

Highlights Spring 2020

News from iNELS & ELKO EP World.



www.elkoep.com

HOTEL INFO

Total rooms

Free rooms

Booked Rooms

Occupied rooms

NEWS

NEW RELAYS

GLASS TOUCH WIRELESS CONTROLLERS

IN-GLASS SWITCH WITH DIMMER
and wireless control

ENERGY GATEWAY APPLICATION
Improved app for RFPM-2

DO YOU PREFER SHARP OR ROUND?

RESERVATION SYSTEM

THE NEW miniCU
- world's smallest central unit

CONTROL iNELS BY VOICE
Google Home a Amazon Alexa in iNELS service

PABLIKO VOTING SYSTEM
with our controllers for current and new representative rooms

REFERENCES

iNELS[®]

www.inels.com

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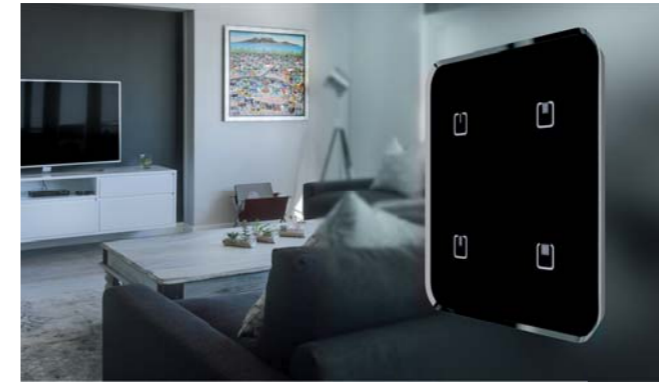
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Improved and new relays
durable, accurate

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In-glass switch with integrated dimmer and wireless control

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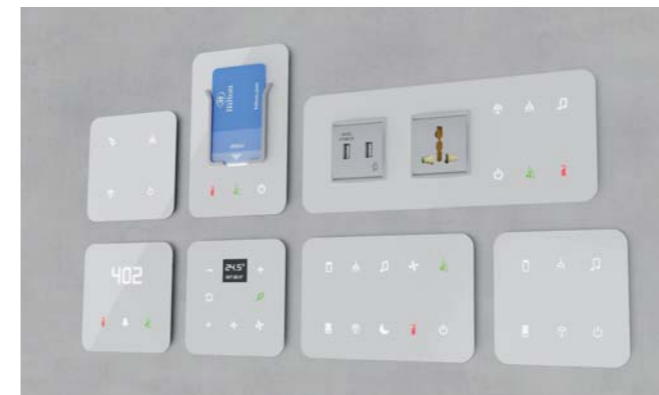
Control iNELS via TV
App for Samsung Smart TV

... see pages **18-19**



Glass touch wireless controllers

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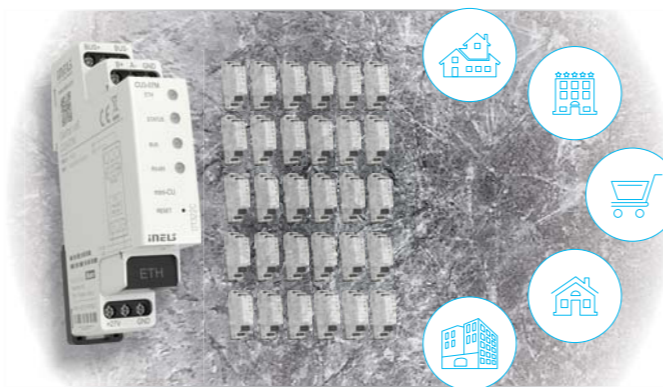
Do you prefer sharp or round?
New range of round glass GRMS controllers

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Reservation and access system
for hotel and pension reception

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The new miniCU - world's smallest central unit
Small, performance and safe

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Control iNELS by voice
Amazon Alexa and Google Home together with iNELS Cloud

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Pabliko voting system
iNELS (RF&BUS) in Municipalities

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PRODUCTS PORTFOLIO

Timers /Relays



A wide range of electronic modular devices, which bring new possibilities to home and office control, monitoring and security, as well as to industrial process control: time relays, installation contactors, staircase automatic switches, time switches clocks, thermostats, power supplies units, etc.

