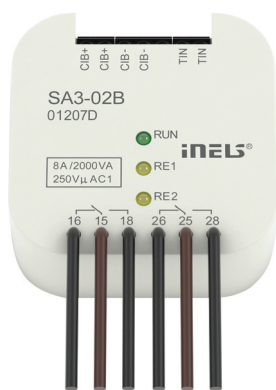
- The actuator is designed for switching to twelve various appliances and loads with potentialless contact.
- SA3-012M is a switching actuator containing 12 independent relays with NO potentialless contacts, with the fact that switches the same potential.
- Maximal loadability of contacts is 8 A/2000 VA/AC1.
- Each of the twelve output contacts are individually controllable and addressable.
- Actuator SA3-012M is powered by an AC voltage 230V. The unit SA3-012M/120V is powered by AC voltage 120V AC.
- CIB is galvanically separated from the internal circuits of unit.
- LED on front panel signalizes state of each output.
- Contact status of each relay can be changed separately and manually by control buttons on a front panel.
- SA3-012M is normally supplied in the option AgSnO₂ contact material.
- SA3-012M in design 6-MODULE is designed to be mounted into a switchboard, onto DIN rail EN60715.

Example of connection





EAN code
SA3-01B: 8595188132350



EAN code
SA3-02B: 8595188132367

- Actuators are designed for switching of one (SA3-01B), respectively two (SA3-02B) of various appliances and loads relay output (potentialless contact).
- SA3-01B contains 1 relay with switching potentialless contact with max. load 16 A/4000 VA/AC1.
- SA3-02B contains 2 relays with switching potentialless contacts with max. load 8 A/2000 VA/AC1.
- Output contacts are separately controllable and addressable.
- Both relay actuator SA3-02B are individually decorated input terminals, and therefore can switch various independent potentials.
- Thanks to changeover contacts, the SA3-02B actuator can be used to control a 230 V drive (such as blinds, shutters or awnings), whereas by proper bridging of contacts, it is possible to secure locking hardware options while switching on phase two outputs.
- Actuators are equipped with a temperature input for connecting an external two-wire temperature sensor TC / TZ (see accessories).
- LED on front panel signalizes state of each output.
- SA3 is normally supplied in the option AgSnO₂ contact material.
- SA3-01B, SA3-02B are designed for mounting into the installation box

TECHNICAL PARAMETERS

INPUTS

	SA3-01B	SA3-02B
Temperature measuring:	Yes, input for external thermo sensor TC, TZ	
Scope and accuracy of tem. meas.:	-20 to +120°C; 0.5°C from the range	

OUTPUTS

	SA3-01B	SA3-02B
Output:	1x NO 16 A/AC1	2x NC 8 A/AC1
Switching voltage:	250 V AC1, 24 V DC	
Switched load:	4000 VA/AC1, 384 W/DC	2000 VA/AC1, 192 W/DC
Surge current:	30 A; max. 4 s. when repeating 10%	10A
Output relays separated from all internal circuits:	reinforced Insulation (Cat. II surges by EN 60664-1)	
Insulation voltage between relay outputs RE1-RE2:	x	basic Isolation (Cat. II surges by EN 60664-1)
Minimal switching current:	100 mA / 5 V	
Switching frequency/no load:	1200 min ⁻¹	300 min ⁻¹
Switching frequency/rated load:	6 min ⁻¹	15 min ⁻¹
Mechanical lifetime:	3x 10 ⁷	1x 10 ⁷
Electrical lifetime for AC1:	0.7x 10 ⁵	1x 10 ⁵
Output indication:	yellow LED	2x yellow LED

COMMUNICATION

Installation BUS:	CIB
-------------------	-----

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %	
Rated current:	30 mA (at 27V DC)	50 mA (at 27V DC)
Status indication unit:	green LED RUN	

CONNECTION

Data terminals:	terminal, 0.5 - 1 mm ²
Power outputs:	2x conduct. CY, Ø 2.5 mm ² 6x conduct. CY, Ø 0.75 mm ²

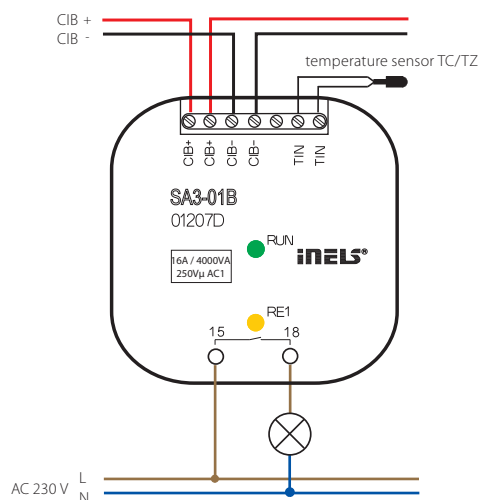
OPERATING CONDITIONS

Operating temperature:	-20 to +55 °C
Storage temperature:	-30 to +70 °C
Protection degree:	IP 30
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	into installation box

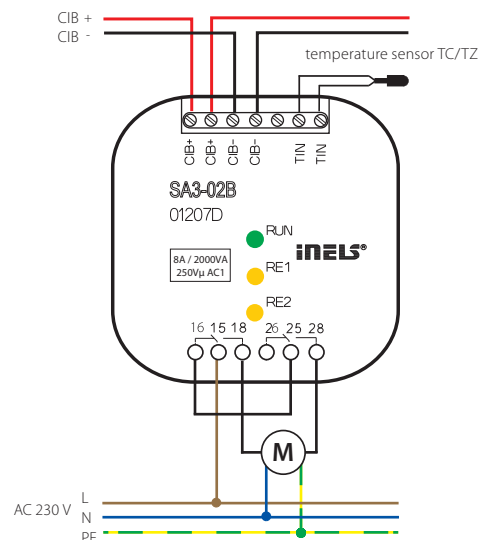
DIMENSIONS AND WEIGHT

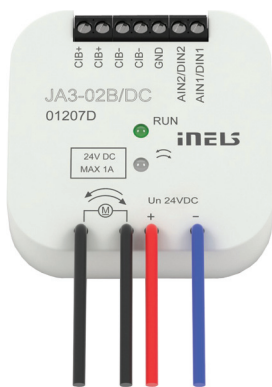
Dimensions:	49 x 49 x 21 mm
Weight:	50 g 45 g

Example of connection SA3-01B



Example of connection SA3-02B





EAN code
JA3-02B/DC: 8595188132718

TECHNICAL PARAMETERS

INPUTS

Inputs:	2x AIN/DIN
Resolution:	bit 10
Ext. temperature sensor:	the connection between AIN1/DIN1 and AIN2/DIN2
Type ext. sensor:	TC/TZ
Temperature measurement range:	-20°C to +120°C
Temperature measurement accuracy:	0.5°C from range

OUTPUTS

Insulative voltage between outputs and internal circuits:	3.75 kV, SELV by EN 60950
Rated current:	0.85 A*
Peak current:	1.5 A / < 3s
Switched voltage:	12-24 V DC
Output indication UP, (↗):	red (orange) LED
Output indication DOWN, (↘):	green LED

COMMUNICATION

Installation BUS:	CIB
-------------------	-----

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	60mA (at 27V DC), from CIB BUS
Status indication unit:	green LED RUN

CONNECTION

Data terminals:	terminal 0.5 - 1 mm ²
Power outputs:	4x conductor CY 0.75 mm ²

OPERATING CONDITIONS

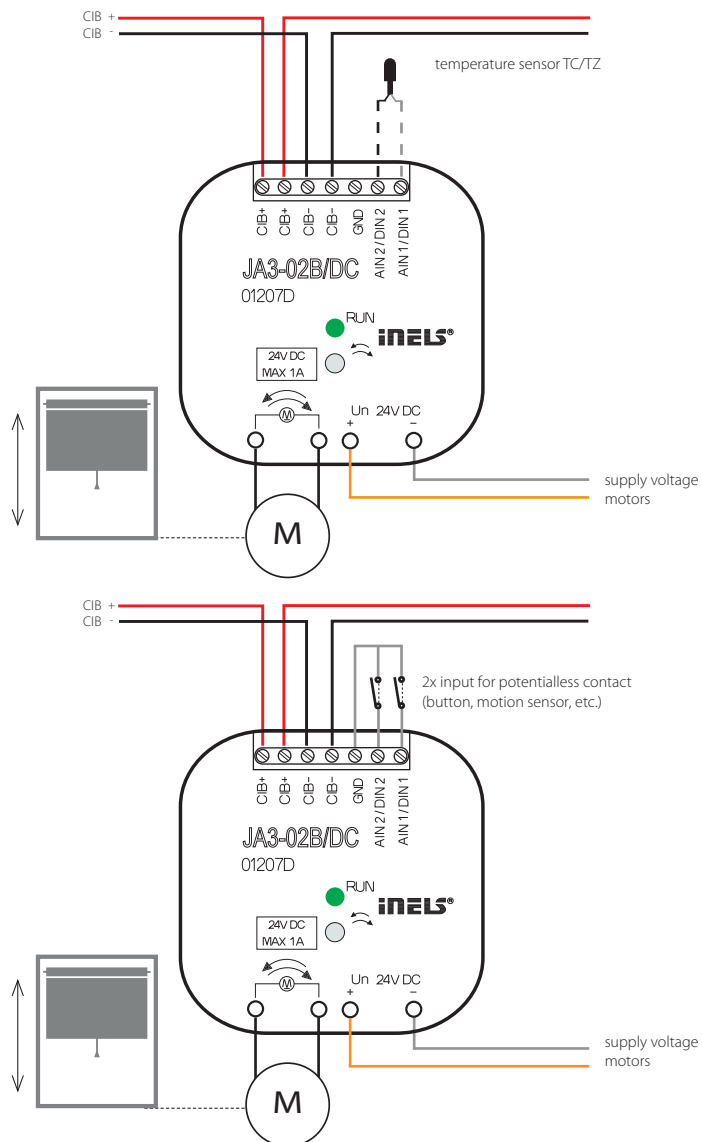
Operating temperature:	-20 to +50°C
Storage temperature:	-30 to +70°C
Protection degree:	IP30
Control device purpose:	operative control device
Control device construction:	individual control device
Characteristics of automatic operation:	1.B.E
Heat and fire resistance category:	FR-0
Anti-shock category (immunity):	class 2
Rated impulse voltage:	2.5 kV
Oversvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	into an installation box

DIMENSIONS AND WEIGHT

Dimensions:	49 x 49 x 13 mm
Weight:	32 g

- JA3-02B/DC actuator serves to control blinds, shutters, garage doors, entrance gates, etc.
- Operates electrical motors, which are controlled in 2 directions and have a built-in limit switch.
- JA3-02B/DC controls electric drives with supply voltages up to 24 V DC, where the direction of rotation of the driver is controlled by changing the voltage polarity of the motor.
- The unit is equipped with thermal and overcurrent overload protection outputs.
- Status of units is indicated by green LED RUN on the front panel:
 - with the supply voltage connected (through CIB) and the unit is not controlled by bus CIB, LED RUN shines.
 - with the supply voltage connected (through CIB) and the unit is controlled by bus CIB, LED RUN flashes.
- Status of output contacts UP/DOWN (↗/↘):
 - while contact UP (↗) is switched, red LED shines (orange).
 - while contact DOWN (↘) is switched, green LED shines.
- The unit is also equipped with two analog digital inputs (AIN/DIN), which can be used to connect two potential free contacts (e.g. to connect double button for local control) or a single external temperature sensor TC/TZ (see accessories).
- JA3-02B/DC is designed for mounting into an installation box.

Example of connection



* Maximal operation time of outputs with rated current 0.85 A is 10 minutes...after that the output heating protection activates. The lower the current, the longer duration of protection.



EAN code
 DA3-22M: 8595188132626
 DA3-22M/120V: 8595188133036

- DA3-22M is a universal dimming 2-fold actuator enabling control of brightness intensity of dimmable light sources of the type ESL, LED and RLC with power supply 230V.
- DA3-22M has two MOSFET controlled outputs 230V AC, maximum load is 2x 400 VA.
- Option of connecting an external temperature sensor.
- Each output channel is independently controllable and addressable.
- Type of light source is set by a switch on the front panel.
- By setting the min. brightness potentiometer on the front panel, flashing of different types of light sources is eliminated.
- DA3-22M is equipped with two inputs 230 V AC, which can be controlled by mechanical switches (buttons, relays). Inputs are galvanically connected to potential L, which is permanently at the terminals IN1 and IN2.
- Buttons on the front panel, you can manually switch on or off the corresponding output.
- Electronic overcurrent and thermal protection - switch off output in case of overload short circuit and overheating.
- During installation, it is necessary to leave on each side of the actuator at least half the module space for better cooling.
- DA3-22M in 3-MODULE version is designed for mounting into a switchboard on DIN rail EN60715.

TECHNICAL PARAMETERS

INPUTS

Input:	⚠ 2x inputs, switching potential L*
Temperature measuring:	⚠ YES, input for external thermo sensor TC/TZ
Scope and accuracy of temp. measurement:	-20 to +120°C; 0.5°C from the range
Number of control buttons:	2x buttons, 4x potentiometers on front panel

OUTPUTS

Output:	2 contactless outputs, 2x MOSFET
Load type:	resistive, inductive, capacitive**, LED, ESL
Isolation bus CIB separated from all internal circuits:	reinforced insulation (Cat. II surges by EN 60664-1)
Isolation voltage between particular power:	max. 500 V AC
Minimal controlled load:	10 VA
Maximal controlled load:	DA3-22M (230V): 400 VA for each channel DA3-22M/120V: 200 VA for each channel
Output indication ON/OFF:	2x yellow LED
Device protection:	- thermal - short-term overload - long-term overload

COMMUNICATION

Installation BUS:	CIB
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POWER SUPPLY

Supply voltage by CIB / tolerance:	27 V DC, -20 / +10 %
Rated current:	5 mA (at 27V DC), from CIB BUS
Status indication unit:	green LED RUN
DA3-22M	
Supply voltage for power section/ tolerance:	AC 230V (50Hz), -15 / +10 %
DA3-22M/120V	
Supply voltage for power section/ tolerance:	AC 120V (60Hz), -15 / +10 %

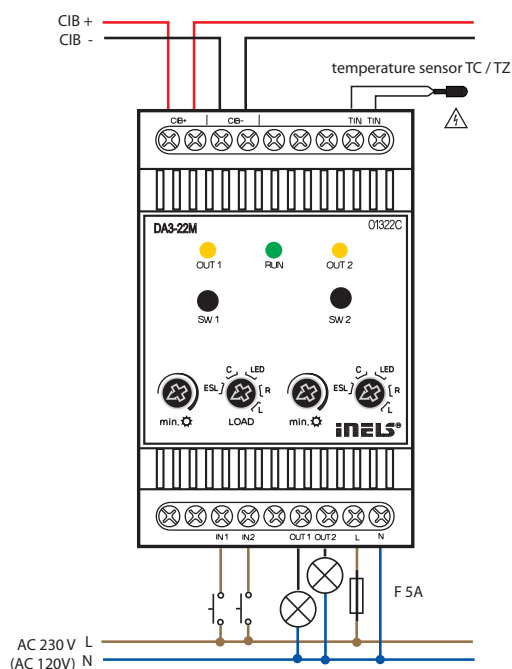
CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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OPERATING CONDITIONS

Air humidity:	max. 80 %
Operating temperature:	-20 to +35 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20 device, IP 40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operating position:	vertical
Installation:	switchboard on DIN rail EN 60715
Design:	3-MODULE
Dimensions:	90 x 52 x 65 mm
Weight:	170 g

Example of connection



Types of connectable loads

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

* The inputs are not galvanically isolated from the supply voltage.
 ** Attention: It is not allowed to connect loads of inductive and capacitive character, at the same time.
 ⚠ The temperature sensor input is at the potential of the network supply voltage.



EAN code
LBC3-02M: 8595188132688

- LBC3-02M is an analog two-channel actuator designed to control dimmable ballasts of fluorescent lamps or other light sources controlled by signal 0(1) - 10 V DC.
- In the iDM3, it is possible to set the output mode 0(1) - 10 V DC.
- During analog voltage output (0)1-10 V DC control, relay contact automatically switches power supply to light ballast (0% = relay OFF, 1-100% = relay ON)
- LBC3-02M contains 2 independent analog voltage outputs (0)1-10 V DC and their dependents 2 relays with potential-free contact.
- Maximum contacts load 16 A/4000 VA/AC1.
- Each of two channels is separately controllable and addressable.
- LEDs on front panel signals status of each channel.
- With control buttons on the front panel, it is possible to change the status of each channel separately.
- LBC3-02M in 3-MODULE version is designed for mounting into a switchboard/ DIN rail EN60715.

TECHNICAL PARAMETERS

INPUTS

Number of control buttons:	2 buttons on the front panel
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OUTPUTS

Output:	2x 0(1)-10 V/10 mA
	2x changeover 16 A/AC1
Switching voltage:	250 V AC1, 24 V DC
Switching capacity:	4000 VA/AC1, 384 W/DC
Peak current:	30 A; max. 4 s. at duty cycle 10%
Insulation voltage between individual relay outputs RE1aRE2 and internal circuits:	4 kV reinforced Insulation (Cat. II surges by EN 60664-1)
Isolates. voltage open relay contact:	1 kV
Minimal switched current:	100 mA
Frequency of switching/no load:	1200 min ⁻¹
Frequency of switching/rat. load:	6 min ⁻¹
Mechanical life:	3x 10 ⁷
Electrical life AC1:	0.7x 10 ⁵
Output indication:	2x yellow LED

COMMUNICATION

Installation BUS:	CIB
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POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	60 mA (at 27 V DC), from CIB BUS
Status indication unit:	green LED RUN

CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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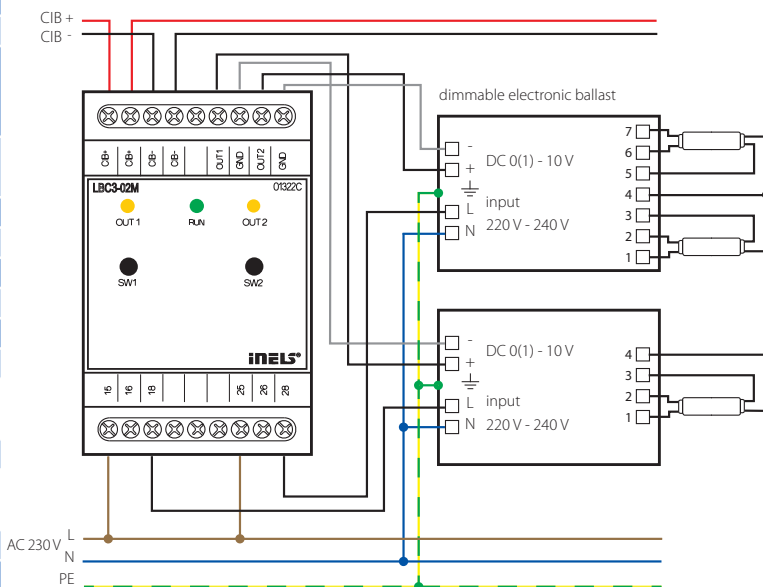
OPERATING CONDITIONS

Air humidity:	max. 80 %
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP20 device, IP40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	switchboard on DIN rail EN 60715
Design:	3-MODUL

DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	129 g

Example of connection





EAN code
EMDC-64M: 8595188150309
EMDC-64M/120V: 8595188153096

EAN code
External antenna AN-E: 859518819121
Internal antenna AN-I: 8595188161862

TECHNICAL PARAMETERS

POWER SUPPLY

EMDC-64M	
Supply voltage /rated current:	AC 230 V (50 - 60 Hz), -15 / +10 % / max. 100 mA
EMDC-64M/120V	
Supply voltage /rated current:	AC 120V (50 - 60 Hz), -15 / +10 % / max. 200mA

COMMUNICATION

Input interface:	EBM bus (RS485 communication)
Output interface:	DALI (max. 64 ballasts) DMX (max. 32 receivers, with repeater to 64)

INDICATION

Power supply:	green LED Un
Error surge or short DALI:	illuminated red LED RF/ERR
Communication RF:	irregularly flashing red LED RF/ERR
Indication of unit status:	LED DALI/DMX (see iNELS installation handbook)

OPERATING CONDITIONS

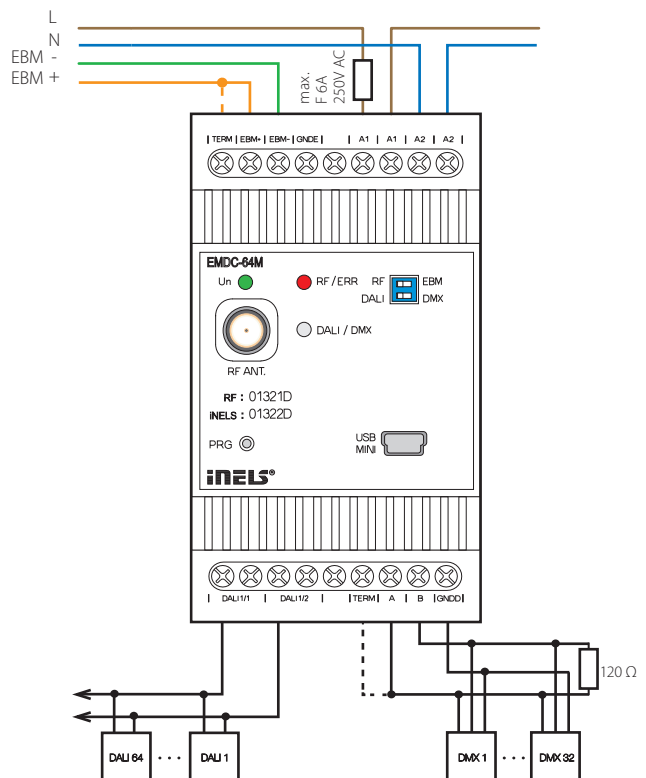
Relative humidity:	max. 80 %
Operating temperature:	-20°C to +55°C
Storage temperature:	-30°C to +70°C
Protection degree:	IP20 device, IP40 mounitg in the switchboard
Control device purpose:	operating control device
Control device construction:	individual control device
Characteristic of automatic action:	2.5 kV
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	into switchboard on DIN rail EN60715
Implementation:	3-module

DIMENSION AND WEIGHT

Dimension:	90 x 52 x 65 mm
Weight:	140g

- The unit EMDC-64M is designed to control DALI electronic ballasts and DMX receivers from the iNELS system.
- EMDC-64M enables control of up to 64 independent electronic ballasts DALI (Digital Addressable Lighting Interface) for fluorescent lamps, LEDs and other light sources.
- EMDC-64M also enables connection of up to 32 receivers DMX (Digital MultipleX) in a single segment. If using repeaters, it is possible to control up to 64 devices.
- Control from iNELS BUS System via EBM bus.
- DIP switches on the front panel to select the control interface (DALI / DMX) and to select between the configuration (RF) and communication (EBM) mode.
- DALI - ballasts can be configured via MINI USB connector using the software EMDC DALI Configurator (DIP switches must be in the position RF and DALI).
- The required functionality is set in user project in iDM3 software.
- The unit EMDC-64M is powered from the mains voltage 230 V AC.
- The bus DALI is directly connected via the unit EMDC-64M.
- The system bus EBM is galvanically separated from the buses DALI/DMX. Terminals for connecting the DALI bus are equipped with short circuit and surge protection.
- It is possible to connect up to 8 EMDC-64M units to one EBM bus.
- If this concerns the last unit on a system bus EBM, it is necessary to terminate the wire with a resistor with nominal resistance of 120Ω. The resistor is inside the unit, termination is made by shorting neighboring terminals TERM and EBM+.
- The bus DMX must be terminated at its end by a resistor with nominal resistive value 120Ω. Termination of the bus DMX on the part of the EMDC-64M is already implemented inside the unit. The resistor is inside the unit, termination is made by shorting neighboring terminals TERM and A.
- Mini USB connector on the front panel can also be used to firmware update using the software EMDC-64M Flasher.
- The EMDC-64M in 3-MODULE design is designed for mounting in a control panel on a DIN rail EN60715.

Example of connection





EAN code
DCDA-33M: 8595188146807

TECHNICAL PARAMETERS

POWER SUPPLY

Supply terminals:	Un+, GND
Supply voltage:	12 - 60 V
Consumption:	min. 0.5 W, max. 165 W
Supply voltage from CIB / tolerance:	27V DC, -20 / +15 %

OUTPUTS

Dimming load:	LED chips controlled by AC, or more LEDs connected in series*
Number of channels:	3
Rated current:	350 mA - 2 A
Output power:	3x 50 W
Output voltage:	6 - 55 V
Switching voltage:	Un
Output indication	LED OUT1, OUT2, OUT3
- light:	ON
- short:	flashing
- no light:	OFF

CONTROL

DALI:	1200 bit/s, 250 mA
CIB:	compatible with iNELS3, consumption < 4 mA
DMX:	250 kbit/s, 512 channels, control RGB(M) 3(4) channels

OPERATING CONDITIONS

Relative humidity:	max. 80 %
Operating temperature:	-20°C to +55°C
Storage temperature:	-30°C to +70°C
Protection degree:	IP20 device, IP40 mounitg in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operating position:	vertical
Installation:	into switchboard on DIN rail EN60715
Implementation:	3-modulle

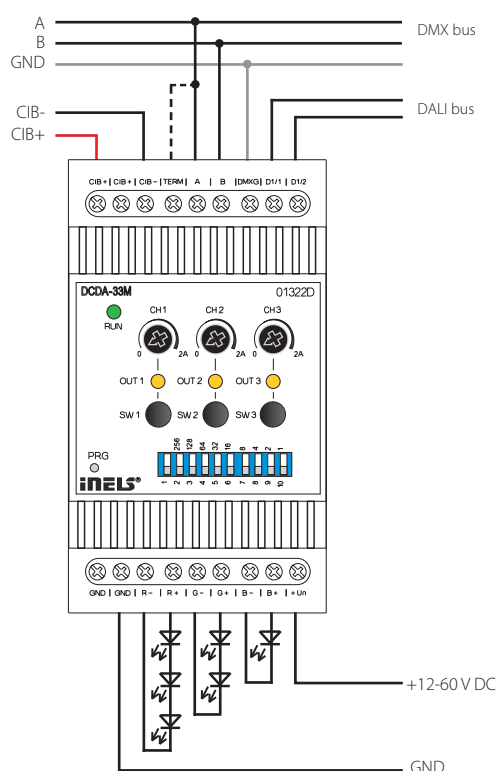
DIMENSION AND WEIGHT

Dimension:	90 x 52 x 65 mm
Weight:	135g

* for more information, see our manual.

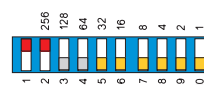
- DCDA-33M is a dimming unit designed to dim single-color and RGB LED light sources controlled by variable current.
- The actuator has three independent channels and each output channel is individually addressable and controllable.
- DCDA-33M actuator can be controlled from the bus DALI, DMX or CIB.
- When controlling the unit from the buses CIB and DMX, also the fourth virtual channel can be supported to control overall brightness.
- DCDA-33M can directly control from the system iNELS where the communication interface is the installation CIB.
- If for controlling, a communication interface DALI or DMX is used, it is possible to use the master unit EMDC-64M.
- The supply voltage of the dimming unit must be at least 4V higher than the expected output voltage on the load*.
- Setting the communication interface and addresses of actuators is performed using DIP switches:
 - switch No. 1
 - In the upper position determines DALI or CIB
 - In the lower position determines DMX
 - switch No. 2 (if that switch 1 is in the upper position)
 - In the upper position determines DALI
 - In the lower position determines CIB
- Using the control buttons on the front panel, you can manually control the output.
- The input circuits of communication interfaces are optically isolated from the supply voltage connected lamp unit, and is therefore resistant to electromagnetic interference.
- DCDA-33M in 3-module is designed for panel mounting on DIN rail EN60715.

Example of connection



Setting the DIP switches

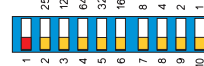
Setting the DALI communication interface - Switch 1 and 2.



Setting the CIB communication interface - Switch 1 and 2.



Setting the DMX communication interface - Switch 1.
Setting address - Switch 2-10.





- The dimmer for LED strips is used for independent control of 3 single-color LED strips or one RGB LED strip.
- The expanded selection of control modes enables it to be combined with:
 - a) Controllers and System units iNELS RF Control
 - b) control signal 0(1)-10V
 - c) connecting to iNELS BUS using DAC converters.
- The unit's three-module design with switchboard mounting enables connection of dimmed load 3 x 5A, which represents:
 - a) single-color LED strip 7.2W (ELKO Lighting) – 3 x 8 m
 - b) RGB LED strip 14.2W (ELKO Lighting) – 10 m.
- 6 light functions - smooth increase or decrease with time setting 2s-30 min.
- When switched off, the set level is stored in the memory, and when switched back on, it returns to the most recently set value.
- The dimmer may be controlled by up to 32 channels (1 channel represents 1 button on the controller).
- The power supply of the unit is in the range of 12-24V DC, and is indicated by a green LED.
- The package includes an internal antenna AN-I, in case of locating the unit in a metal switchboard, you can use the external antenna AN-E for better signal reception.
- Range up to 160 m (in open space), if the signal is insufficient between the controller and unit, use the signal repeater RFRP-20.
- Communication frequency with bidirectional protocol iNELS RF Control.

RFDA-73M/RGB	voltage	frequency	EAN code
	12-24V DC	868.5 MHz	8595188146814
	12-24V DC	868.1 MHz	8595188144179
	12-24V DC	915 MHz	8595188152990
	12-24V DC	916 MHz	8595188153003

EAN code
 External antenna AN-E: 859518819121
 Internal antenna AN-I: 8595188161862

TECHNICAL PARAMETERS

OUTPUTS

Dimmed load:	LED strip 12V,24V with common anode; RGB LED strips 12V, 24V with common anode
Number of channels:	3
Rated current:	3x 5 A
Peak current:	3x 10 A
Switching voltage:	Un

CONTROLLING

RF by command from the transmitter:	868 MHz / 915 MHz / 916 MHz
Ext. signal:	0-10 V, 1-10V
Range in open space:	up to 160 m
Output for RF antenna:	SMA connector *
Load capacity of output +10V:	10 mA

POWER SUPPLY

Supply terminals:	Un+, GND
Supply voltage:	12-24 V DC stabilized
Maximum power without load:	0.8 W

CONNECTION

Terminal:	max 1x2.5, max 2x1.5/ with sleeve max. 1x2.5
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OPERATING CONDITIONS

Operating temperature:	-20 up to + 50 °C
Storing temperature:	-30 up to + 70 °C
Pollution degree:	2
Operating position:	any
Protection:	IP20 device, IP40 mounting in the switchboard
Installation:	into a switchboard rail to DIN EN 60715
Design:	3-MODULE

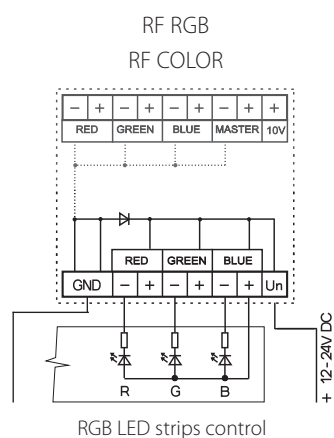
DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	130 g

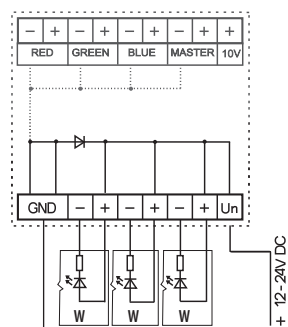
* Max Tightening Torque for antenna connector is 0.56 Nm.

Connection

Output variations



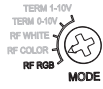
RF WHITE



Control modes

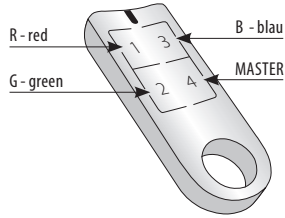
RF RGB

Switch settings in MODE:



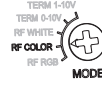
RF RGB mode for controlling RGB LED strips. In the RF RGB programming mode, colors are automatically assigned to individual transmitter buttons.

Note: The mode can be controlled by RF Touch, RF Pilot, RFWB-40/G, RF KEY, RFIM-40B, eLAN-RF-003 and eLAN-RF-Wi-003



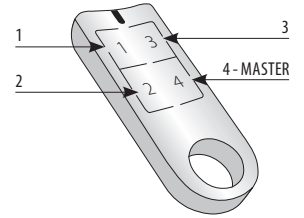
RF COLOR

Switch settings in MODE:



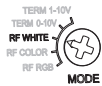
RF COLOR mode for controlling RGB LED strips, where you can choose the color for individual transmitter buttons. A long press of the button starts the color search mode. After releasing the button, the current color is set for the given button.

Note: The mode can be controlled by RF Touch, RF Pilot, RFWB-40/G, RF KEY RFIM-40B, eLAN-RF-003 and eLAN-RF-Wi-003.



RF WHITE

Switch settings in MODE:

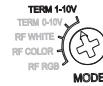
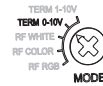


This works in a mode where it acts like three independent dimmers for 12-24V. Each channel can be programmed independently of one another and has its own address.

Note: The mode can be controlled by RF Touch, RF Pilot, RFWB-20/G, RFWB-40/G, RF KEY, RFIM-20B, RFIM-40B, eLAN-RF-003 and eLAN-RF-Wi-003.

TERM 0-10V and TERM 1-10V

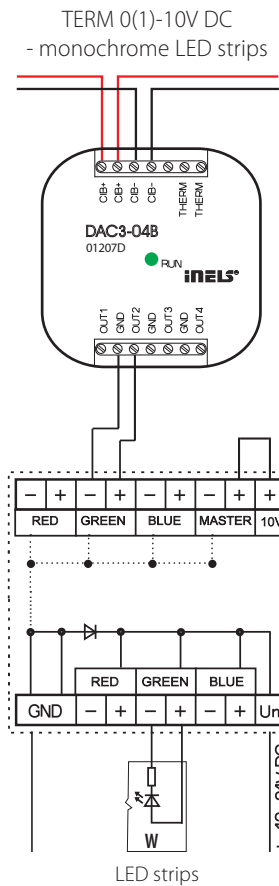
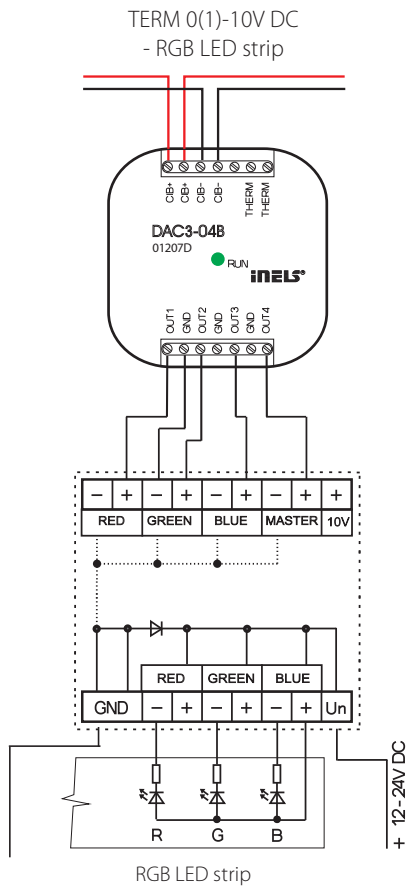
Switch settings in MODE:



Modes TERM 0-10V and TERM 1-10V.

Inputs 0-10V and 1-10V used to control one RGB LED strip or three independent single-color LED strips from the iNELS BUS System. For controlling, you can use converters DAC3-04M or DAC3-04B. For controlling, it is appropriate to use the wall touch unit EST3, the controller WSB3-40, the glass touch controller GSB3-40, the application IMM on the TV screen or the application iHC for smartphones and tablets.

Control options of monochromatic RGB LED strips from iNELS BUS SYSTEM





EAN code
IM3-20B: 8595188132305



EAN code
IM3-40B: 8595188132312



EAN code
IM3-80B: 8595188132329

TECHNICAL PARAMETERS

INPUTS

Input IM3-20B:	2x NO or NC against GND(-) IN1, IN2 are balanced inputs
Input IM3-40B:	4x NO or NC against GND(-) IN1, IN2 are balanced inputs
Input IM3-80B:	8x NO or NC against GND(-) IN1 - IN5 are balanced inputs
Temperature measuring:	Yes, input for external thermo sensor TC/TZ
Range /accuracy of thermomeasuring:	-20 to +120°C / 0.5°C from the range

OUTPUTS

Output voltage / current:	12 V DC/75 mA, for supplying EZS sensors
---------------------------	--

COMMUNICATION

Installation BUS:	CIB
Status indication unit:	green LED RUN

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	20 mA (at 27V DC), from CIB BUS
Rated current of IM3-20B and IM3-40B for full load on output 12 V DC:	60 mA
Rated current of unit for full load on output 12 V DC of IM2-80B:	100 mA

CONNECTION

Terminal:	0.5 - 1 mm ²
INPUTS IM2-20B:	4x conductors CY, profile 0.75mm ² , length 90mm
INPUTS IM2-40B:	6x conductors CY, profile 0.75mm ² , length 90mm

OPERATING CONDITIONS

Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 30
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	into installation box

DIMENSIONS AND WEIGHT

Dimensions:	49 x 49 x 13 mm
Weight:	IM3-20B - 30 g, IM3- 40B - 32 g, IM3-80B - 27 g

- Binary input units IM3-20B, IM3-40B and IM3-80B are used for connection of 2, 4 or 8 devices with potential-less contacts (switches, buttons, switches of other design, PIR detectors, fire and gas detectors, etc.).

- Part of the inputs can be used as a balanced for alarm detectors:
IM3-20B – inputs IN1, IN2
IM3-40B – inputs IN1, IN2
IM3-80B – inputs IN1 – IN5.

- Contacts of external devices connected to the inputs of the unit can be NO or NC - Input parameters are configured in the software iDM3.

- The units generate a supply voltage of 12V DC / 75 mA for powering external intrusion detectors, so they can power PIR detectors, fire and gas detectors.

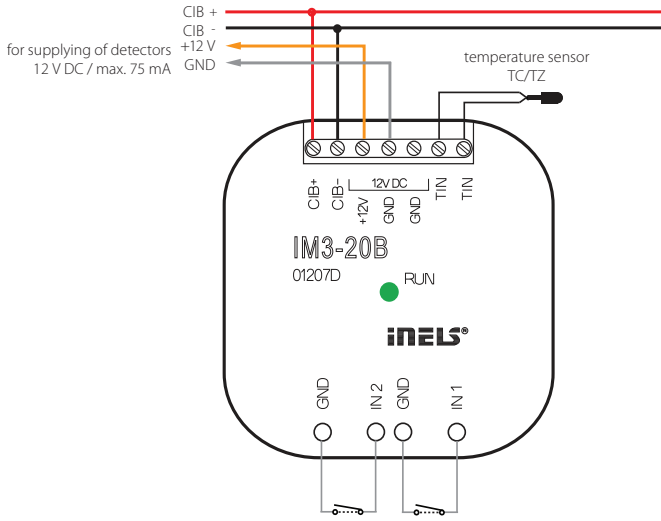
- Active use 12V DC output for powering detectors increases the nominal consumption of units from CIB (see technical data).

- The units can be used for counting pulses of energy meters with pulse output.

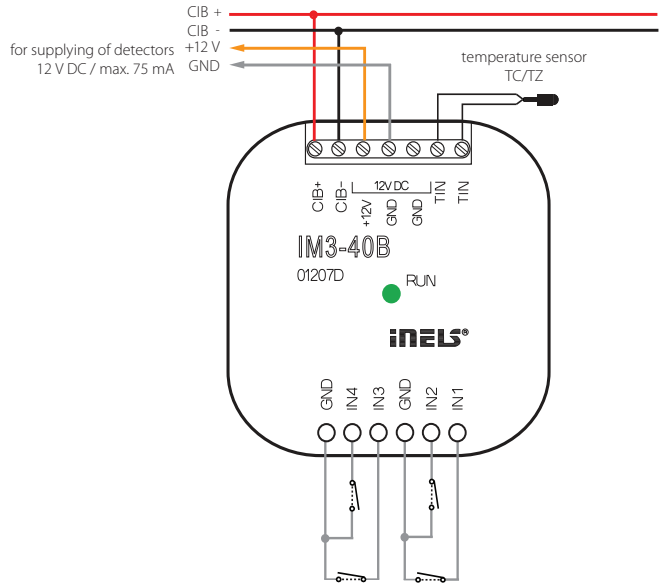
- The units are equipped with a temperature input for connecting an external two-wire temperature sensor TC/TZ (see accessories).