Protection monitoring relays



Every household, every object and every machine needs a monitoring relay. There are several reasons why, overvoltage, undervoltage, phase failure, asymmetry, frequency, or power factors.

iNELS Air - IoT devices



iNELS Air is a response to the dynamically developing network for IoT (Internet of Things). The product group includes sensors and detectors for communication on the Sigfox, LoRa and NB-IoT protocol.



Wireless home automation (RF)



The system uses wireless communication between devices. The installation itself is variable thanks to this communication and can be gradually expanded.

Wired home automation (BUS)



The BUS system offers a unique solution for new installations in family houses, hotels and villas. It offers a wide range of functions for both automation and comfort.

Energy management



Measuring energy consumption in the home or in larger areas is an increasing trend. Our products provide measurement with three different technologies - using a BUS or wireless system and thanks also with the IoT.

Hotel Wireless Retrofit (HRESK)



Hotel Room Energy Saving Kit - Solutions for hotel rooms based on wireless technology is designed to function in existing hotels. It is possible to simply elevate the existing electrical installation to a higher level without long-lasting construction modifications.

Guest Room Management System



Guest Room Management System - The BUS system is designed mainly for hotels and offers comfortable and easy control of hotel rooms, reception and restaurant.

Building management system



Building Management System is a comprehensive solution for monitoring, and controlling even the most complex of building systems. You can monitor everything on your computer monitor or tablet in the comfort of reception or office.

Lighting control



A sector that offers complete control over all lighting devices. From switching, dimming to controlling your favourite DALI luminaires. Everything can be controlled with a connection to iNELS wired or wireless technology.

Multimedia



Here you can find extensions for our iNELS system and not just for it. Lara Music Players, Intercoms and Door Communicators, Application Communication Servers and 3rd party applications.

Switches and sockets



This portfolio covers a variety of colorful and elegant accessories suitable for interior use or even more demanding areas such as workshops or industrial objects.



Quick overview of timing relays



	CRM-181J	CRM-183J	CRM-2T	CRM-2H	CRM-91H	CRM-93H	CRM-111H	CRM-113H
Type	Single-function	Single-function	Single-function	Single-function	Multi-function	Multi-function	Multi-function	Multi-function
Control input signal	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger

Main parameters

Contact Configuration and Rating	SPDT (1 Form C) 16A/250V	SPDT (1 Form C) 16A/250V + DPDT (2 form C) 8A/250V	2x SPDT (2x1 Form C) 16A / 250V	SPDT (1 Form C) 16A/250V	SPDT (1 Form C) 16A/250V	SPDT (1 Form C) 16A/250V + DPDT (2 form C) 8A/250V	SPDT (1 Form C) 16A/250V	SPDT (1 Form C) 16A/250V + DPDT (2 form C) 8A/250V
Voltage range	AC/DC 12-240V	AC/DC 12-240V	AC/DC 12-240V or AC 230V	AC/DC 12-240V or AC 230V	AC/DC 12-240V or AC 230V	AC/DC 12-240V or AC 230V	AC/DC 12-240V	AC/DC 12-240V
Time Range	0.1s - 100 hrs	0.1s - 100 hrs	0.1s - 100 days	0.1s - 100 days	0.1s - 10 days	0.1s - 10 days	0.05s - 30 days	0.05s - 30 days
Relay mode setting	no	no	no	no	no	no	yes	yes

Options and functions

Setting option	1) Time range setting 2) Fine time setting	1) Time range setting 2) Fine time setting	1) Time range setting 2) Fine time setting 3) Fine time setting	1) Time range setting 2) Fine time setting 3) Time range setting 4) Fine time setting	1) Time range setting 2) Fine time setting 3) Function setting	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting
Functions	ON DELAY ON DELAY WITH INHIBIT or INTERVAL ON INTERVAL ON WITH INHIBIT or FLASHER - ON first FLASHER - ON first WITH INHIBIT or OFF DELAY	STAR/DELTA starter	ASYMMETRIC FLASHER	ON DELAY OFF DELAY, FLASHER - OFF FIRST, FLASHER - ON FIRST, OFF DELAY, SINGLE SHOT, SINGLE SHOT FALLING EDGE, ON/OFF DELAY, MEMORY LATCH, PULSE GENERATOR 0.5 s	ON DELAY OFF DELAY, FLASHER - OFF FIRST, FLASHER - ON FIRST, OFF DELAY, SINGLE SHOT, SINGLE SHOT FALLING EDGE, ON/OFF DELAY, MEMORY LATCH, PULSE GENERATOR 0.5 s	ON DELAY WITH INHIBIT, INTERVAL ON, INTERVAL ON WITH INHIBIT, FLASHER - ON FIRST, FLASHER - OFF FIRST, MEMORY LATCH, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5 s, PULSE GENERATOR 0.5 s WITH INHIBIT, INTERVAL ON/OFF, ON/OFF DELAY, MEMORY LATCH WITH DELAY	ON DELAY, ON DELAY WITH INHIBIT, INTERVAL ON WITH INHIBIT, FLASHER - ON first, FLASHER - OFF first, MEMORY LATCH, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5 s, PULSE GENERATOR 0.5s WITH INHIBIT, INTERVAL ON/OFF, ON/OFF DELAY, MEMORY LATCH WITH DELAY