- IM3-20B, IM3-40B, IM3-80B in case type B are designed for mounting into a installation box.

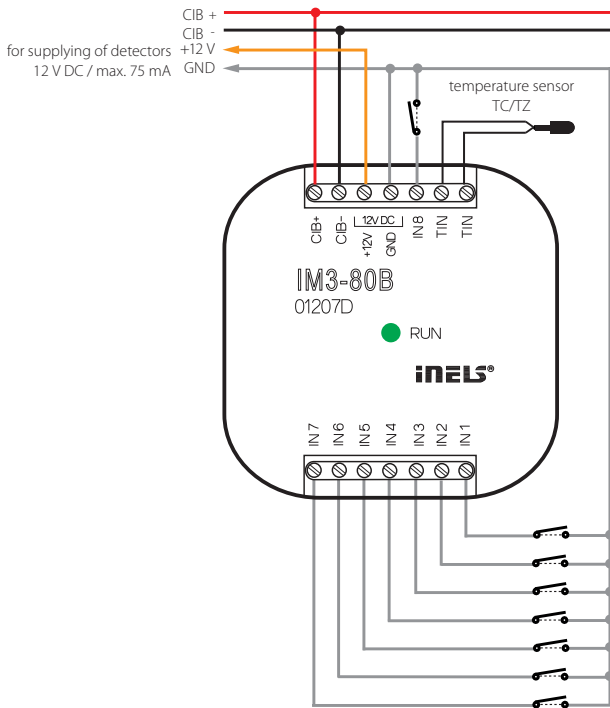
Example of connection IM3-20B



Example of connection IM3-40B

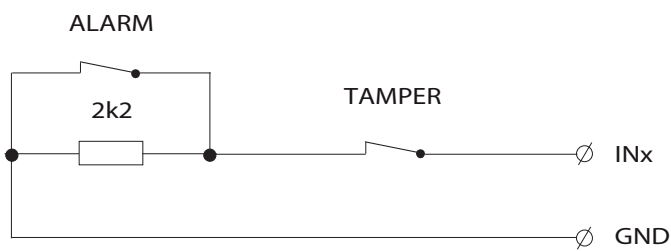


Example of connection IM3-80B

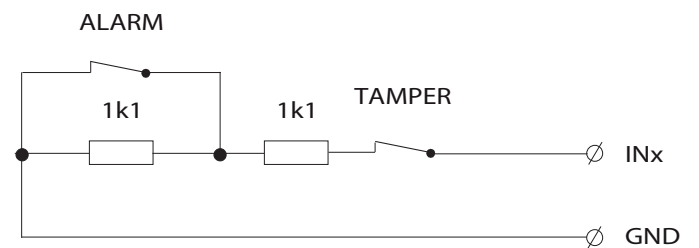


Balanced input

Simple:



Double:





EAN code
IM3-140M: 8595188132459

- Binary input unit IM3-140M is designed to connect up to 14 devices with potentialless contact (such as switches, buttons of other designs, fire and glass detectors and others).
- Inputs IN1 - IN7 can be balanced.
- Contacts of external devices connected to the inputs of the drive can be NO or NC - Input parameters are configured in the software iDM3.
- Inputs must be configured as balanced or double balanced - in an internal Electronic security system configured in iDM3 software.
- The unit generates a supply voltage of 12V DC / 150 mA for powering external detectors, so it can power PIR detectors, fire and gas detectors.
- Active use 12V DC output for powering detectors increases the nominal consumption units from CIB (see technical data).
- The unit can be used for counting pulses of energy meters with pulse output.
- IM3-140M in 3 module is designed for switchboard mounting on DIN rail EN60715.

TECHNICAL PARAMETERS

INPUTS

Input:	14x NO or NC against GND (-) IN1 - IN7 -are balanced inputs
Max. frequency pulse reading:	100 Hz

OUTPUTS

Output (power supply 12V for sensors):	12 V DC/150 mA
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COMMUNICATION

Installation BUS:	CIB
Data transfer indication:	yellow LED

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	25 mA (at 27V DC), from CIB BUS
Rated current for full load on output 12 V DC:	100 mA

CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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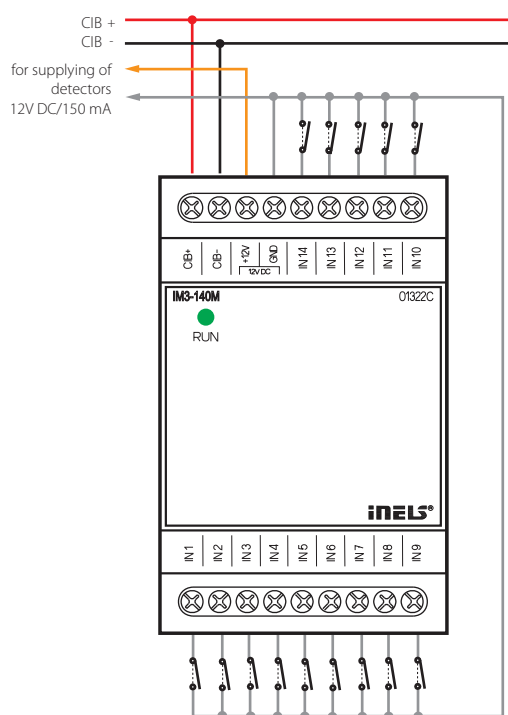
OPERATING CONDITIONS

Air humidity:	max. 80 %
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20 device, IP 40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	into a switchboard rail to DIN EN 60715
Design:	3-MODULE

DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	110 g

Example of connection





EAN code
TI3-10B: 8595188132886



EAN code
TI3-40B: 8595188132695

- These units are designed for connection of one (TI3-10B) to four (TI3-40B) external temperature sensors.
- Units range TI3 support the connection of the following temperature sensors:
 - TC / TZ - 2-wire connections
 - Ni1000, Pt1000, Pt100 - 2-wire and 3-wire connections.
- Used in when necessary to take temperatures from different places (for example large floor heating – diagonal layout of sensors, floor/space, indoor/outdoor temperature, technological device – boiler, solar heating etc.)
- Status of units indicated by green RUN LED on the front panel:
 - If the supply voltage is connected (units are powered via the bus CIB), but there is no communication with the master, RUN LED is lit continuously.
 - If the supply voltage is connected and the unit communicates via standard CIB, RUN LED flashes.
- TI3-10B-40B in TI3 version B is designed for mounting into an installation box.

TECHNICAL PARAMETERS

INPUT

Temperature input for temperature measuring:	1x / 4x inputs for external thermo sensor TC, TZ, Ni1000, Pt1000, Pt100, see accessories
Emperature measurement range:	by type of sensor, prob from -50°C to 400°C
Converter resolution:	15 bit

COMMUNICATION

Installation BUS:	CIB
Status indication unit:	green LED RUN

POWER SUPPLY

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

CONNECTION

Terminal:	0.5 mm ² - 1 mm ²
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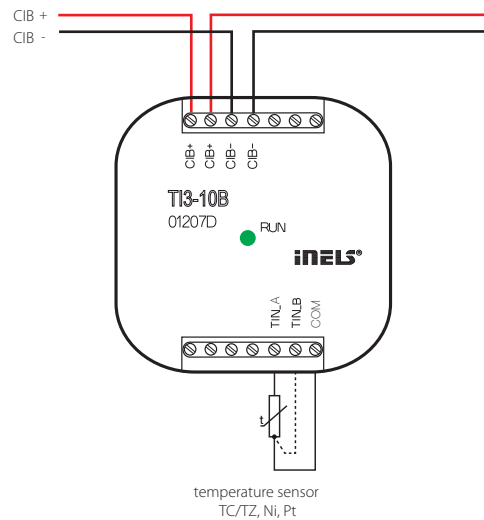
OPERATING CONDITIONS

Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 30
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	into installation box

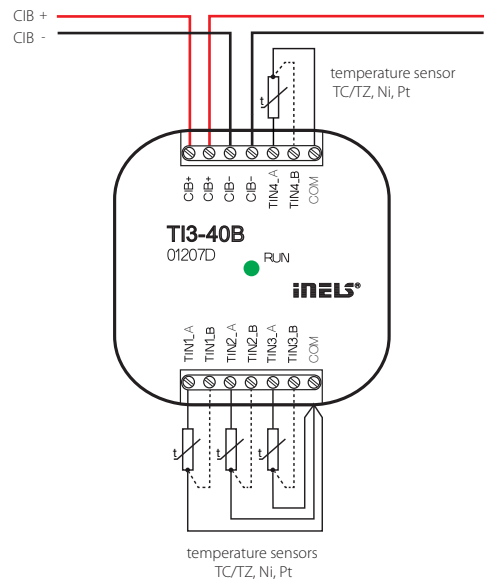
DIMENSIONS AND WEIGHT

Dimensions:	49 x 49 x 13 mm
Weight:	TI3-10B (27 g), TI3-40B (27 g)

Example of connection TI3-10B

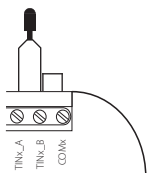


Example of connection TI3-40B

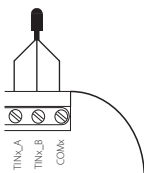


Connection options

2-wire
- it is necessary to connect terminals TIN_B and COM



3-wire
-connection of the sensor needs to be done according to the technical specifications





EAN code
TI3-60M: 8595188132893

TECHNICAL PARAMETERS

INPUT

Temperature input for temperature measuring:	6x input for external temperature sensor TC, TZ, Ni1000, Pt1000, Pt100 see accessories
Temperature measurement range:	by type of sensor, probe from -50°C to 400°C
Converter resolution:	15 bit
Indication of exceeding the range or interruption of the sensor:	6x red LED

COMMUNICATION

Installation BUS:	CIB
Status indication unit:	green LED RUN

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	45 mA (at 27V DC), from CIB BUS

CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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OPERATING CONDITIONS

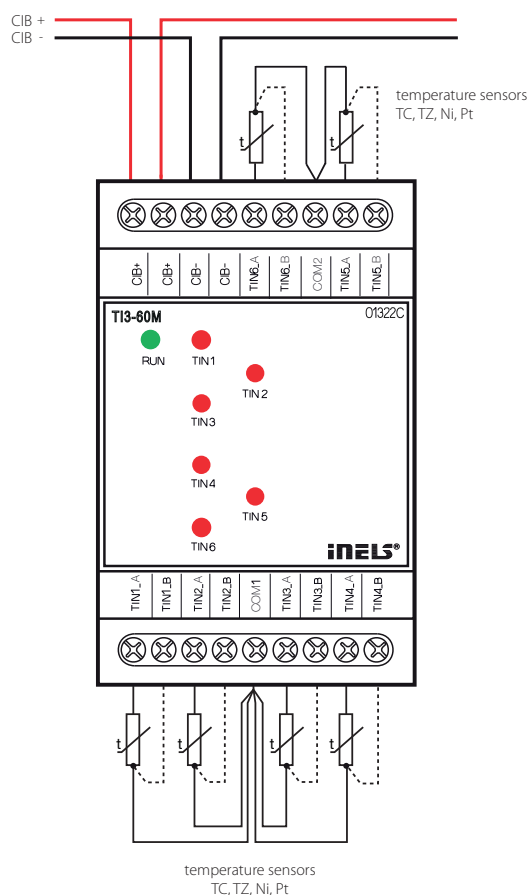
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20 device, IP 40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	into a switchboard rail to DIN EN 60715
Design:	3-MODULE

DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	102 g

- Unit TI3-60M is designed to connect up to six external temperature sensors.
- Units range TI3 support the connection of the following temperature sensors:
 - TC / TZ - 2-wire connections
 - Ni1000, Pt1000, Pt100 - 2-wire and 3-wire connections.
- It is used in cases where it is necessary to read the temperature, eg floor/room, indoor/outdoor temperature, process equipment - boiler, solar heating, etc.
- Unit status is indicated by green RUN LED on the front panel:
 - If the supply voltage is connected (the unit is powered via the bus CIB), but there is no communication with the master, RUN LED is lit continuously.
 - If the supply voltage is connected and the unit communicates via standard CIB, RUN LED flashes.
- The status on individual temperature inputs is indicated by the relevant red LED on the front panel:
 - LIT - temperature sensor disconnection
 - FLASHES - exceeding of the temperature range
 - UNLIT - ok.
- TI3-60M in 3 module is designed for switchboard mounting on DIN rail EN60715.

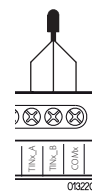
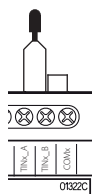
Example of connection



Connection options

2-wire
- it is necessary to connect terminals TIN_B and COM

3-wire
-connection of the sensor needs to be done according to the technical specifications





EAN code
ADC3-60M: 8595188133012

TECHNICAL PARAMETERS

INPUTS

Analog inputs:	6x voltage, current or temperature input
Number of inputs:	6
Galv. separation from inner circuits:	No
Diagnostic:	indication (exceeding the range, interruption of a sensor or overload of Uref output) by the applicable red LED
Common terminal:	COM
Converter resolution:	14 bits
Input resistance	
- for voltage ranges:	approx. 150 kΩ
- for current ranges:	100 Ω
Types of inputs / measuring ranges*:	Voltage (U): 0 ÷ +10 V (U) 0 ÷ +2 V (U) Current (I): 0 ÷ +20 mA (I) 4 ÷ +20 mA (I) temperature: input at ext. temperature sensor TC, TZ, Ni1000, Pt1000, Pt100 see accessories / according to used sensor from -30°C to 250°C

OUTPUTS OF THE Uref1 AND Uref2 VOLTAGE

Voltage* / current of Uref1:	10 or 15 V DC / 100 mA
Voltage* / current of Uref2:	2 or 10 V DC / 20 mA

COMMUNICATION

Installation BUS:	CIB
Unit status indication:	green LED RUN

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current**:	100 mA (at 27V DC), from CIB BUS

CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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OPERATING CONDITIONS

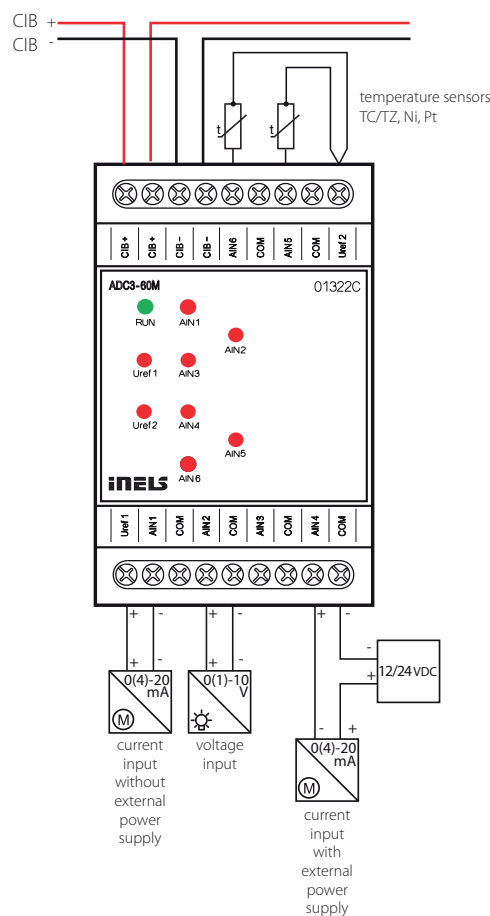
Operating temperature:	-20 to +55°C
Storing temperature:	-30 to +70°C
Protection degree:	IP 20 device, IP 40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	into a switchboard rail to DIN EN 60715
Design:	3-MODULE

DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	112 g

- ADC3-60M is an analog-to-digital converter and is equipped with 6 analog inputs.
- Analog inputs serve to connect temperature sensors or analog sensors that generates current or voltage signal.
- The analog inputs have a resolution of a 14-bit AD converter.
- The analog inputs have a common terminal COM.
- Analog inputs / outputs are configurable in iDM3 independently as voltage (U) or current (I) or temperature.
- We recommend Clima sensor as a meteo station. There are four types: five to eight outputs. The top series offers measuring of: rainfall, brightness, twilight, speed of wind, temperature and relative humidity.
- The red LEDs in the front panel indicate exceeding the range, interruption of a sensor or overload of Uref output.
- The temperature inputs at the top of the terminal are used to connect the following temperature sensors:
- TC, TZ, Ni 1000, Pt1000, Pt100
- ADC3-60M in 3-MODULE version is designed for mounting into a switchboard, on a DIN rail EN60715.

Example of connection



* selectable for each input/output individually by configuration in the user program iDM3. Min. supply voltage 24 V DC must be respected when configuring 15 V DC and 100 mA consumption.
** according to load Uref output.



EAN code
DAC3-04B: 8595188132572

- DAC3-04B is converter of a digital signal to an analog voltage signal.
- The converter generates 4 analog voltage signals, which can be regulated according to type of controlled device, in a range 0-10V or 1-10V.
- This is used for regulating and controlling devices that may be controlled by this signal (dimnable ballasts of fluorescent lamps and other types of light sources - e.g. LED panels from the assortment of ELKO Lighting, dimming actuator for LED and RGB strips RFDA-73M/RGB, thermostatic heads, servo drives, elements for measuring and regulation and others).
- Range of output voltage is adjustable in iDM3.
- DAC3-04B is equipped with a temperature input for connecting a 2-wire external sensor TC / TZ.
- DAC3-04B in version B is designed for mounting into an installation box.

TECHNICAL PARAMETERS

INPUTS

Temperature measuring:	YES, input for external temperature sensor TC/TZ
Range / accuracy of temp. measuring:	-20 to +120°C; 0.5°C from the range

OUTPUTS

Analog voltage output / rated current:	4x 0(1)-10 V/10 mA
--	--------------------

COMMUNICATION

Installation BUS:	CIB
Status indication unit:	green LED RUN

POWER SUPPLY

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

CONNECTION

Terminal:	0.5 - 1 mm ²
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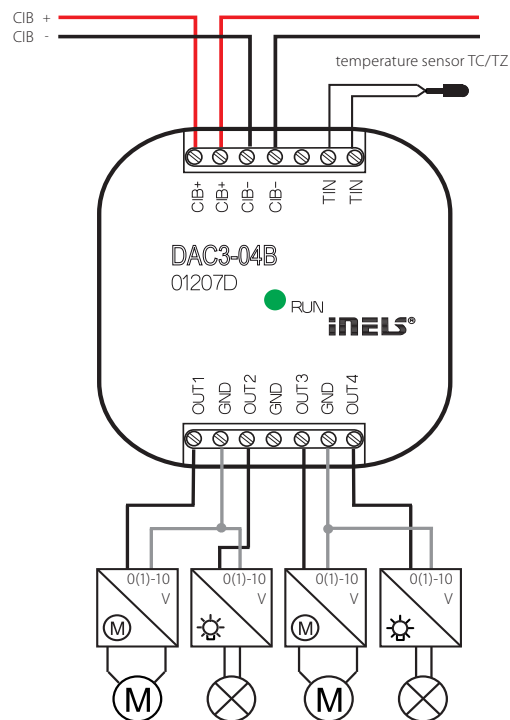
OPERATING CONDITIONS

Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 30
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	into installation box

DIMENSIONS AND WEIGHT

Dimensions:	49 x 49 x 13 mm
Weight:	27 g

Example of connection





EAN code
DAC3-04M: 8595188132565

- DAC3-04M is a converter from a digital signal to an analog voltage signal.
- The converter generates 4 analog voltage signals, which can be operated, according to type of controlled device, in a range 0-10V or 1-10V.
- This is used for regulating and controlling devices that may be controlled by this signal (dimmable ballasts of fluorescent lamps and other types of light sources - e.g. LED panels from the assortment of ELKO Lighting, dimming actuator for LED and RGB strips RFDA-73M/RGB, thermostatic heads, servo drives, elements for measuring and regulation and others).
- Range of output voltage is adjustable in iDM3.
- Converter is equipped with a temperature input for connecting a 2-wire external sensor TC/TZ (see accessories).
- DAC3-04M in 3-MODULE version is designed for mounting into a switchboard, on DIN rail EN60715.

TECHNICAL PARAMETERS

INPUT

Temperature measuring:	YES, input for external temperature sensor TC/TZ
Range / accuracy of temp. measuring:	-20 to +120°C; 0.5°C from the range

OUTPUTS

Analog voltage output / rated current:	4x 0(1)-10 V/10 mA
Indication of output overload:	red LED OVERLOAD

COMMUNICATION

Installation BUS:	CIB
Status indication unit:	green LED

POWER SUPPLY

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

CONNECTION

Terminal:	max. 2.5 mm ² /1.5 mm ² with sleeve
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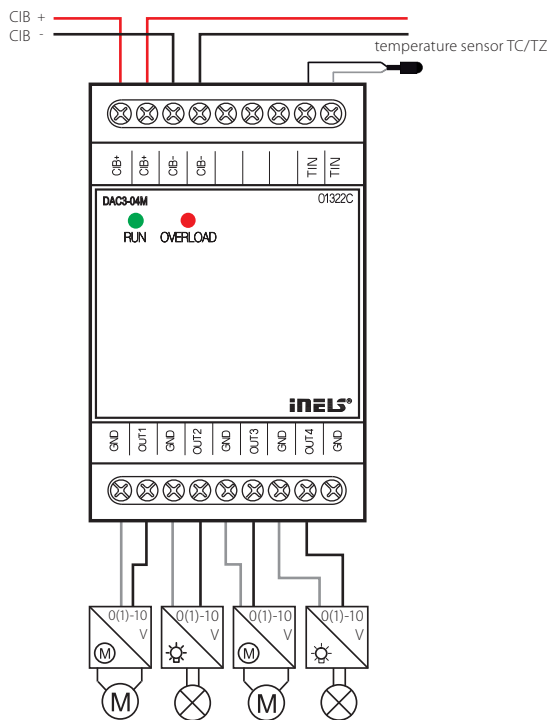
OPERATING CONDITIONS

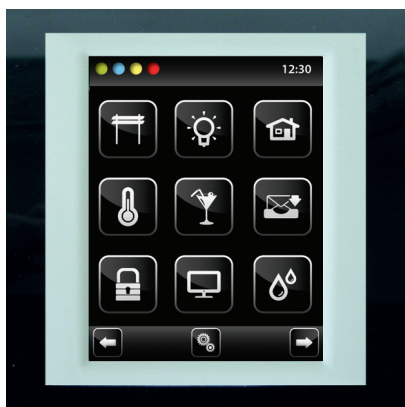
Air humidity:	max. 80 %
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20 device, IP 40 mounting in the switchboard
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	switchboard on DIN rail EN 60715
Design:	3-MODULE

DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	108 g

Example of connection





EAN code

EST3 (white frame, white intermediate frame, white back cover) - 8595188177009

EST3 (black frame, dark gray intermediate frame, dark gray back cover) - 8595188177016

TECHNICAL PARAMETERS

DISPLAY

Type:	colored TFT LCD
Aspect ratio:	3:4
Visible area:	52.5 x 70 mm
Backlight:	active
Touchpad:	4-wire resistive
Display:	3.5"
Number of points:	240 x 320
Color Depth:	16.7M (24 bit color)

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	150 mA (at 27V DC)

CONNECTION

Connection:	terminals
Connecting conductors profile:	max. 2.5mm ² /1.5mm ² with sleeve

OPERATING CONDITIONS

Operating temperature:	0 to +55°C
Storing temperature:	- 20 to +70°C
Protection degree:	IP20
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	installation box

DIMENSIONS AND WEIGHT

Dimensions:	94 x 94 x 36 mm
Weight:*	127 g

* Weight is listed with plastic frame.

- The control unit with touch screen EST3 is a suitable control element of the iNELS system in places where it is necessary to control multiple devices. The unit replaces several drivers and enables minimizing the number of switches on the wall.

- EST3 features a 3.5" color touchscreen with an aspect ratio of 3:4. The basic display resolution is 240 x 320 pixels. The color depth of 16.7 million colors (24 bit color, True Color).

- Use the touch sensing surface to control configured buttons and symbols on the screen just by a light touch of a finger. Individual symbols on the screen are in the "Press" animated by the associated output in the system.

- EST3 can have a combination of these screens:

- Buttons screen
- Temperature control screen
- Control RGB light sources screen

- Buttons screen can be set in the menu and can be optionally configured according to user requirements. There are four basic templates of buttons matrix - 2x2, 2x3, 3x3 and 3x4. The screen can then have up to 12 buttons to control up to 12 appliances or scenes.

- In the configuration buttons menu, it is possible to assign a symbol (icon) of the preset menu to individual keys from the selected template (48 different symbols - bulb, blinds, party scene, etc.), possibly write to the button three alphanumeric characters.

- The temperature regulation screen enables coordination of the temperature of the selected heating circuit in a range of ± 3 , ± 4 or ± 5 °C (in relation to settings in iDM3).

- The virtual wheel can be used for temperature correction, where you can drag your finger across the screen to control the temperature by half a degree Celsius.

- The temperature correction can also be used instead of the virtual wheel symbols "+" and "-".

- EST3 units do not have an integrated temperature sensor, or terminals for connection to an external temperature sensor. Within the iDM3 software, it is possible to assign any unit of heat input system iNELS.

- The control RGB light sources screen allows you to comfortably control your RGB light sources and adjust the luminous atmosphere as needed.

- For these RGB light sources, it is possible to use the controls on the screen to adjust the color and brightness. It is also possible to directly set the RGB illumination light source into white color.

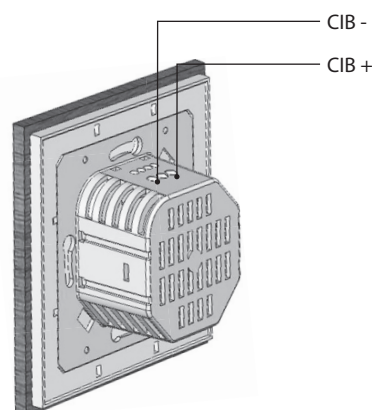
- Located in the left upper corner of the screen are 4 indicators that can signal the status of any logical input / output in the iNELS system.

- In the settings menu, you can define the language menu, screen saver, sleep mode, brightness settings, select the default display and devices display mode of EST3

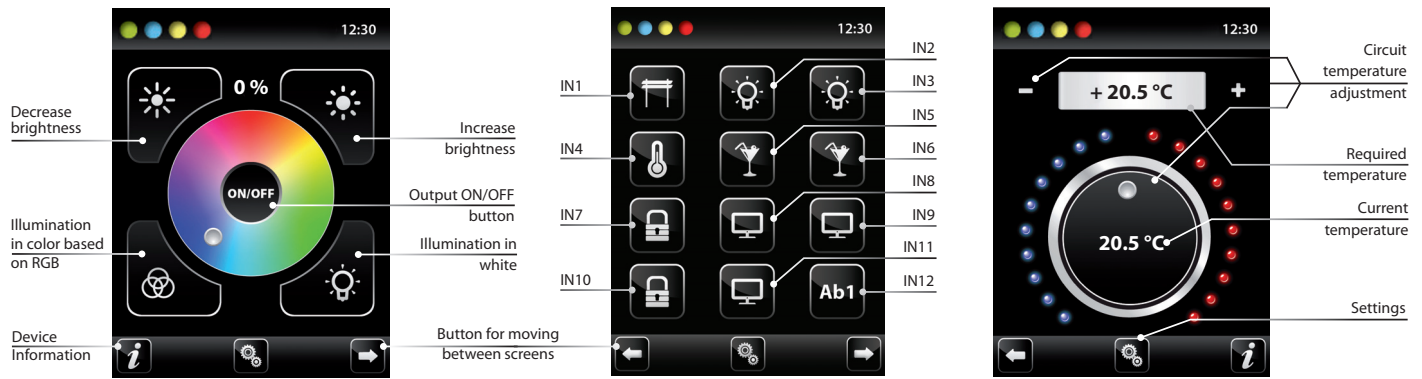
- Unit EST3 is on the CIB represented by one hardware address.

- EST3 are designed as LOGUS⁹⁰ devices (EST3 however cannot be placed into multi-frames with other devices in this design) and are intended for mounting to installation box.

Power supply



THE SCREENSHOTS



Legend:

- EST3=> settings menu=>design selection=>2x2 - input IN1 - IN4
- EST3=> settings menu=>design selection=>2x3 - input IN1 - IN6
- EST3=> settings menu=>design selection=>3x3 - input IN1 - IN9
- EST3=> settings menu=>design selection=>3x4 - input IN1 - IN12

BUTTONS SCREEN

- Programming iNELS system functions on each button on the screen units EST3 is the same as programming other digital inputs or events for input or button units.
- Buttons can be configured as well as other inputs in the system, both for short and also long press (> 1.5 s).
- Buttons (icons) on the screen can be used instead of control outputs for visualization of one of the digital outputs of the system iNELS. This is made possible by assigning button to the desired output.
- In doing so, the button (icons) on the screen EST3 will become signal lamps (illuminated button), showing the state of the associated output.

HEATING CONTROL SCREEN

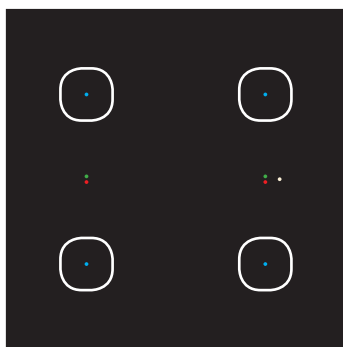
- On the temperature control screen, the temperature of the selected heating circuit can be corrected in the range of ± 3 , ± 4 or ± 5 °C.
- The virtual wheel can be used for temperature correction, where you can drag your finger across the screen to control the temperature by half a degree Celsius.
- The temperature correction can also be used instead of the virtual wheel symbols "+" and "-" .

RGB LAMP AND LIGHT SOURCE CONTROL SCREEN

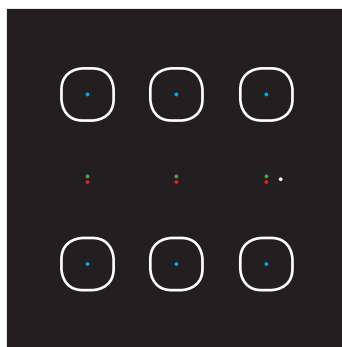
- The RGB light sources control screen contains controls for managing the desired color and brightness of the RGB light sources.
- RGB control screen function is set up so that the colors R, G, B are bound together and simulate the signal level on analog inputs R, G, B and the resulting brightness of the lamp is linked to a simulated analog input 0 to 100%.
- The RGB control display is comprised of several elements and buttons.
 - A long press (touch) on the ON/OFF controls the central setting of RGB components and lamp brightness - on/off.
 - Buttons in the upper half of the screen are for setting the lamp brightness from 0-100% in 5% increments (see adjustable brightness indicator in %).
 - Buttons in the lower half of the screen are for setting the color comfort and accelerated lamp RGB control. The buttons have a lock function. When pressing "white illumination" button, the analog inputs are automatically set to the maximum value of individual color components, which appears as a resulting white light at the RGB light source output when these components are mixed. Then simply adjust the brightness intensity at the output. When pressing (touching) the button "RGB-based color illumination", the "white illumination", button automatically unlocks, and the "RGB-based color illumination" settings button locks..Now the values of analog inputs of individual RGB color components are preset according to the set cursor in the color wheel of the RGB scale on the EST3.

ADDITIONAL INFORMATION:

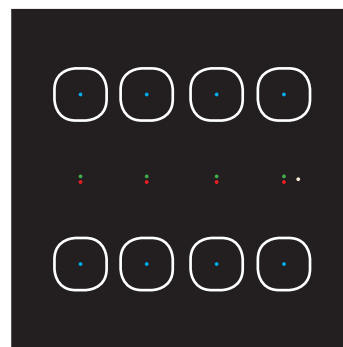
- Info gives information on the device and firmware version.
- Clicking the icon brings you to the settings menu, used to edit the EST3.
- The icon returns to the buttons panel.
- The system time is displayed in the upper right corner of the screen.
- All inputs and outputs on the EST3 unit can be freely programmed and parameterized using the iDM3 program.



EAN code
GSB3-40/B: 8595188132909



EAN code
GSB3-60/B: 8595188132916



EAN code
GSB3-80/B: 8595188132923

TECHNICAL PARAMETERS

INPUTS	GSB3-40	GSB3-60	GSB3-80
Temperature measuring:	YES, built-in thermo sensor		
Scope and accuracy of temp. measurement:	0 to +55°C; 0.3°C from the range		
Number of control buttons:	4	6	8
Inputs:	2x AIN/DIN		
Resolution:	according to the settings, 10 bits		
Ext. temperature sensor:	Yes, the connection between AIN1/DIN1 and AIN2/DIN2		
Type ext. sensor:	TC/TZ		
Temperature measurement range:	-20°C to +120°C		
Temperature measurement accuracy:	0.5°C from range		

OUTPUTS	GSB3-40	GSB3-60	GSB3-80
Indications:	pair of LEDs (red, green)		
Number:	2	3	4

COMMUNICATION	GSB3-40	GSB3-60	GSB3-80
Installation BUS:	CIB		

POWER SUPPLY	GSB3-40	GSB3-60	GSB3-80
Supply voltage / tolerance:	27 V DC, -20 / +10 %		
Rated current:	25 - 40 mA (at 27V DC), from CIB BUS		

CONNECTION	GSB3-40	GSB3-60	GSB3-80
Terminals:	0.5 - 1 mm ²		

OPERATING CONDITIONS	GSB3-40	GSB3-60	GSB3-80
Relative humidity:	max. 80 %		
Operating temperature:	-20 to +55 °C		
Storing temperature:	-30 to +70 °C		
Protection degree:	IP 20		
Overvoltage category:	II.		
Pollution degree:	2		
Operation position:	any		
Installation:	into installation box		

DIMENSIONS AND WEIGHT	GSB3-40	GSB3-60	GSB3-80
Dimensions:	94 x 94 x 36 mm		
Weight:	155 g		

• The wall controller with touch controls series GSB3 is a design element (controller) in the system iNELS with elegant and comfortable control. Controllers are available in black (e.g. GSB3-40/B) and white (e.g. GSB3-40/W) variants.

• Between each pair of touch buttons there is available a pair of indicator LEDs (green, red) to signal not only the status of the controlled appliances, but also the status of any sensor or actuator in the system.

• At the location of each touch button there is available a blue diode signaling the touching of the given button. Touching may be signaled by a vibration impulse or sound tone - selectable in the software iDM3.

• Controllers are 4-channels (GSB3-40), 6-channels (GSB3-60) and 8-channels (GSB3-80).

• All versions are in the same dimension as a basic modular wall-switch (94x94 mm).

• Each controller is equipped with a thermo sensor. It is equipped with two analog-digital inputs (AIN / DIN), and it is possible to connect two potentialless contact or an external temperature sensor TC / TZ. (for example on floor temperature measurement).

• Controllers are equipped with an ambient light intensity sensor. From the basic information from the sensor, it is possible to illuminate orientation blue diodes in the touch controls GSB3 or perform various actions in the software iDM3, e.g. illuminate light circuits in a hallway, etc.

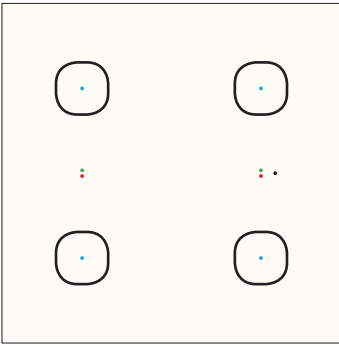
• Advantages over conventional switches/buttons include space saving, signaling of any output system, the ability to measure temperature and also the ability to connect external buttons or detectors.

• Each channel(button) can control any actuator (appliance) in the system. It is also possible to program various functions or macro (set of functions) to each button. This allows you to control several appliances with one button simultaneously.

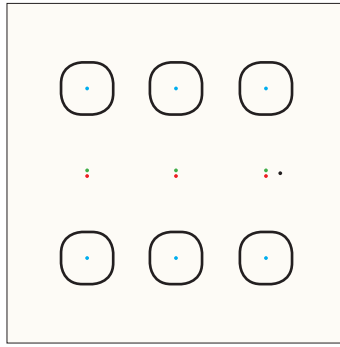
• Each button (channel) can have different functional modes beside lighting control:

- a) Classic wall-switch:
 - upper button ON, bottom button OFF.
- b) Button controller (impulse relay):
 - first press ON, second press OFF.
- c) Dimmer:
 - short press – ON/OFF.
- d) Time switch:
 - ON after press, automatically OFF after set time.
- e) Setting light scenes – for example: for watching TV:
 - shutters down
 - main light 30% intensity
 - wall-lamps 50% intensity.

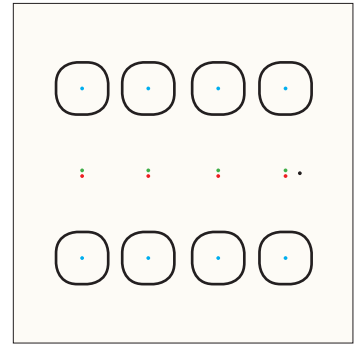
• Design series LOGUS⁹⁰ offers glass frames in black and white color. These frames goes perfectly with GSB3 wall buttons.



GSB3-40/W: 8595188132954

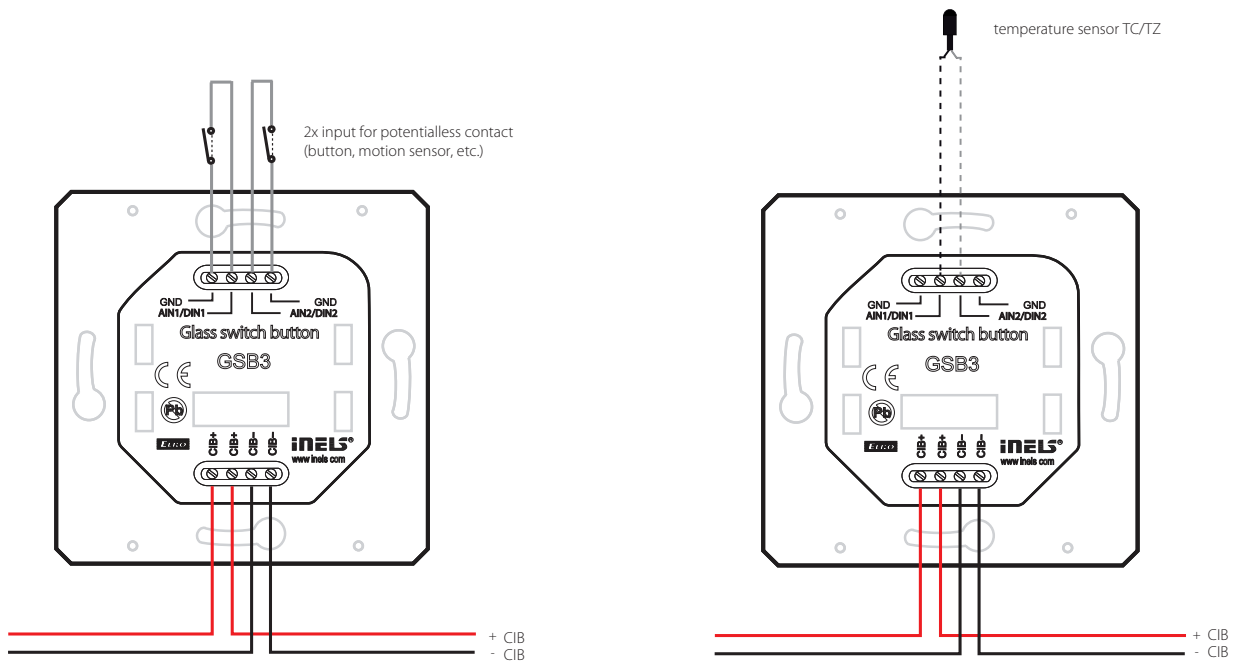


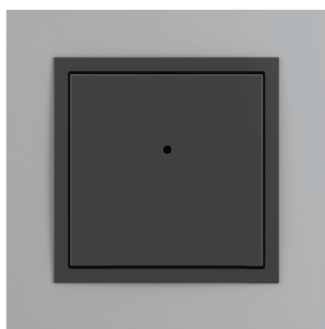
GSB3-60/W: 8595188132985



GSB3-80/W: 8595188132992

Example of connection





EAN code
 WSB3-20: 8595188132343
 WSB3-20H: 8595188132473

TECHNICAL PARAMETERS

INPUTS	WSB3-20	WSB3-20H
Temperature measuring:	YES, built-in temperature sensor	
Scope and accuracy of temp. measurement:	0 to +55°C ; 0.3°C from the range	
Number of control buttons:	2	
Humidity measurement:	No	Yes
Humidity measurement range:	-	0 to 99% Relative humidity
Humidity measurement accuracy:	-	± 3 % Relative humidity
Inputs:	2x AIN/DIN	
External temperature sensor:	Yes, the connection between AIN1/DIN1 and AIN2/DIN2	
Type ext. sensor:	TC/TZ	
Temperature measurement range:	-20 °C to +120 °C	
Temperature measurement accuracy:	0.5 °C from range	