General information

Mounting	35 mm DIN rail (IEC 60715)							
Temperature Range	Operating: -20°C to +55°C (-4°F to 131°F) Storage: -30°C to +70°C (-22°F to 158°F)							
Lifetime	Electrical: 70,000 operations Mechanical: 10,000,000 operations							
Weight	61 g (2.15 oz)	61 g (2.15 oz)	79 g (2.79 oz)	61 g (2.15 oz)	61 g (2.15 oz)	82 g (2.79 oz)	61 g (2.15 oz)	82 g (2.79 oz)
Dimensions	90 x 17.6 x 64 mm	90 x 17.6 x 64 mm	90 x 17.6 x 64 mm	90 x 17.6 x 64 mm	90 x 17.6 x 64 mm	90 x 17.6 x 64 mm	90 x 17.6 x 64 mm	90 x 17.6 x 64 mm
LED indications	power indication - green output indication - red (blinking = timing or inhibiting, lit = output closed)							

Dielectric strength

Supply vs. output 1	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC
Supply vs. output 2 (3)	-	1kV AC	4kV AC	-	-	1kV AC	-	1kV AC
Output 1 vs. output 2	-	1kV AC	-	-	-	1kV AC	-	1kV AC
Output 2 vs. output 3	-	1kV AC	-	-	-	1kV AC	-	1kV AC
Supply vs control input	-	-	-	-	-	-	-	-



	CRM-121H	CRM-131H	PTRM-216K	PTRM-216T	PTRM-216KP	PTRM-216TP	PTRM-216T	PTRM-216T
Type	Multi-function	Multi-function	Multi-function	Multi-function	Multi-function	Multi-function	Multi-function	Multi-function
Control input signal	Power Trigger	Line Voltage Trigger	Control Switch Trigger	Control Switch Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger

Main parameters

Contact Configuration and Rating	SPDT (1 Form C) 16A/250V	SPDT (1 Form C) 16A/250V	2x SPDT (2x1 Form C) 16A / 250V	2x SPDT (2x1 Form C) 16A / 250V	2x SPDT (2x1 Form C) 16A / 250V	2x SPDT (2x1 Form C) 16A / 250V	2x SPDT (2x1 Form C) 16A / 250V	2x SPDT (2x1 Form C) 16A / 250V
Voltage range	AC/DC 12-240V	AC/DC 12-240V	AC/DC 12-240V	AC/DC 12-240V	AC/DC 12-240V	AC/DC 12-240V	AC/DC 12-240V	AC/DC 12-240V
Time Range	0.05s - 30 days	0.05s - 30 days	0.05s - 30 days	0.05s - 30 days	0.05s - 30 days	0.05s - 30 days	0.05s - 30 days	0.05s - 30 days
Relay mode setting	yes	yes	yes	yes	yes	yes	yes	yes

Options and functions

Setting option	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting	1) Time range setting 2) Fine time setting 3) Function setting 4) Relay mode setting
Functions	ON DELAY WITH INHIBIT, INTERVAL ON, INTERVAL ON WITH INHIBIT, FLASHER - ON FIRST, FLASHER - OFF FIRST, MEMORY LATCH, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5 s, PULSE GENERATOR 0.5 s WITH INHIBIT, INTERVAL ON/OFF, ON/OFF DELAY, MEMORY LATCH WITH DELAY	ON DELAY WITH CONTROL SIGNAL, INTERVAL ON WITH CONTROL SIGNAL, FLASHER - ON first WITH CONTROL SIGNAL, FLASHER - OFF first WITH CONTROL SIGNAL, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5s WITH CONTROL SIGNAL, INTERVAL ON/OFF WITH CONTROL SIGNAL, ON/OFF DELAY WITH CONTROL SIGNAL, MEMORY LATCH WITH DELAY	ON DELAY, ON DELAY WITH INHIBIT, INTERVAL ON, INTERVAL ON WITH INHIBIT, FLASHER - ON FIRST, FLASHER - OFF FIRST, MEMORY LATCH, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5 s, PULSE GENERATOR 0.5 s WITH INHIBIT, INTERVAL ON/OFF, ON/OFF DELAY	ON DELAY, ON DELAY WITH INHIBIT, INTERVAL ON WITH INHIBIT, FLASHER - ON FIRST, FLASHER - OFF FIRST, MEMORY LATCH, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5 s, PULSE GENERATOR 0.5 s WITH INHIBIT, INTERVAL ON/OFF, ON/OFF DELAY	ON DELAY, ON DELAY WITH INHIBIT, INTERVAL ON WITH INHIBIT, FLASHER - ON FIRST, FLASHER - OFF FIRST, MEMORY LATCH, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5 s, PULSE GENERATOR 0.5 s WITH INHIBIT, INTERVAL ON/OFF, ON/OFF DELAY	ON DELAY, ON DELAY WITH INHIBIT, INTERVAL ON WITH INHIBIT, FLASHER - ON FIRST, FLASHER - OFF FIRST, MEMORY LATCH, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5 s, PULSE GENERATOR 0.5 s WITH INHIBIT, INTERVAL ON/OFF, ON/OFF DELAY	ON DELAY WITH CONTROL SIGNAL, INTERVAL ON WITH CONTROL SIGNAL, FLASHER - ON first WITH CONTROL SIGNAL, FLASHER - OFF first WITH CONTROL SIGNAL, OFF DELAY, SINGLE SHOT, WATCHDOG, PULSE GENERATOR 0.5 s WITH CONTROL SIGNAL, INTERVAL ON/OFF WITH CONTROL SIGNAL, ON/OFF DELAY WITH CONTROL SIGNAL

General information

Mounting	35 mm DIN rail (IEC 60715)	11 Pin Octal Socket						
Temperature Range	Operating: -20°C to +55°C (-4°F to 131°F) Storage: -30°C to +70°C (-22°F to 158°F)							
Lifetime	Electrical: 70,000 operations Mechanical: 10,000,000 operations							
Weight	72 g (2.57 oz)	61 g (2.17 oz)	108 g (3.85 oz)	107 g (3.82 oz)	108 g (3.85 oz)	107 g (3.82 oz)	108 g (3.85 oz)	107 g (3.82 oz)
Dimensions	90 x 17.6 x 64 mm	90 x 17.6 x 64 mm	48 x 48 x 89 mm	48 x 48 x 79 mm	48 x 48 x 89 mm	48 x 48 x 79 mm	48 x 48 x 89 mm	48 x 48 x 79 mm
LED indications	power indication - green output indication - red (blinking = timing or inhibiting, lit = output closed)							

Dielectric strength

Supply vs. output 1	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC
Supply vs. output 2 (3)	-	-	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC
Output 1 vs. output 2	-	-	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC	4kV AC
Coil 2 - Contact 3	-	-	-	-	-	-	-	-
Supply vs control input	4kV AC	-	-	-	-	-	-	-

CRM-181J - Single function relays innovation

BISTABLE RELAY

CRM-81J (old)

- Fixed time range by type: (0.1s - 1s / 1s - 10s / 6s - 60s / 1min - 10min / 6min - 60min / 1hr - 10hrs).
- Power trigger functions have the ability to start function by pressing/releasing control input.
- Original 1-MODULE box.
- UNI or 230 V supply voltage.
- The UL certification for USA.

CRM-181J (new)

- Comfortable and well-arranged time range setting by rotary switch and potentiometer: (0.1s - 1s / 1s - 10s / 3s - 30s / 6s - 60s / 1min - 10min / 3min - 30min / 6min - 60min / 1hr - 10hrs / 3hrs - 30hrs / 10hrs - 100hrs).
- Power trigger functions have the ability to Inhibit delay by pressing/releasing control input.
- CRM-182J > Relay with 2x 16A output contacts.
- New 1-MODULE box.
- UNI supply voltage for all types.
- The UL certification for USA and Canada.