OUTPUTS

Indication:	two-colored LED (red, green)
Number of outputs:	1

COMMUNICATION

Installation BUS:	CIB
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POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	25 mA (at 27V DC), from CIB BUS

CONNECTION

Terminals:	0.5 - 1 mm ²
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OPERATING CONDITIONS

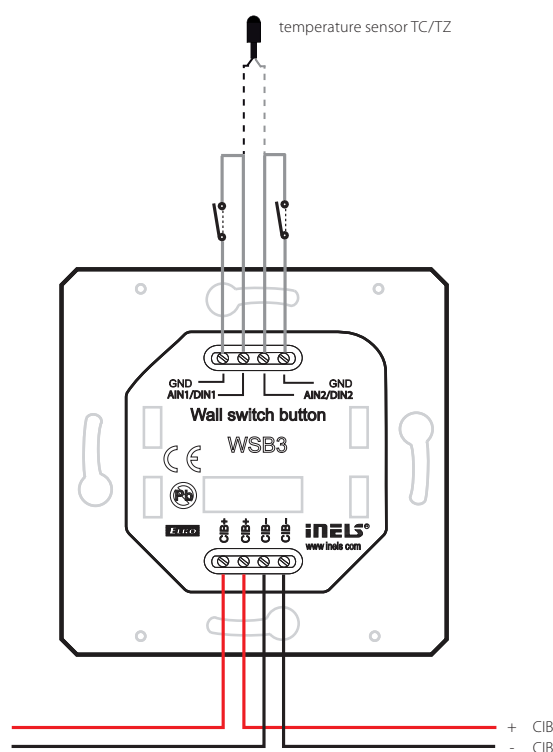
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20
Overvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	into installation box

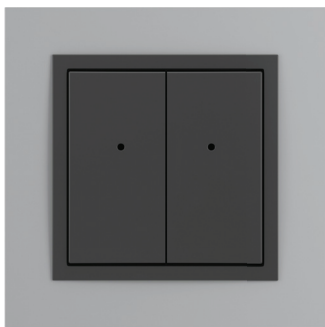
DIMENSIONS AND WEIGHT

Dimensions (plastic):	85.6 x 85.6 x 42 mm
Dimensions (metal, glass, wood, granite):	94 x 94 x 36 mm
Weight:	65 g (without frame)

- Wall controllers with low-upstroke control WSB3-20 and WSB3-20H are the main and most frequently used units (controller) in the iNELS system.
- Built-in micro-buttons with low upstroke offer elegant and easy control.
- Wall switches WSB3-20 and WSB3-20H are available in two-channel version.
- Double color (red/green) LED diode indicates either status of controlled appliances or status of any sensor or actuator in the system.
- Wall buttons in WSB3 series are compatible with both types of frames LOGUS⁹⁰ (85.6 x 85.6 or 94 x 94 mm), therefore you can combine them with double and triple frames and classic products of the series.
- Each controller is equipped with a temperature sensor. It is also equipped with two analog/digital inputs (AIN/DIN), which can be used to connect two potentialless contacts or one external temperature sensor TC/TZ (e.g. for measuring floor temperature).
- Wall button WSB3-20H is compared to the WSB3-20 additionally equipped with relative humidity meter.
- Compared to standard wall buttons WSB3-20 and WSB3-20H are more flexible and multifunctional. You can for example control appliances by short and long push of the button (e.g.: dimming, shutter control, scenes).
- Each button can control any appliance in the system and can use a variety of centralized or time controlled features. Accordingly, the customer can choose the simplicity / complexity of the operation. The big advantage is the possibility to change the method of control by only making software modifications without physical interventions into the structure of the building.
- Each button (fold) can have different functional modes beside lighting control:
 - Classic wall switch:
 - upper button ON, bottom button OFF.
 - Button controller (impulse relay):
 - first press ON, second press OFF.
 - Dimmer:
 - short press – ON/OFF.
 - Time switch:
 - ON after press, automatically OFF after set time.
 - Setting light scenes – for example: for watching TV:
 - shutters down
 - main light 30% intensity
 - wall lamps 50% intensity.
- WSB3 in LOGUS⁹⁰ design is designed for mounting into an installation box.

Example of connection





EAN code
 WSB3-40: 8595188132336
 WSB3-40H: 8595188133043

TECHNICAL PARAMETERS

INPUTS	WSB3-40	WSB3-40H
Temperature measuring:	YES, built-in temperature sensor	
Scope and accuracy of temp. measurement:	0 to +55°C ; 0.3°C from the range	
Number of control buttons:	4	
Humidity measurement:	No	Yes
Humidity measurement range:	-	0 to 99% Relative humidity
Humidity measurement accuracy:	-	± 3 % Relative humidity
Inputs:	2x AIN/DIN	
External temperature sensor:	Yes, the connection between AIN1/DIN1 and AIN2/DIN2	
Type ext. sensor:	TC/TZ	
Temperature measurement range:	-20 °C to +120 °C	
Temperature measurement accuracy:	0.5 °C from range	

OUTPUTS

Indication:	two-colored LED (red, green)
Number of outputs:	2

COMMUNICATION

Installation BUS:	CIB
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POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	25 mA (at 27V DC), from CIB BUS

CONNECTION

Terminals:	0.5 - 1 mm ²
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OPERATING CONDITIONS

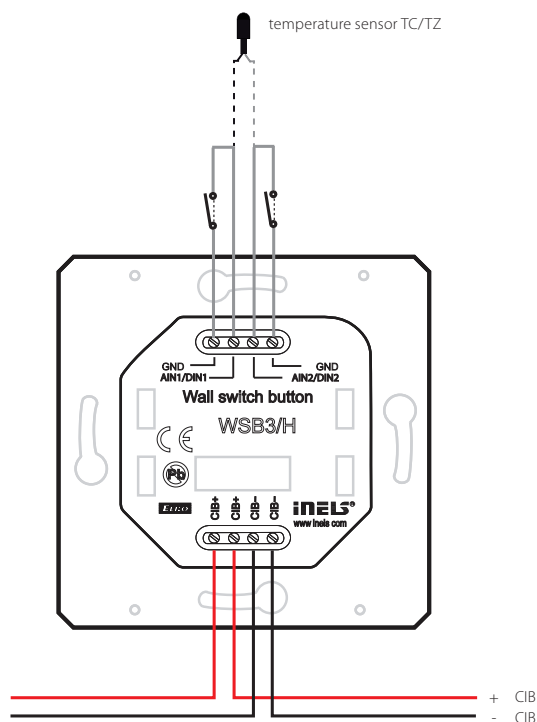
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP 20
Overvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	into installation box

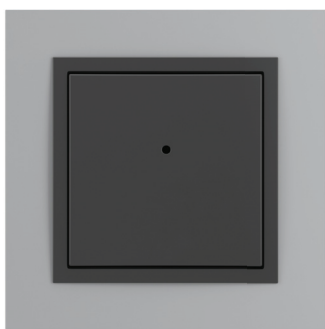
DIMENSIONS AND WEIGHT

Dimensions (plastic):	85.6 x 85.6 x 42 mm
Dimensions (metal, glass, wood, granite):	94 x 94 x 36 mm
Weight:	65 g (without frame)

- Wall mounted controllers with upstroke control WSB3-40 and WSB3-40H are the basic and most popular feature (control) of the iNELS system.
- Built-in micro-switch with low upstroke offers elegant and pleasant control.
- Controllers WSB3-40 and WSB3-40H are supplied with four channels.
- Two-coloured indication LEDs located in each controller, can signal the status of controlled appliances or the status of any sensor or actuator in the system.
- Wall buttons in WSB3 series are compatible with both types of frames LOGUS⁹⁰ (85.6 x 85.6 or 94 x 94 mm), therefore you can combine them with double and triple frames and classic products of the series.
- Each controller is equipped with a temperature sensor. It is also equipped with two analog/ digital inputs (AIN/DIN), which can be used to connect two potentialless contacts or one external temperature sensor TC/TZ (e.g. for measuring floor temperature).
- Compared to standard wall buttons WSB3-20 and WSB3-20H are more flexible and multifunctional. You can for example control appliances by short and long push of the button (e.g.: dimming, shutter control, scenes).
- Each button can control any appliance in the system and can use a variety of centralized or time controlled features. Accordingly, the customer can choose the simplicity / complexity of the operation. The big advantage is the possibility to change the method of control by only making software modifications without physical interventions into the structure of the building.
- Each button (fold) can have different functional modes beside lighting control:
 - a) Classic wall switch:
 - upper button ON, bottom button OFF.
 - b) Button controller (impulse relay):
 - first press ON, second press OFF.
 - c) Dimmer:
 - short press – ON/OFF.
 - d) Time switch:
 - ON after press, automatically OFF after set time.
 - e) Setting light scenes – for example: for watching TV:
 - shutters down
 - main light 30% intensity
 - wall lamps 50% intensity.
- WSB3 in LOGUS⁹⁰ design is designed for mounting into an installation box.

Example of connection





EAN code
WMR3-21: 8595188132756

- WMR3-21 is a wall-mounted card reader that is designed to read contactless media (smart cards, key chains, etc.).
- With the glass controller WMR3-21 users will appreciate the ease of control using two push buttons, which can be assigned different control functions (lighting, shading, scenes, heating, etc.).
- WMR3-21 reader can be used to control the security system (locking / unlocking) access system (opening doors, gates, etc.) or appliances (based on assigned rights).
- WMR3-21 supports RFID media with the carrier frequency of 13.56 MHz. Supported card types MIFARE DESFire 2K, 4K, 8K, MIFARE Ultralight.
- WMR3-21 is also equipped with 8A relay output with changeover contact $AgSnO_2$, by which controlled devices can be switched directly (or any actuator in the system can be set in software iDM3).
- Indication two-color LED in the controller cover can indicate not only the status of controlled appliance, but also the status of any sensor or actuator in the system.
- Wall card reader WMR3-21 is compatible with both types of frames LOGUS[®] (85.6 x 85.6 or 94 x 94 mm), therefore you can combine them with double and triple frames and classic products of the series.

TECHNICAL PARAMETERS

INPUTS

Number of control buttons: 2

RFID READERS

Supported frequencies: 13.5 MHz NFC
Card Type: MIFARE DESFire 2K, 4K, 8K, MIFARE Ultralight

OUTPUTS

Output: 1x changeover 8A / $AgSnO_2$
Indication: two-color LED (red, green)
Acoustic output: piezo-changer
Switching voltage: 230V AC / 30V DC
Switching output: 2000 VA/AC1; 240 W/DC
Peak current: 20 A / <3s
Insulation voltage between relay outputs and internal circuits: 3.75 kV, SELV according to EN 60950
Minimal switched current: 10 mA / 10 V
Switching frequency without load: 300 min⁻¹
Switching frequency with rated load: 15 min⁻¹
Mechanical life: 1x 10⁷
Electrical life AC1: 1x 10⁵

COMMUNICATION

Installation BUS: CIB BUS

POWER SUPPLY

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

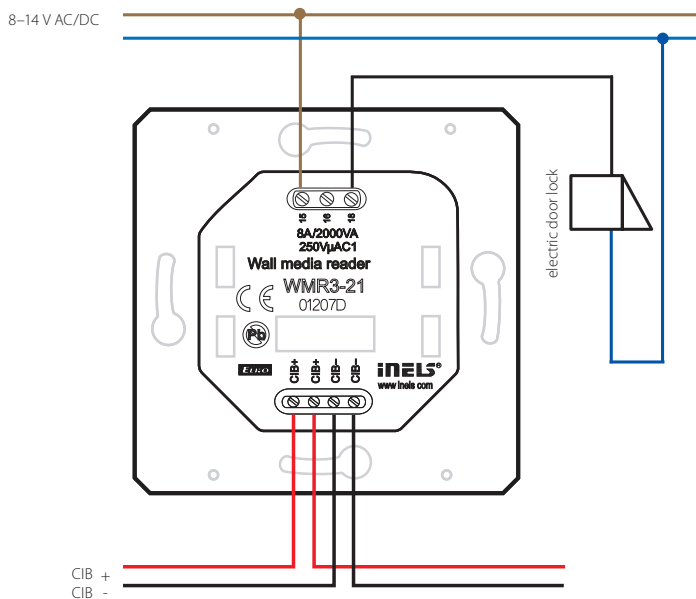
CONNECTION

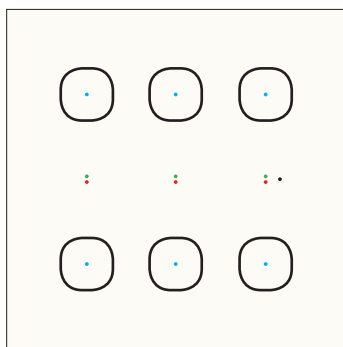
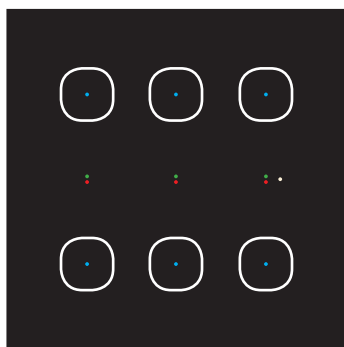
Data: terminals, 0.5 - 1 mm²
Network: max. 2.5 mm²/1.5 mm² with sleeve
Operating temperature: -20 to +55 °C
Storing temperature: -30 to +70 °C
Protection degree: IP20
Overvoltage category: II.
Pollution degree: 2
Operation position: any
Installation: into installation box

DIMENSIONS AND WEIGHT

Dimensions (plastic): 85.6 x 85.6 x 42 mm
Dimensions (metal, glass, wood, granite): 94 x 94 x 36 mm
Weight: 82 g (without frame)

Example of connection





EAN code
GMR3-61/B: 8595188155854

EAN code
GMR3-61/W: 8595188155793

TECHNICAL PARAMETERS

INPUTS

Temperature measuring:	YES, built-in temperature sensor
Scope and accuracy of temp. measurement:	0 to +55°C ; 0.3°C from the range
Number of control buttons:	6

RFID READERS

Supported frequencies:	13.5 MHz NFC
Card Type:	MIFARE DESFire 2K, 4K, 8K, MIFARE Ultralight

OUTPUTS

Indication:	3 pairs of LED (red, green)
Output:	1x changeover 8A / AgSnO ₂
Acoustic output:	piezo-changer
Switching voltage:	230V AC/ 30V DC
Switching output:	2000 VA/AC1; 240 W/DC
Peak current:	20 A/<3s
Insulation voltage between relay outputs and internal circuits:	3.75 kV, SELV according to EN 60950
Minimal switched current:	10 mA / 10 V
Switching frequency without load:	300 min ⁻¹
Switching frequency with rated load:	15 min ⁻¹
Mechanical life:	1x 10 ⁷
Electrical life AC1:	1x 10 ⁵

COMMUNICATION

Installation BUS:	CIB BUS
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POWER SUPPLY

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

CONNECTION

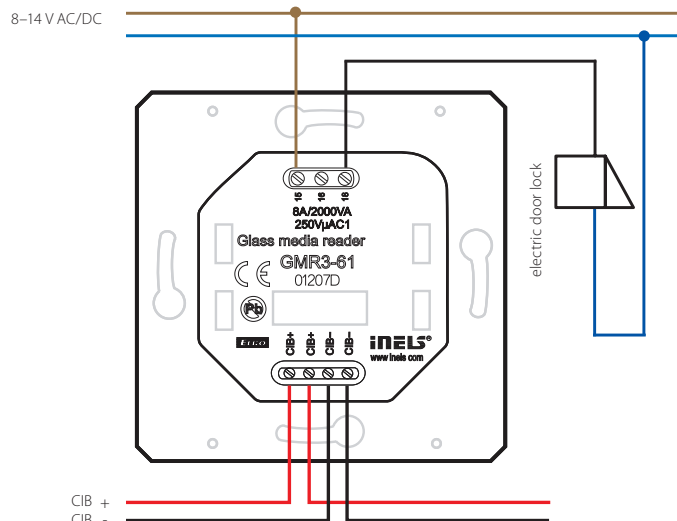
Data:	terminals, 0.5 - 1 mm ²
Network:	max. 2.5 mm ² /1.5 mm ² with sleeve

OPERATING CONDITIONS

Relative humidity:	max. 80 %
Operating temperature:	-20 to +55 °C
Storing temperature:	-30 to +70 °C
Protection degree:	IP20
Overvoltage category:	II.
Pollution degree:	2
Operation position:	any
Installation:	into installation box
Dimensions:	94 x 94 x 36 mm
Weight:	155 g

- Wall RFID card reader GMR3-61 is designed for reading of contactless media (chip cards, key fobs, tags, etc.), which are used for controlling access to buildings or parts of buildings.
- With the glass controller GMR3-61 users will appreciate the elegant design and the easy of control using six touch buttons, which can be assigned different control functions lighting, shading, scenes, heating, etc.
- GMR3-61 a design element of the (control) system iNELS and is available in black (GMR3-61/B) and white (GMR3-61/W) variants.
- GMR3-61 reader can be used to control the security system (locking / unlocking) access system (opening doors, gates, etc.) or appliances (based on assigned rights).
- GMR3-61 supports RFID media with the carrier frequency of 13.56 MHz. Supported card types MIFARE DESFire 2K, 4K, 8K, MIFARE Ultralight.
- The GMR3-61 is also equipped with 8A relay output with changeover contact AgSnO₂, which can be switched directly by reader (or by any controller in the system).
- Between each pair of touch keys is a pair of indicator LEDs (Green, Red) to indicate the status of the controlled appliance, or the state of any sensor or actuator in the system.
- Located on each touch button is a blue LED indicator, signalling the touch of a button. Touching may also be signalled by a vibrating pulse or audible tone - optionally in the software iDM3.
- All variants of GMR3-61 are available in sizes of luxury controllers LOGUS⁹⁰ (94 x 94 mm).
- GMR3-61 reader is equipped with a sensor of ambient light intensity. Based on information from the sensor can switch the orientation of blue LEDs on the touch-pad GSB3 or perform various actions with the software iDM3, eg. To control the lighting circuits in the corridor and others.
- GMR3-61 cannot be installed into multiple frames they are designed for mounting into installation boxes.

Example of connection





EAN code

EHT3 (white frame, white intermediate frame, white back cover): 8595188156196

TECHNICAL PARAMETERS

DISPLAY

Type:	colored TFT LCD
Aspect ratio:	3:4
Visible area:	52.5 x 70 mm
Backlight:	active
Touchpad:	4-wire resistive
Display:	3.5"
Number of points:	240 x 320
Color Depth:	16.7M (24 bit color)

POWER SUPPLY

Supply voltage / tolerance:	27 V DC, -20 / +10 %
Rated current:	150 mA (at 27V DC)

CONNECTION

Connection:	terminals
Connecting conductors profile:	max. 2.5mm ² /1.5mm ² with sleeve

OPERATING CONDITIONS

Operating temperature:	0 to +55°C
Storing temperature:	- 20 to +70°C
Protection degree:	IP20
Overvoltage category:	II.
Pollution degree:	2
Operating position:	any
Installation:	installation box

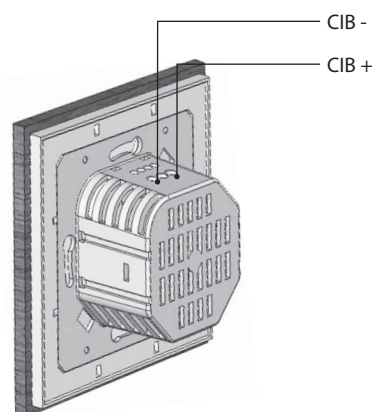
DIMENSIONS AND WEIGHT

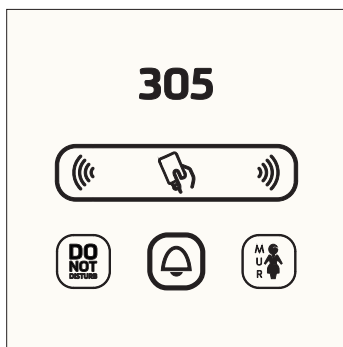
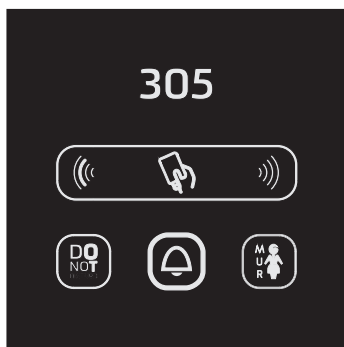
Dimensions:	94 x 94 x 36 mm
Weight*:	127 g

* Weight is listed with plastic frame.