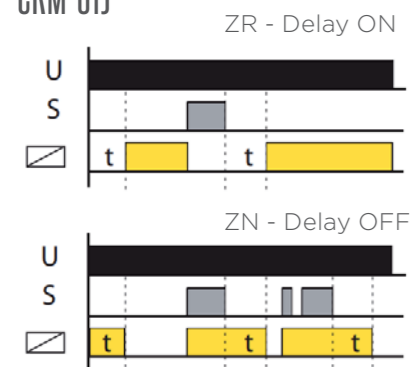
- Often referred to as "impulse".
- Bistable relays are used to switch power on / off, send impulse commands and have a wide range of applications from common houses and corridors to warehouses, manufacturing halls, hospitals, etc.
- It can be used especially for switching and controlling lighting, heating, ventilation and other devices.
- All relays can be controlled manually using a lever on the relay panel (I-O), which also serves as an indication of the status of the contacts
- For types BR-220 and BR-232, it is possible to switch off the switch by switching the switch to OFF position. Coil control and relay status

- can only be changed manually (service, maintenance).
- The relay contacts are held in position by mechanical blocking, which leads to a reduction of the thermal load and current consumption.
- Faster and clearer installation thanks to an unlimited number of buttons, connected in parallel by two wires, which is a practical replacement for AC and cross switches. Last but not least, it offers savings in the number of wires used and, in the case of the control circuit, the possibility of using a smaller diameter, where the power consumption is minimal compared to the power circuit.

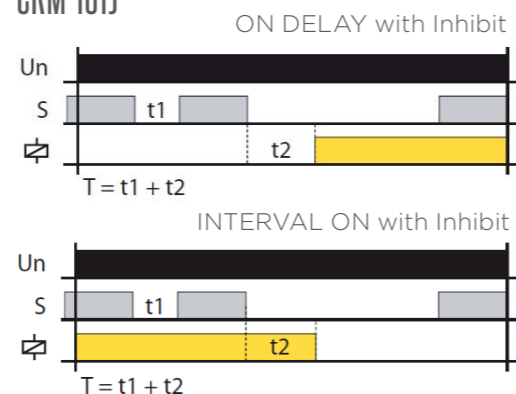


Selected functions and graphs

CRM-81J



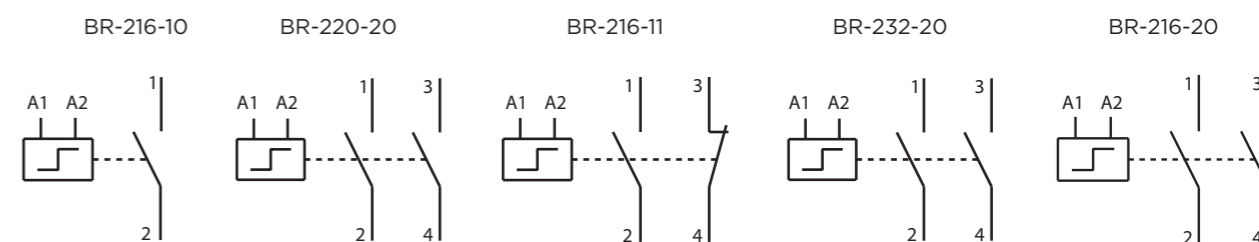
CRM-181J



Maximum load of LED power supplies

BR-216-10/11/20	BR-220-20	BR-232-20
max. 2 A per pole	max. 6 A per pole	max. 12 A per pole

In configuration of NO/NC contacts:



INNOVATIVE STAIRCASE SWITCHES

Staircase switch CRM-4



Programmable staircase switch CRM-46

Connection of glow lamps / LED switches up to 100 mA.

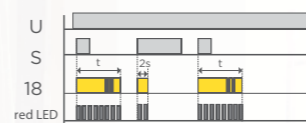


LED timing signalling on the device.

The function Turns off the lights before the time runs out.



Possibility to set the signalling flashing light before switching off.



Switch time programming function by number of button presses.



New function Pulse relay with delayed return (function for those who forget to switch off when they go out = goes out by itself).