- The control unit with touch screen EHT 3 is a suitable control element for iNELS in places where it is required to control multiple devices. The unit replaces multiple controllers and allows minimisation of the number of switches on the wall.
- The EHT3 is primarily designed to control hotel rooms (Guest Room Management System), but it can also be used in other projects such as a multi-function control panel.
- EHT3 offers a user-friendly interface to control the hotel room; it was designed so that guests could easily create an environment that allows them to feel like home.
- The unit can adjust the temperature (a version available is with setting options fan speed), light scenes, shielding, and music. It is also possible to transmit information regarding "Do Not Disturb" and "Make Up Room".
- The unit enables the control of volume, choice of Internet radio stations from the LARA Radio player, as well as the ability to select TV channels.
- DND and MUR information about the state of the rooms can be visualized on a glass RFID reader GHR3-11, which is positioned in the corridor at the entrance to the room, and the information can be sent directly to the front desk and entered by staff.
- EHT3 features a 3.5" color touchscreen with an aspect ratio of 3:4. The basic display resolution is 240 x 320 pixels. The color depth is 16.7 million colors (24 bit color, True Color).
- Using the sensor touchpad, buttons and symbols can be operated on the screen by a gentle touch of a finger. The symbols on the screen are by "pressing" animate an associated outlet in the system.
- EHT3 design is drawn into a row of instruments LOGUS⁹⁰ (EHT3 but you cannot install into multi-frames with other devices in this design) and is designed for mounting into installation box.

Connection





EAN code
GHR3-11/B: 8595188156172

EAN code
GHR3-11/W: 8595188156189

TECHNICAL PARAMETERS

INPUTS

Number of inputs: 1 – For Bell Function

RFID READERS

Supported frequencies: 13.56 MHz
Card Type: MIFARE DESFire 2K, 4K, 8K, MIFARE Ultralight

OUTPUTS

Signalling: 2x, Do Not Disturb, Make Up Room
Output: 1x changeover 8 A / AgSnO₂
Acoustic output: piezo-changer
Switching voltage: 230V AC/ 30V DC
Switching output: 2000 VA/AC1; 240 W/DC
Peak current: 20 A/<3s
Insulation voltage between relay
Outputs and internal circuits: 3.75 kV, SELV according to EN 60950
Minimal switched current: 10 mA / 10 V
Switching frequency without load: 300 min⁻¹
Switching frequency with rated load: 15 min⁻¹
Mechanical life: 1 x 10⁷
Electrical life AC1: 1 x 10⁵

COMMUNICATION

Installation BUS: CIB BUS

POWER SUPPLY

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

CONNECTION

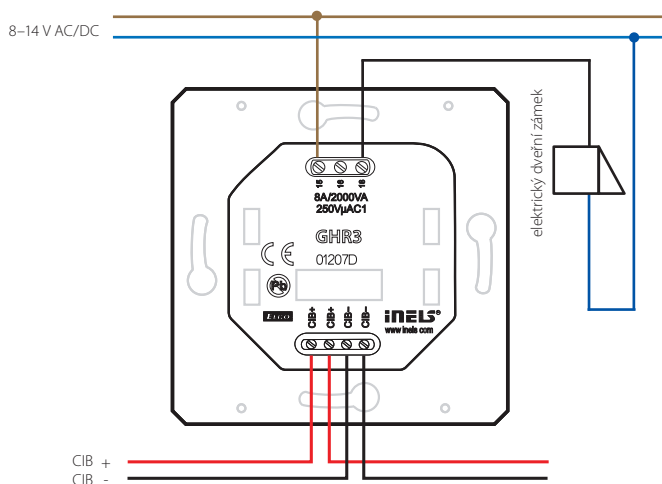
Data: terminals, 0.5 - 1 mm²
Network: max. 2.5 mm²/1.5 mm² with sleeve

OPERATING CONDITIONS

Relative humidity: max. 80 %
Operating temperature: -20 to +55 °C
Storing temperature: -30 to +70 °C
Protection degree: IP20
Overvoltage category: II.
Pollution degree: 2
Operation position: any
Installation: into installation box
Dimensions: 94 x 94 x 36 mm
Weight: 155 g

- Glass RFID card reader GHR3-11 is designed for reading of contactless media (chip cards, key fobs, tags, etc.), which are intended for entry to the hotel rooms and possibly also to other parts of the building.
- The GHR3-11 is a design element for the (control) iNELS system and is available in elegant black (GHR3-11/B) and white (GHR3-11/W) version.
- Entrance card reader GHR3-11 is the first device of Guest Room Management System) with whom hotel guests come into contact, and it was designed with an emphasis on representative design.
- GHR3-11 supports RFID media with the carrier frequency of 13.56 MHz. Supported card types MIFARE DESFire 2K, 4K, 8K, MIFARE Ultralight.
- GHR3-11 reader is equipped 8A relay Inputs with contact AgSnO₂ for door control.
- The controller is also equipped with touch button with function of the bell and two icons for signalling room status "Do Not Disturb" and "Make Up Room", the host can set out the state of the multi touch panel EHT3 inside the room.
- Printing of the controllers is possible in consultation with the manufacturer and also a change of room number can be printed on each controller as well as e.g. Hotel logo.
- All variants of GHR3-11 are available in sizes of luxury controllers LOGUS⁹⁰ (94 x 94 mm).
- GHR3-11 reader is equipped with a sensor of ambient light intensity. Based on information from the sensor can switch the lighting circuits in the corridor and others.
- GMR3-11 cannot be installed into multiple frames they are designed for mounting into installation boxes.

Example of connection





EAN code	
IDRT3-1 white:	8595188149488 (device, cover)
IDRT3-1 ivory:	8595188179614 (device, cover)
IDRT3-1 ice:	8595188179591 (device, cover)
IDRT3-1 pearl:	8595188179621 (device, cover)
IDRT3-1 aluminium:	8595188179584 (device, cover)
IDRT3-1 gray:	8595188179607 (device, cover)

TECHNICAL PARAMETERS

INPUTS

Temperature measuring:	YES, built-in thermo sensor
Range / accuracy of temp.measuring:	0 to +55°C; 0.3°C from range
Heating/cooling circuit correction:	±3, ±4 or ±5 °C
Manual on/of heating/cooling circuit:	2 x buttons
External temperature sensor:	Yes, the connection between AIN1/DIN1 and AIN2/DIN2
Type external sensor:	TC/TZ
Temperature measurement range:	-20°C to +120°C
Temperature measurement accuracy:	0.5°C from range

COMMUNICATION

Installation:	CIB
Display:	symbol display
Backlight:	YES

POWER SUPPLY

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

CONNECTION

Terminals:	0.5 - 1 mm ²
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OPERATING CONDITIONS

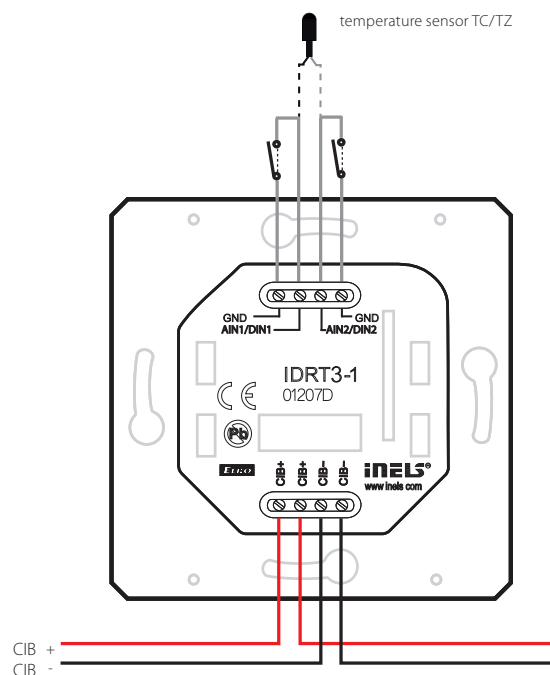
Operating temperature:	0 to +50 °C
Protection degree:	IP 20
Overvoltage category:	II.
Pollution degree:	2
Operation position:	vertical, downward with CIB terminal
Installation:	into installation box

DIMENSIONS AND WEIGHT

Dimensions (plastic):	85.6 x 85.6 x 50 mm
Dimensions (metal, glass, wood, granite):	94 x 94 x 50 mm
Weight:	73 g (without frame)

- IDRT3-1 is a digital wall temperature controller used to regulate the temperature in a room.
- Using the IDRT3-1, it is possible to correct the given heating/cooling circuit within a range of ±3, ±4 or ±5 °C (optional in SW iDM3).
- The temperature controller is equipped with an integrated heat sensor used to measure the room temperature. It is also equipped with two analog digital inputs (AIN/DIN), which can be used to connect two potential free contacts or a single external temperature sensor TC/TZ (e.g. for measuring the floor temperature).
- The display shows the current temperature and after pressing one of two buttons under the display, you can control the desired temperature.
- Readability improves after pressing one of the buttons to activate the backlight.
- Heating/cooling circuit is assigned with a thermo-regulator using iDM3.
- In the case of temperature correction within ±3, ±4 or ±5 °C, this change is valid until the next time mark within the time schedule established in iDM3.
- IDRT3-1 in design LOGUS⁹⁰ is intended for mounting into an installation box.

Example of connection





EAN code

LARA Radio white:	8595188148719
LARA Radio ivory:	8595188149242
LARA Radio ice:	8595188149228
LARA Radio pearl:	8595188149259
LARA Radio aluminium:	8595188149211
LARA Radio grey:	8595188149235
IR controller:	8595188149273

TECHNICAL PARAMETERS

INTERNET RADIO

Supported data transfer formats: mp3, ogg, acc

CONTROL / SETTINGS

Front panel:	touchscreen buttons
Remote control:	IR remote control (part of supply)
Communication Ethernet:	via PC setting up and communicating SW LARA Configurator
Button RESET:	restart product / reset product to factory settings

INTERFACE ETHERNET

Communications interface:	10/100 Mbps
Connector:	RJ45
Max. cable length UTP with power:	50 m

DISPLAY

Type:	color OLED
Resolution:	128 x 128 pixels
Visible surface:	26 x 26 mm

POWER SUPPLY PARAMETERS

Supply:	POE 24 V DC/1.25 A
Min. input:	1.4 W
Max. input:	26 W (peak at maximum playback performance)

AMPLIFIER PARAMETERS

Amplifier:	stereophonic class D with digital output control
Max. amplifier output:	2x10 W/8 Ω

INPUTS / OUTPUTS

Microphone:	no
Audio input:	3,5 stereo jack
Audio output 1:	terminals LINE OUT (used for external amplifier)*
Audio output 2:	terminals OUT L/OUT R (speaker output from int. amplifier)

CONNECTION

Terminal block:	0,5 - 1 mm ²
-----------------	-------------------------

OTHER DATA

Working temperature:	0 .. + 55 °C
Overvoltage category:	IP20
Pollution degree:	II.
Installation:	2
Dimensions:	in an installation box
Frame - plastic:	85 x 85 x 46 mm
Frame - metal, glass, wood, granite:	94 x 94 x 46 mm
Weight - plastic:	209 g (plastic frame)

- A music and Internet radio player - all in the dimension of a switch and a luxurious LOGUS⁹⁰ design.

- LARA Radio - when connected to the Internet, it can play streaming radio stations and you can store up to 40 of them. But you can also select from thousands of radio stations from across the globe, which provide data for correct connection.

- LARA Radio can play content from an external music source, which can be a smart phone or e.g. an MP3 player. These devices are connected to a 3.5mm stereo jack audio input, located underneath the front panel.

- LARA Radio can also play audio files from central data storage, onto which Logitech Media Server is installed. This LARA function can therefore be used within the complex iNELS system or as an entirely independent home automation device. When used within iNELS, control is a part of the complex application iHC. If using with NAS data storage, the application LARA NAS App is available.

- Touch control is performed on the device front panel (six capacity buttons available), or by infrared remote control, which is included in the product packaging.

- The basic device settings (network connection, language, audio input) are performed via the display and a simple menu controlled from capacity buttons on the device front cover. Further settings (selection of stations, connection with the server, updating firmware, etc.) are configured via computer and the software LARA Configurator.

- LARA Radio is equipped with an OLED colored display with the size of 1.5". The display also shows basic information about playing music, which also serves the orientation in the menu settings, etc.

- LARA Radio has an integrated amplifier with 2x 10 W output, thus greatly facilitating device installation in places where such output suffices. LARA is used e.g. to provide premium sound to the kitchen, bathrooms, waiting rooms, offices, reception desks, entrance halls, operating rooms or wellness facilities.

- LARA is powered by PoE with maximum voltage level 27 V DC / 1000mA. So connecting and communicating with just one cable (UTP) is a major advantage.

- For LARA, an entire series of accessories is ready for connection (PoE adapters, PoE switches), speakers (in a frame, walls or ceilings) and installation (cables, box, etc.).

- Complies with standards IEEE 802.3u (100BASE-Tx).

- Automatic cable crossing detection of Ethernet cable - MDIX.



EAN code

LARA Intercom white:	8595188149389
LARA Intercom ivory:	8595188149419
LARA Intercom ice:	8595188149396
LARA Intercom pearl:	8595188149426
LARA Intercom aluminium:	8595188149372
LARA Intercom grey:	8595188149402
IR controller:	8595188149273

TECHNICAL PARAMETERS

INTERNET RADIO

Supported data transfer formats: mp3, ogg, acc

CONTROL / SETTINGS

Front panel:	touchscreen buttons
Remote control:	IR remote control (part of supply)
Communication Ethernet:	via PC setting up and communicating SW LARA Configurator
Button RESET:	restart product / reset product to factory settings

INTERFACE ETHERNET

Communications interface:	10/100 Mbps
Connector:	RJ45
Max. cable length UTP with power:	50 m

DISPLAY

Type:	color OLED
Resolution:	128 x 128 pixels
Visible surface:	26 x 26 mm

POWER SUPPLY PARAMETERS

Supply:	POE 24 DC/1.25 A
Min. input:	1.4 W
Max. input:	26 W (peak at maximum playback performance)

AMPLIFIER PARAMETERS

Amplifier:	stereophonic class D with digital output control
Max. amplifier output:	2 x 10 W/8 Ω

INPUTS / OUTPUTS

Microphone:	yes
Audio input:	3.5 stereo jack
Audio output 1:	terminals LINE OUT (used for external amplifier)*
Audio output 2:	terminals OUT L/OUT R (speaker output from int. amplifier)

CONNECTION

Terminal block: 0.5 - 1 mm²

OTHER DATA

Working temperature:	0 .. + 55 °C
Overvoltage category:	IP20
Pollution degree:	II.
Installation:	2
Dimensions:	in an installation box
Frame - plastic:	85 x 85 x 46 mm
Frame - metal, glass, wood, granite:	94 x 94 x 46 mm
Weight - plastic:	209 g (plastic frame)

- LARA Intercom offers users 5 different functions and expands even more options to Lara Radio - music players and internet radio stations within the range of LOGUS⁹⁰ switch designs.

- LARA Intercom provides an extra functionality and videophone intercom.

- Thanks to videophone function, now it is possible to have a voice communication between LARA and the sound of the door (IP Intercom), so with someone visiting and standing in front of the house, we can see that on LARA display as part of this function which increases the security feeling and safety besides of course, the comfort for the user.

- LARA Intercom is equipped with an OLED colored display with the size of 1.5", which is used to transfer images and sounds from the door camera properly. The display also shows basic information about playing music, which also serves the orientation in the menu settings, etc.

- The intercom function can also be used for communications between all the family members throughout the whole house, thanks to two way voice communications possibilities between different LARA units.

- LARA Intercom continues to offer three functions that are also supported by LARA Radio - when connected to the Internet, it can play streaming radio stations and you can store up to 40 of them. But you can also select from thousands of radio stations from across the globe, which provide data for correct connection.

- LARA Intercom can play content from an external music source, which can be a smart phone or e.g. an MP3 player. These devices are connected to a 3.5mm stereo jack audio input, located underneath the front panel.

- LARA Intercom can also play audio files from central data storage, onto which Logitech Media Server is installed. This LARA function can therefore be used within the complex iNELS system or as an entirely independent home automation device. When used within iNELS, control is a part of the complex application iHC. If using with NAS data storage, the application LARA NAS App is available.

- Touch control is performed on the device front panel (six capacity buttons available), or by infrared remote control, which is included in the product packaging.

- The basic device settings (network connection, language, audio input) are performed via the display and a simple menu controlled from capacity buttons on the device front cover. Further settings (selection of stations, connection with the server, updating firmware, etc.) are configured via computer and the software LARA Configurator.

- LARA Intercom has an integrated amplifier with 2x 10 W output, thus greatly facilitating device installation in places where such output suffices. LARA is used e.g. to provide premium sound to the kitchen, bathrooms, waiting rooms, offices, reception desks, entrance halls, operating rooms or wellness facilities.

- LARA is powered by PoE with maximum voltage level 27 V DC / 1000 mA. So connecting and communicating with just one cable (UTP) is a major advantage.

- For LARA, an entire series of accessories is ready for connection (PoE adapters, PoE switches), speakers (in a frame, walls or ceilings) and installation (cables, box, etc.).

- Complies with standards IEEE 802.3u (100BASE-Tx).

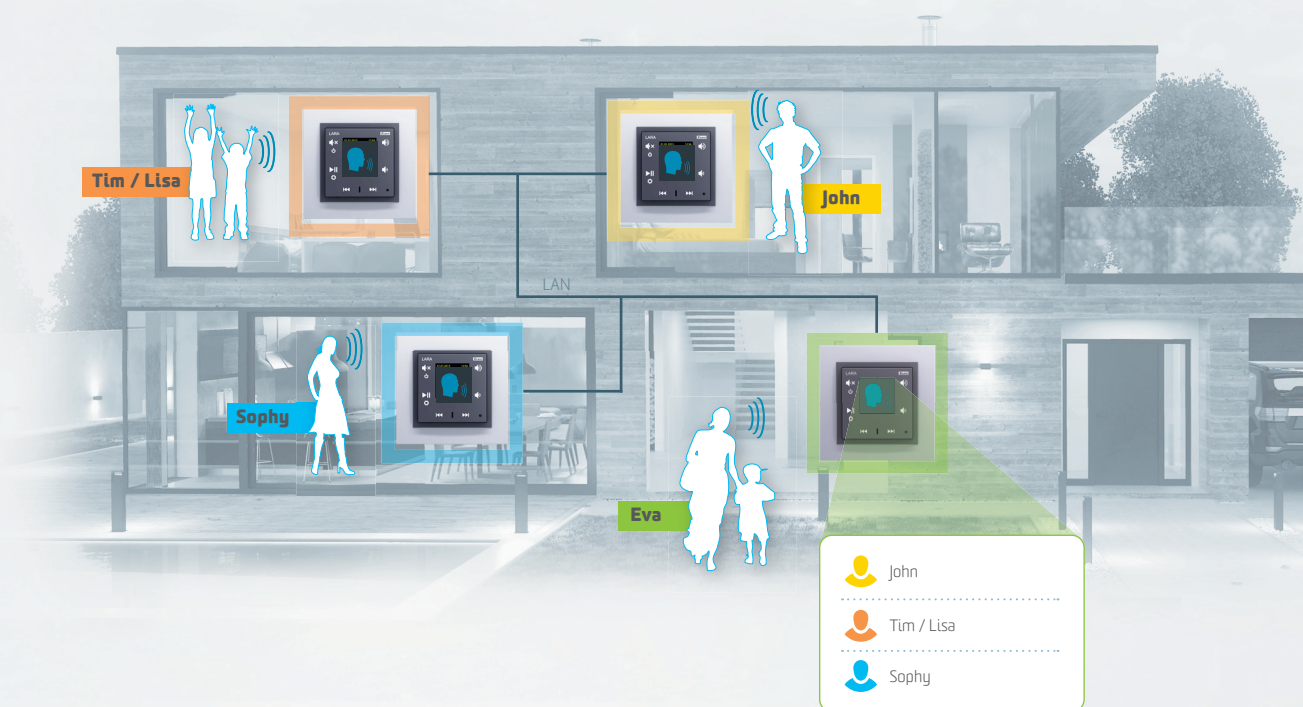
- Automatic cable crossing detection of Ethernet cable - MDIX.