New design of I-M box

- Higher stability of DIN rail mounting due to reinforced spring on the latch which brings vibration resistance.
- Larger front slots for easier wire gripping and a fixed top latch to speed up assembly.
- Special material Xantar MX 1094 ensures high UV stability and longer life.
- Halogen free



NEW

OLD

MODERN DESIGN
SOFTER SHAPES
ONE FASTENING COMPONENT
IMPROVED DURABILITY
UNITED LOOK WITH 3-MODULE

DIMMER FOR ALL KIND OF LOADS

It is said that LED light sources are TOP of the market and are now used in 80% of buildings and homes to save costs. However, it is more difficult to define the load of LED sources on the dimmer with the aim of trouble-free regulation.

Each dimmer has overcurrent protection that reacts at a certain peak current. Each load (bulb, LED, energy saving lamp) has a certain power consumption. This is usually stated on the packaging by the manufacturer. However, the peak current value of this load is usually not stated. This is because each LED or energy saving lamp has electronics inside, peak current

values may vary considerably for different products. Generally, it is not possible to determine the number of individual LED bulbs, if we do not know this value; we can only test a specific number of pieces.

The solution to the determination this is by the power factor $\cos \phi$. The power factor of dimmable LED lamps ranges from: $\cos \phi = 0.95$ to 0.4 . You can get the approximate max. Load value by multiplying the dimmer load and the power factor of the connected light source.

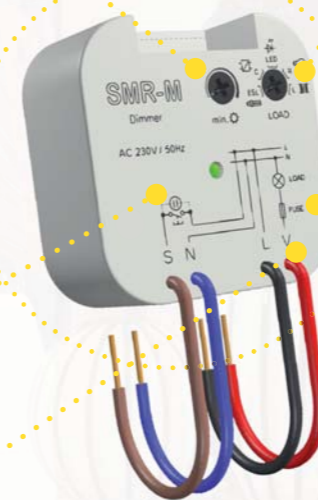
Our dimmer SMR-M can do it, just as it can dim other light sources.

Universal dimmer SMR-M

Set the minimum brightness to eliminate the flicker of the light source (especially the LED).

Possibility to connect up to 20 buttons with LED or glow lamp (max x mA).

Load 160 VA ($\cos \phi = 1$).

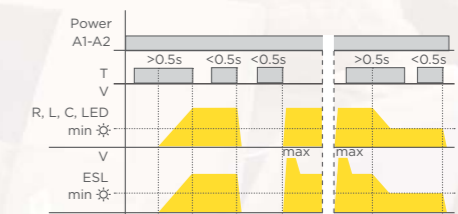


Setting the light source type.

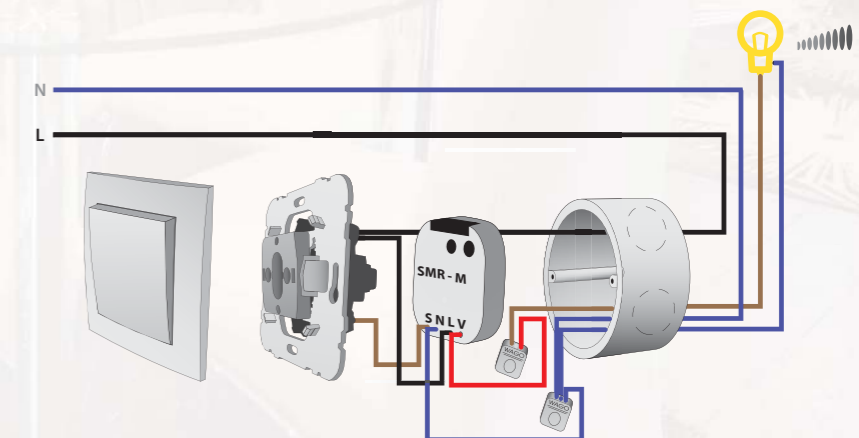
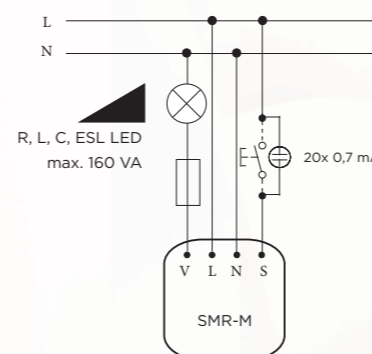
- R HAL 230V bulbs, halogen lamps
- L low-voltage el.bulbs 12/24V (wound transformers)
- C low-voltage el.bulbs 12/24V (electronic transformers)
- ESL ESL dimmable compact fluorescent lamps (energy saving)
- LED dimmable LED bulbs

t_o Integrated electronic thermal fuse. In case of reaction no exchange is necessary.