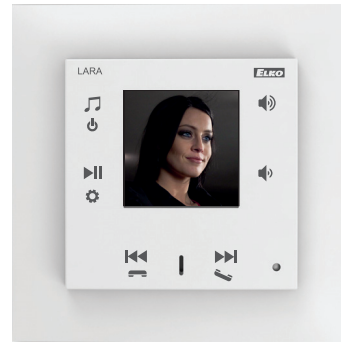
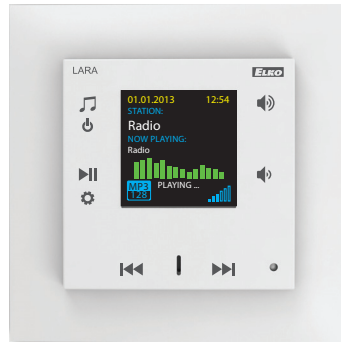
LARA Videophone



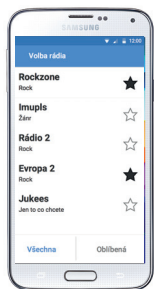
LARA Intercom



Control possibilities



Applications for Android and iOS provides control options: Audiozone / Select music / Create a playlist / Repeat



Android
LARA DIO

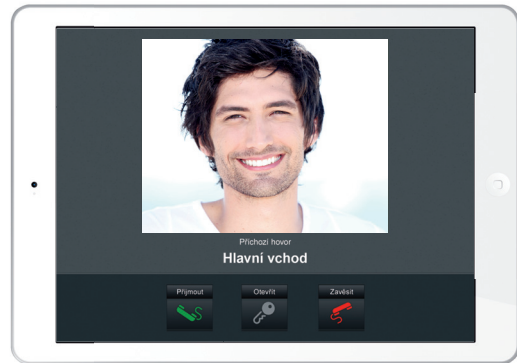


Android
LARA NAS



iOS
iHC-MI

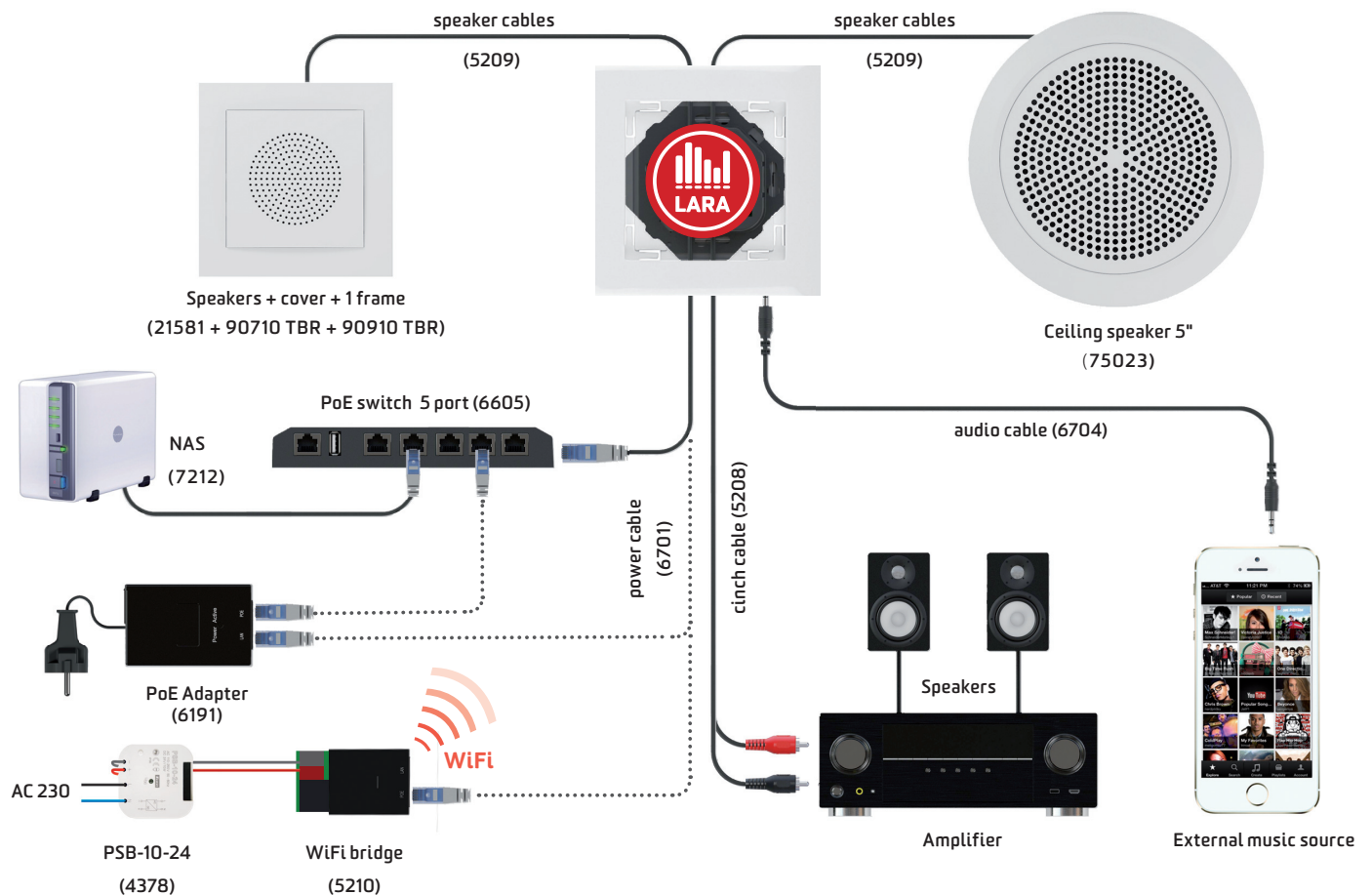
Android
iHC-MA



iOS
iHC-TI

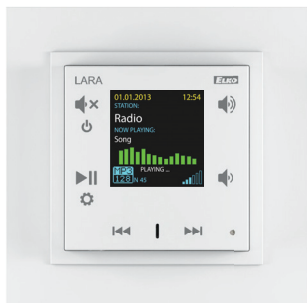
Android
iHC-TA

Connection



LARA in LOGUS⁹⁰ switch design

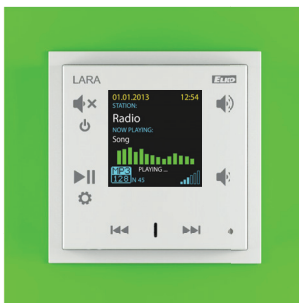
Choose from color combinations



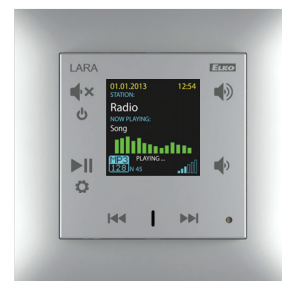
Cover: white
Frame: white (animato)



Cover: grey
Frame: grey (animato)



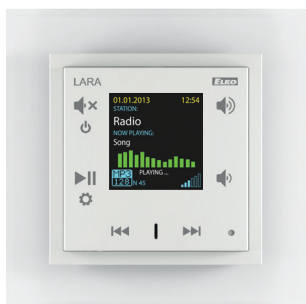
Cover: ice
Frame: green (animato)



Cover: aluminium
Frame: aluminium(aquarella)



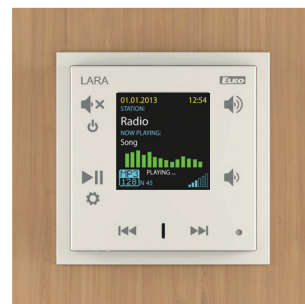
Cover: ice
Frame: aluminium (aquarella)



Cover: ice
Frame: glass (crystal)



Cover: ivory
Frame: titan (metallo)



Cover: pearl
Frame: cherry (arbore)

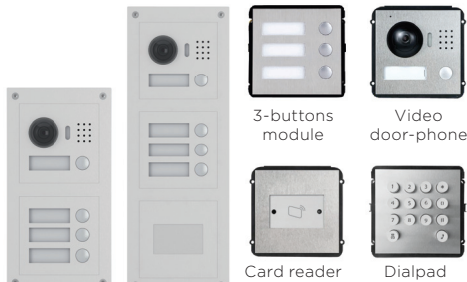
You can find all different types of color combinations including the ordering codes on our website
www.elkoep.com/lara or in our e-shop on www.eshop.elkoep.com

Accessories LARA Intercom

IP Intercoms



Producer: 2N
Type: Verso



Producer: DAHUA
Type: VTO2000a



Producer: Alphatech
Type: IP-Bold

Speakers and cables		Installation material	
	order code		order code
	AUX CABLE LARA (LARA CINCH CABLE) Used to connect LARA with exter. amplifier. Reduction 4pin from LARA LINE OUT to 2x CINCH plug into amplifier, length 2 x 20 cm.		1-FRAME 90910 TBR
	POWER SUPPLY (PSB-10-24) Switching stabilized power supplies with fixed output voltage, intended for mounting into an installation box (e.g. KU-68). PSB-10-24 - stabilized power supply 24V/10 W.		2-FRAME 90920 TBR
	AUX CABLE LARA (LARA AUDIO CABLE) Used to connect LARA with external music source (smart phone mp3 player). The length is 20cm terminated with 2x stereo jack 3.5mm.		3-FRAME 90930 TBR
	CEILING SPEAKER Speaker is suitable for the installation in suspended ceilings and hollow walls. Mounting hole diameter 143 mm, Power 15W, 32Ω speaker impedance.		4-FRAME 90940 TBR
	SURFACE SPEAKER Two-way speaker intended for mounting in a ceiling or on the walls: Power 15W, 32 Ω speaker impedance, dimensions 270x183x37 mm. Color: White		5-FRAME 90950 TBR
	NAS EXTERNAL STORAGE Two-chamber NAS server with the function of hosting, sharing and data security.		SURFACE MOUNT BOX 10976 ABR
	NETWORK CABLE, 0.2 M Flat white LAN cable CAT5, length 20 cm, terminated with 2x RJ45 plugs.		INSTALLATION BOX 1 GANG (KP 67/2) 6705
	NETWORK CABLE, 1 M Flat white LAN cable CAT5, length 1 m, terminated with 2x RJ45 plugs.		INSTALLATION BOX 2 GANG (KP 64/2) 6706
			INSTALLATION BOX 3 GANG (KP 64/3) 6707
			INSTALLATION BOX 4 GANG (KP 64/4) 6708
			INSTALLATION BOX 5 GANG (KP 64/5) 6709
			INSTALLATION BOX 1 GANG (KP 64/LD) 6710
			INSTALLATION BOX 2 GANG (KP 64/2L) 6711
			INSTALLATION BOX 3 GANG (KP 64/3L) 6712
			INSTALLATION BOX 4 GANG (KP 64/4L) 6713
			INSTALLATION BOX 5 GANG (KP 64/5L) 6714
			UNIVERSAL BOX 1068-02 6716
			UNIVERSAL BOX KUH 1/L NA 6717
Power supply and network			
	WiFi BRIDGE Used for LARA wireless connection via WiFi network.		
	PoE SWITCH - 5x RJ45 Provides LAN connectivity and PoE power supply for up to 5 x LARA.		
	PoE SWITCH - 8x RJ45 Provides LAN connectivity and PoE power supply for up to 8x LARA.		
Power sets			
	POWER SUPPLY PoE + WiFi INTO OR THE BOX WiFi bridge with PoE and power supply into an installation box. Power supply 230V.		5224
	POWER SUPPLY PoE INTO A BOX PoE injector with power supply intended for an installation box. Power supply 230 V.		5226
	PoE SUPPLY Power injector with plug-in adapter 230V.		5225
	POWER SUPPLY PoE + WiFi WiFi bridge with PoE plug in adapter 230 V.		5227



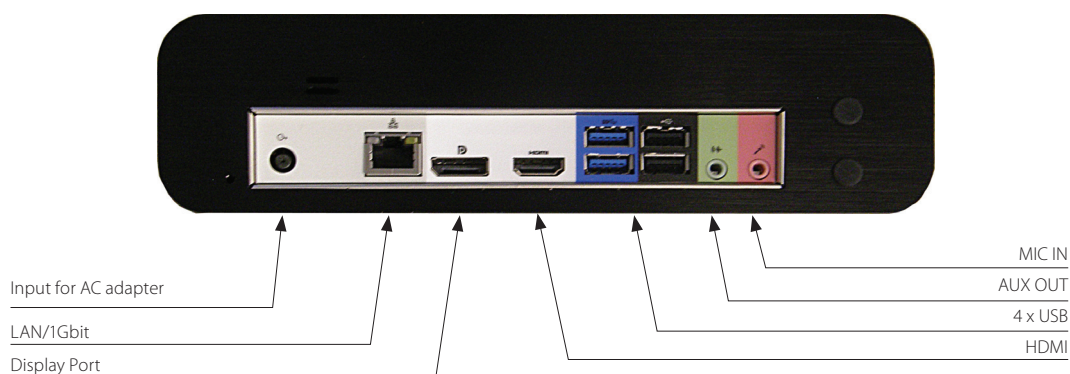
EAN code
iMM Client: 8595188149334

TECHNICAL PARAMETRES

Connection:	adapter 230 V (part of supply)
Video Output:	HDMI, display port
Audio Output:	3.5 mm stereo JACK out, HDMI
Audio Input:	3.5 mm stereo JACK in
Communication Interface:	ethernet port 1Gbps (RJ45)
Connecting peripherals:	2x USB 2.0, 2x USB 3.0
Storage:	SSD 60 GB
Dimensions:	228 x 62 x 185 mm
Color:	black

- The IMM device can operate in three different modes (the choice depends only on the SW configuration, HW is identical) and it can be used as part of a complex system of intelligent electrical installations iNELS or as an independent device for managing the multimedia in the house such as audio, video, photo, TV.
- In the IMM server mode, the IMM can be used to link almost all the different technologies in the house together and it enables us to control them all from one application which is called iNELS Home Control „iHC“ which can be installed in any smart phone or tablet.
- The IMM server for the „iHC“ application provides communication with the iNELS bus system, for example light control, heating, security, screening techniques and so on, even air conditioning; for example: an LG unit or a Coolmaster unit control, Daikin, Sanyo, Toshiba, Mitsubishi, Fujitsu and Hitachi. Recovery as well, such as Atrea or AirPohoda, webcams (thanks to the ONVIF protocol, which is supported by nearly 300 brands), household appliances such as Miele, the entrance syllables (SIP protocol support), multimedia (audio, video, TV, photo), a weather station or the measurement of energy consumption (electricity, water, gas).
- In the IMM mode the client serves as any device such as Video zone player.
- Video zones means television, from which you can watch TV programs, view photos, play music or movies from a central data repository. To control all TVs and also amplifiers at home you only need one controller, a smart phone or tablet with the „iHC“ application, possibly also a gyoscopic controller.
- Not only all the multimedia content is stored in one place, but it's also available within the whole house without having to transfer the multimedia files on CDs for example. With this central data repository the data can be played or displayed directly to any iMM server or also any NAS „Network Attached Storage“ for example. Synology.
- Additionally, we can control the whole electrical installations system iNELS from the TV screen, this also serves the other icons which are arranged on the image that contains the floor plan for example. that is a copy of the ground plan of the house.
- The third mode is iMM Client / Server, which is mainly used in installations with one Video zone, where devices also simultaneously fulfill the server function.
- By connecting and combining all these technologies, we can create different scenes, for instance; when the film starts playing by switching the projector the elevator starts moving, also when we expand the the screen projection we turn the lamps on, pull up the shutters and adjust the lighting scene. That can all be one with one touch.
- The video and audio transmission to your TV is running through the HDMI cable. Controlling the TV is then being done via the IP address, RS232 or an IR, which can be used with the eLAN-IR.
- The Audio 3.5 mm input can be used as a stereo jack for analog signal or an optical jack for digital output of the optical cable.

Description of connector panel





EAN code
 Connection Server: 8595188149204

TECHNICAL PARAMETRES

Connection:	MicroUSB 5V/1A
Video Output:	HDMI
Audio Output:	3.5 mm stereo JACK out
Communication Interface:	ethernet port 10/100 Mbps (RJ45)
Connecting peripherals:	2x USB 2.0
Dimensions:	100.6 x 73.5 x 26.5 mm

- The connection server is providing a communication environment between iNELS BUS System with the third party devices, for which their protocols are also translated and submitted.
- The iHC application's environment enables us to control all these technologies from just one app.
- The inclusion Connection Server to the system can be controlled from the application iHC except bus units (lighting, blinds, heating, etc.) also IP cameras, air conditioning, recuperation or domestic appliances Miele.
- It also allows the communication with the domestic voice intercom 2N. It can also arrange the information from the weather station Giom or data from energy meters (electricity, water, gas), which is visualized in clear graphs.
- The device connection server uses the Raspberry Pi hardware and the apps requires a license relative to the MAC address of the device.
- While connecting with the devices connection server, it's recommended to use an uninterruptible power supply (UPS), which ensures that, there will be no power outage.
- As a part of the package, we also included an SD card where we previously installed Linux OS on it and its needed software equipment.
- The configuratoin is happening on its own web interface, where the default IP address is not fixed. (The IP address is assigned from the DHCP server and it's needed to be known when we're connected to the network).

These protocols are being translated:

- XML RPC (for communication with iHC applications, Connection Server controls access to the central unit of iHC applications and allows access to it from multiple devices).
- ELKONET (for communication with the iNELS central unit).
- Miele@home 2.0 (for the communication with Miele Gateway and the domestic needs).
- VAPIX2, VAPIX3, ONVIF for cameras (which enables streaming up to 9 camera pictures together , PTZ controlling, recording on a network drive).
- Coolmaster (for communication with AC Daikin VRF, Sanyo VRF, Toshiba VRF, Mitsubishi Electric VRF, LG VRF, Fujitsu VRF, Mitsubishi Heavy VRF, Hitachi VRF).
- Atrea, AirPohoda (recuperation).
- NILAN (indoor climate solutions).
- SIP for domestic voice communication, for example: 2N (a communication between the iHC app or between individual iHC apps - VoIP).
- Giom3000 (displaying values from the weather station in the iHC app and using the information about the temperature, humidity and wind speed to an subsequent event, for example removing the shutters).

Comparing the function of the iMM Server to the Connection Server

	iNELS BUS System	iNELS RF Control	XML RPC (application iHC)	Videozones	Audiozones	eLAN-IR	Miele	IP cameras	Air-conditioning	Weather station GIOM3000	Weather station Klima sensor	Visualization of energy	Central Storage
iMM Server	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Connection Server	✓	✓	✓	X	X	X	✓	✓	✓	✓	✓	✓	X



EAN code
iMM Audio Zone-R: 8595188150125

TECHNICAL PARAMETRES

Connection:	MicroUSB 5V/1A
Video Output:	HDMI
Audio Output:	3.5 mm stereo JACK out
Communication Interface:	Ethernet port 10/100 Mbps (RJ45)
Connecting peripherals:	2x USB 2.0
Dimensions:	100.6 x 73.5 x 26.5 mm

- The iMM Audio zone-R serves as a player for the other Audio zones where we also can integrate the iMM server to the iNELS system.
- The iMM Audio zone-R allows us to play music which is stored on the network storage, which by itself could be an iMM server or NAS (Network Attached Storage), for example: Synology.
- The music is being played through the Logitech Media Server.
- We can control every iMM Audio zone-R in the system using the iHC application in any smart phone or a tablet, possibly from the iMM application TV picture (Video zone).
- The Audio zone is equipped with a stereo jack of 3.5mm output for supplying to the amplifier or active speakers.
- The Audio zone can be connected via an HDMI to a TV or a monitor with speakers and play music within these devices.
- An HDMI output for the connection of the monitor to determine the IP address service (see the instructions).
- 2x USB ports, for example for connecting a keyboard during the IP address determination process.
- 1x RJ45 for the connection to the computer or to an Ethernet Network.
- The configuration is done on their own web interface with the default IP address 192.168.1.220 (see separate manual, which is available on the product packaging and www.elkoep.cz and www.inels.cz).
- The actual configuration of the iNELS system takes place on the web interface of the iMM server (iMM Control Center), more info on the iMM construction.
- As a part of the package, we also included an SD card where we previously installed Linux OS on it and its needed software equipment.

Infrastructure example





EAN code
eLAN-IR-003: 8595188132831

TECHNICAL PARAMETRES

IR SENSOR - LEARNING MODE

Sensor IR:	Infrared sensor for learning IR codes
The carrier IR frequency:	20 - 455 kHz
Learning distance:	till 1m

OUTPUTS

Output:	3x IR transmitter
Connection:	3x 3.5 Jack connector, cable length 3 m
Output indication:	3x LED green status IR1-IR3
Range:	Up to 1m from the device

ETHERNET COMMUNICATION

Indication of ETH operating status:	Green LED
Indications of ETH communication:	Yellow LED
Communication Interface:	10/100 Mbps (RJ45)
Default IP address:	192.168.1.1

POWER SUPPLY

Voltage supply / jm. current:	10-27 V DC / 200 mA (safe low voltage)
Connection:	Jack connector Ø 2.1 mm
Voltage supply indication:	Green LED

OTHER DATA

Other possibilities of wiring:	USB-B connector
Indication:	Yellow USB LED status
Reset button:	settings to their default values
Power supply:	230 VAC / 12 V DC supplied with the data logger

OPERATING CONDITIONS

Operating temperature:	-20 .. +55 °C
Storage temperature:	-25 .. +70 °C
Protection degree:	IP 30
Pollution degree:	2
Operation position:	arbitrary
Installation:	free
Provedení:	design box

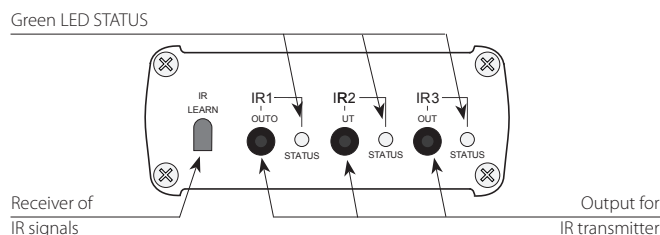
DIMENSIONS AND WEIGHT

Dimensions:	90 x 52 x 65 mm
Weight:	136 g

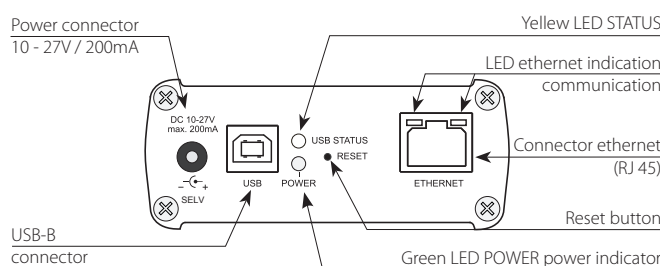
- The applications iHC-MAIR and iHC-MIIR provide universal control for all Audio/Video devices (including air conditioning).
- The application is connected via smart phone connected to the smart IR box eLAN-IR-003, which communicates with Audio/Video devices via IR sensor.
- The intuitive application environment makes it simple for anyone to control.
- What all can you control? home theater, TV, DVD or Blue Ray player, amplifier, set-top box, satellite receiver, air-conditioning, projector and more...
- It can control up to 100 arbitrary commands with various controllers that you normally have at home.
- The scenes function, where, you perform multiple functions simultaneously by a single command (e.g. you are going to bed you and switch off all AV appliances in the entire home with a single press).
- It is possible to integrate into a single application an unlimited number of IR boxes, meaning that in one application, you have control over the living room, children's rooms, etc.
- It is also possible to control remotely from anywhere using a Wi-Fi network (e.g. from work or vacation).
- Thanks to auto-IP acquisition from the DHCP server, you need not set up a network (if you have no set fixed IP address).
- You can connect three sensors to the smart IR box eLAN-IR-003 for three directions of control.

Example of connection

The front panel of eLAN-IR-003























The back panel of eLAN-IR-003



Controller options menu in the application



 Controlling appliances	 Dimming lights	 Controlling blinds	 Heating regulation	 Controlling household appliances	 Controlling appliances	 Dimming lights	 Controlling blinds	 Heating regulation	 Controlling household appliances
 Weather station	 Video cameras (outdoor/indoor)	 Air conditioning	 Door communicator	 Video Zone (controlling via TV)	 Weather station	 Video cameras (outdoor/indoor)	 Air conditioning	 Door communicator	 Video Zone (controlling via TV)

Connection Server



This is a in communicating with the central unit CU3 and third-party devices, for which it translates their protocols and enables their control from a single application of iNELS Home Control.

Besides normal control of the electrical installation, it enables visualizing consumed energy, controlling air-conditioning, recuperation, household appliances, video cameras or communicating with the door communicator.

iMM Server



Multimedia server enabling everything that the Connection Server does, and also serves as a VideoZone player, where via the TV screen, you can watch TV, browse photos, play the radio or movies from central data storage anywhere in the home, but also control the entire electrical installation.

iHC-MA



Smartphone

iHC-TA



Tablet

iHC-MI



iPhone

iHC-TI



iPad

Applications for system control for your tablet or smartphone

Development of smartphones and tablets and development of applications for these devices go together. You can control your electro-installation through the applications in your iPhone, iPad, Smartphone or tablet with the Android operating system. As opposed to our competitors, we provide you a solution assuring you that your household appliances can be controlled through just one application. You will find here whatever you need – it provides you full managing, monitoring and checking of your house.

You can control not only lighting or heating, but also it enables you to switch the TV programs, play music and control air conditioning. iHC is an acronym of iNELS Home Control and letters after the hyphen means devices (T= tablet, M = mobile / smartphone) and operating system (Android = A, I = iOS / Apple).

They are FREE for download at the AppStore and GooglePlay (Play Store).

You can also try out our PROMO application, in which in real time, you control our showrooms in Prague or Holešov.



		iNELS BUS System (bus electro installation)					iNELS RF Control (wireless electro installation)		
		Android		iOS		Linux	Android	iOS	Smart TV
		Tablet	Telefon	iPad	iPhone	TV	iPad	iPhone	Smart TV
		iHC-TA	iHC-MA	iHC-TI	iHC-MI	iMM	iHC-MARF	iHC-MIRF	iHC-TVC
BUS & RF	Lighting	✓	✓	✓	✓	✓	✓	✓	✓
	Blinds	✓	✓	✓	✓	✓	✓	✓	✓
	Socket	✓	✓	✓	✓	✓	✓	✓	✓
	Garage doors, gates	✓	✓	✓	✓	✓	✓	✓	✓
	RGB bulbs, LED strips	✓	✓	✓	✓	✓	✓	✓	✓
	Scenes	✓	✓	✓	✓	✓	✓	✓	✓
	Heating	✓	✓	✓	✓	✓	✓	✓	○
Third Parties Integration	Multimedia	✓	✓	✓	✓	✓	✗	✗	✗
	Cameras	✓	✓	✓	✓	✓	✓	✓	✓
	Air-conditioning	✓	✓	✓	✓	✓	✗	✗	✗
	Recuperation	✓	✓	✓	✓	✓	✗	✗	✗
	Home appliances (MIELE)	✓	✓	✓	✓	✓	✗	✗	✗
	Weather station	✓	✓	✓	✓	✓	✗	✗	✗
	Measurement and visualization of energy	✓	✓	✓	✓	✓	○	○	✗
	Door communicator and Intercom	✓	✓	✓	✓	✓	✗	✗	✗

The list of supported third-party systems is available on our web page www.inels.com

- ✓ Supported
- Coming soon
- ✗ Not supported

iHC - TA

iHC - MA

iHC - TI

iHC - MI

iHC - MARF

iHC - MIRF

Applications are **FREE** to download at or and are supported by Android OS 2.3 or later and iOS

www.inels.cz/produkty/aplikace



EAN code
 TELVA 230V, NC: 8595188166010
 TELVA 230V, NO: 8595188166027
 TELVA 24V, NC: 8595188166034
 TELVA 24V, NO: 8595188166041

- The thermo-regulation drive TELVA is used to control underfloor and radiator hot-water heating.
- It is known for its quiet operation. It has a built-in valve position indicator.
- By mounting using the VA valve adapter, the thermo-regulation drive TELVA is applicable for a wide range of thermostatic valves available on the market.
- Design:
 - without voltage open (NO)
 - without voltage closed (NC)
- Types:
 - TELVA 230V, NO
 - TELVA 230V, NC
 - TELVA 24V, NO
 - TELVA 24V, NC
- Type of use:
 - Switching units of the series SA3 are used within the bus system iNELS BUS to control TELVA thermodrives.

TECHNICAL PARAMETERS

	TELVA 230 V	TELVA 24 V
Operating voltage:	230V, 50/60 Hz	24V, 50/60 Hz
Switching current max:	300 mA for max. 200 ms	250 mA for max. 2 min
Operating current:	8 mA	75 mA
Closing / opening time:	dtto 3 min.	dtto 3 min.
Power input:	1.8 W	1.8 W
Protection:	IP 54/II	IP 54/II
Settings:	4 mm	4 mm
Stopping force:	100 N ±5 %	100 N ±5 %
Cable length:	1 m	1 m
Connecting wire:	2 x 0.75 mm ²	2 x 0.75 mm ²
Media temperature:	0 to +100 °C	0 to +100 °C
Color:	white RAL 9003	white RAL 9003
Dimensions h/w/d:	55+5 x 44 x 61 mm	55+5 x 44 x 61 mm

It is generally supplied with a valve adapter VA-80 in low design with bar M30 x 1.5 (white-gray), which may not be compatible with all types of valves.

Internal antenna **AN-I**, External antenna **AN-E**

Internal antenna AN-I



- into plastic switchboard
- rod angle, without cable
- sensitivity 1 dB
- the internal antenna is included in the standard package

EAN code
 Internal antenna AN-I: 8595188161862

External antenna AN-E



- for mounting into metal switchboard
- cable length 3m
- sensitivity 5 dB
- the external antenna AN-E is supplied on request only

EAN code
 External antenna AN-E: 8595188190121



- Thermister temperature sensors are made of Negative Temperature Co-efficient (NTC) embedded in a PVC or metal sleeve with a thermally-conductive sealer.
- Sensor TC - lead-in cable to sensor TC is made of wire CYSY 2D x 0.5 mm/ 0.02".
- Sensor TZ
 - cable VO3SS-F 2D x 0.5 mm /0.02" with silicone insulation for use in high temperature applications.
 - silicone insulation for use in high temperature applications.
- Sensor Pt100 - shielded silicon 2x 0.22 mm² (AWG 21), shielding connected with a case.
- We are preparing:
 - During the course of 2016, we are adding to our assortment the sensors Pt1000, which are supported for units of the series TI3.

EAN code

TC-0:	8595188110075	TZ-0:	8595188140591	Pt100-3:	8595188136136
TC-3:	8595188110617	TZ-3:	8595188110600	Pt100-6:	8595188136143
TC-6:	8595188110082	TZ-6:	8595188110594	Pt100-12:	8595188136150
TC-12:	8595188110099	TZ-12:	8595188110587		

TECHNICAL PARAMETERS

	TC	TZ	Pt 100
Range:	0 °C to +70 °C	-40°C to +125°C	-30°C to +200°C
Scanning element:	NTC 12K 5 %	NTC 12K 5 %	Pt100
In air/ in water:	(τ65) 92 s / 23 s	(τ65) 62 s / 8 s	(τ0.5) - / 7 s
In air/ in water:	(τ95) 306 s / 56 s	(τ95) 216 s / 23 s	(τ0.9) - / 19 s
Cable material:	High temperature PVC	Silicone	Silicone
Terminal material:	High temperature PVC	Nickel plated copper	Copper
Protection degree:	IP 67	IP 67	IP 67
Insulation:	-	-	double insulation silicone
Types of temperature sensors:			
	TC-0	TZ-0	-
- length:	100 mm	110 mm	-
- weight:	5 g	4.5 g	-
	TC-3	TZ-3	Pt100-3
- length:	3 m	3	3 m
- weight:	108 g	106 g	68 g
	TC-6	TZ-6	Pt100-6
- length:	6 m	6 m	6 m
- weight:	213 g	216 g	149 g
	TC-12	TZ-12	Pt100-12
- length:	12 m	12 m	12 m
- weight:	466 g	418 g	249 g

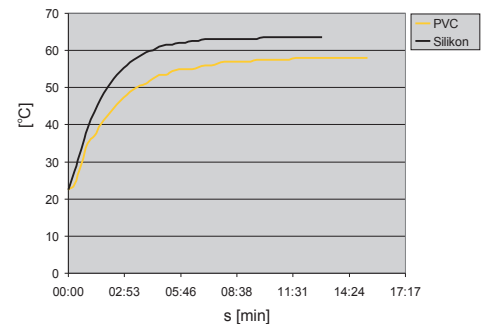
τ65 (95): time, which sensor needs to heat up on 65 (95) % of ambient temperature of environment, in which is located.

Resistive values of sensors in dependance on temperature

Temperature (°C)	Sensor NTC (kΩ)	Sensor Pt100 (Ω)
20	14.7	107.8
30	9.8	111.7
40	6.6	115.5
50	4.6	119.4
60	3.2	123.2
70	2.3	127.1

Tolerance of sensor NTC 12 kΩ is ± 5% by 25 °C/ 77°F.
Long-term resistance stability by sensor Pt100 is 0.05% (10 000 hours).

Diagramm of sensor warm up via air

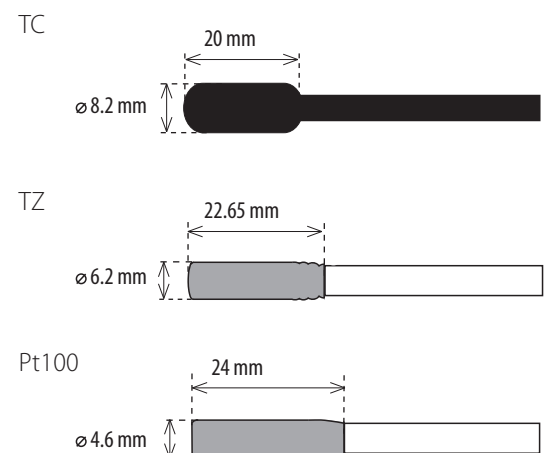


PVC -reaction to water temperature from 22.5 °C to 58°C.
Silicone - reaction to water temperature from 22.5°C to 63.5°C.



















Sensor photo







































Drawing





















Loadability of contacts

GHR3-11; GMR3-61; SA3-02B; SA3-06M; SA3-012M; WMR3-21									
Type of load	 cos φ ≥ 0.95 AC1	 AC2	 AC3	 AC5a uncompensated	 AC5a compensated	 AC5b	 AC6a	 AC7b	 AC12
Contact material AgSnO ₂ contact 8A	250V / 8A	250V / 2.5A	250V / 1.5A	230V / 1.5A (345VA)	230V / 1.5A (345VA) till max output C=14uF	250W	250V / 4A	250V / 1A	250V / 1A
Type of load	 AC13	 AC14	 AC15	 DC1	 DC3	 DC5	 DC12	 DC13	 DC14
Contact material AgSnO ₂ contact 8A	x	250V / 3A	250V / 3A	24V / 8A	24V / 3A	24V / 2A	24V / 8A	24V / 1A	x





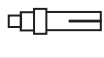


LBC3-02M; SA3-01B; SA3-02M; SA3-04M									
Type of load	 cos φ ≥ 0.95 AC1	 AC2	 AC3	 AC5a uncompensated	 AC5a compensated	 AC5b	 AC6a	 AC7b	 AC12
Contact material AgSnO ₂ contact 16A	250V / 16A	250V / 5A	250V / 3A	230V / 3A (690VA)	230V / 3A (690VA) till max output C=14uF	1 500W	x	250V / 3A	250V / 10A
Type of load	 AC13	 AC14	 AC15	 DC1	 DC3	 DC5	 DC12	 DC13	 DC14
Contact material AgSnO ₂ contact 16A	250V / 6A	250V / 6A	250V / 6A	24V / 16A	24V / 6A	24V / 4A	24V / 16A	24V / 2A	24V / 2A

SA3-02B/Ni; SA3-06M/Ni; SA3-012M/Ni									
Type of load	 cos φ ≥ 0.95 AC1	 AC2	 AC3	 AC5a uncompensated	 AC5a compensated	 AC5b	 AC6a	 AC7b	 AC12
Contact material AgNi* contact 8A	250V / 8A	250V / 2.5A	250V / 1.5A	230V / 1.5A (345VA)	x	400W	x	250V / 1.5A	250V / 5A
Type of load	 AC13	 AC14	 AC15	 DC1	 DC3	 DC5	 DC12	 DC13	 DC14
Contact material AgNi* contact 8A	250V / 3A	250V / 3A	250V / 3A	24V / 8A	24V / 3A	24V / 2A	24V / 8A	24V / 1A	24V / 1A

SA3-01B/Ni; SA3-02M/Ni; SA3-04M/Ni									
Type of load	 cos φ ≥ 0.95 AC1	 AC2	 AC3	 AC5a uncompensated	 AC5a compensated	 AC5b	 AC6a	 AC7b	 AC12
Contact material AgNi* contact 16A	250V / 16A	250V / 5A	250V / 3A	230V / 3A (690VA)	x	800W	x	250V / 3A	250V / 10A
Type of load	 AC13	 AC14	 AC15	 DC1	 DC3	 DC5	 DC12	 DC13	 DC14
Contact material AgNi* contact 16A	250V / 6A	250V / 6A	250V / 6A	24V / 16A	24V / 6A	24V / 4A	24V / 16A	24V / 2A	24V / 2A









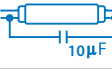


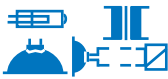
Demonstrated symbols are informative.

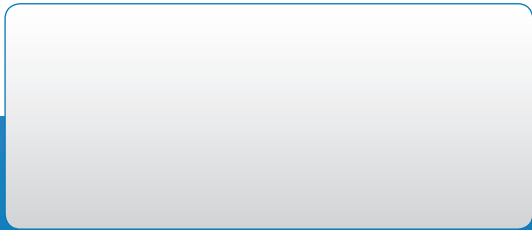
*Products with AgNi contact only up on request for extra charge.

Load	bulbs, halogen bulbs	12-24V low-voltage bulbs, coil transformers	12-24V low-voltage bulbs, electric transformers	LEDs	energy-saving fluorescent tubes	control method	
							
	R	L	C	230V AC dimmable	dimmable	entering edge	trailing edge
DA3-22M	●	●	●	●	●	●	●

MINIMUM LOAD		
RELAY CONTACT	mV	V/mA
AgSnO ₂	1000	10/100

MINIMUM LOAD		
RELAY CONTACT	mV	V/mA
AgNi	300	5/10

Explanations			
	<u>El. bulbs loads:</u> el. bulb, halogen light	(R)	 <u>Switch:</u> switch - control contact of various device
	<u>Dimmer with defined load:</u> R - resistive, L - inductive, C - capacitive		 <u>Button:</u> control button
	<u>Fluorescent light:</u> fluorescent lights uncompensated		 <u>Control module:</u> analog control module 0 - 10 V
	<u>Fluorescent light:</u> fluorescent light compensated in series		 Motor
	<u>Fluorescent light:</u> fluorescent light compensated in parallel		AC1 non-inductive or low inductive loads resistive furnaces
	<u>Fluorescent light:</u> fluorescent light economical		AC3 motors with short-way armatur, start-up of motors in operation
	Elektronic ballasts for fluorescent		AC15 managemens of AC electromagnetic loads
	<u>Inductive loads (transformers):</u> feromagnetic and toroid transformers for lights with various voltage.	(L)	DC1 non-inductive or low inductive loads, resistive furnaces



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