Function



Brightness level will be saved to dimmer memory when powered off and restored when powered on again.



GLASS TOUCH WIRELESS CONTROLLERS

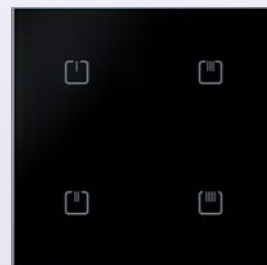
They are a luxurious alternative to plastic push-button RFWB. In a glass design with a thickness of only 8 mm, these will stand out in any interior. They are available in 2 and 4 button versions, in white and black glass. Capacitive pads are operated by touch, distinguishing between short and long presses. Button illumination during packet sending is realized by

red LED. Actuators can adhere anywhere with double-sided tape or screwed onto the surface or installation box with a screw spacing of 60 mm via an auxiliary bracket. Power is provided by replaceable 2x CR 2032 with a lifetime of up to 2 years - depending on frequency of use.

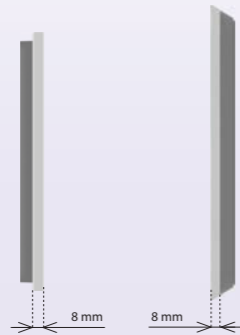
RFGB-20/40 (SHARP)



RFGB-20/W
8595188176781



RFGB-40/B
8595188176804



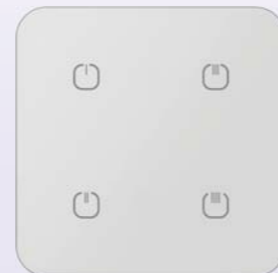
8 mm

8 mm

RFGB-220/240 (ROUND)



RFGB-220/B
8595188176842

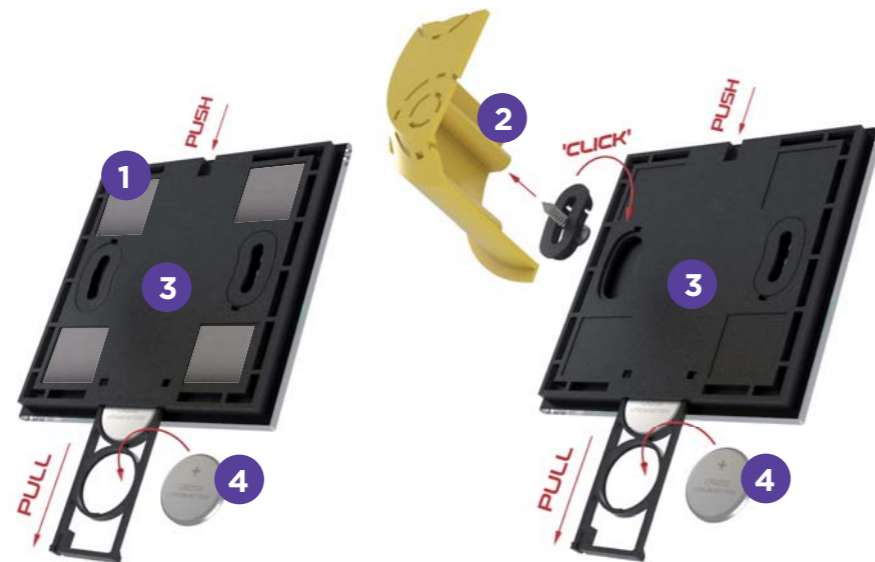


RFGB-240/B
8595188176859



INSTALLATION

- Two side tape installation, or
- Wall (Box) installation.
- The flat design with straight base makes it ideal for quick installation.
- 2x 3 V battery CR 2032 in changeable slot.



IN-GLASS SWITCH WITH DIMMER

AND WIRELESS CONTROL

Built-in temperature sensor with 0-55 ° C.

Luxury glass switch design.

Group control function that lets you control more than 10 other elements at the touch of a button.

Input R / L / C / ESL / LED, 160 VA.

When pressed, the button vibrates and turns blue.

White LED backlight.

Setting minimum brightness to eliminate flickering of LED lamps.

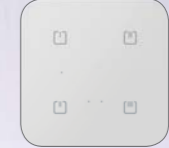
Touch control by capacitive button.



RFDW-71/W
8595188159838



RFDW-71/B
8595188176941

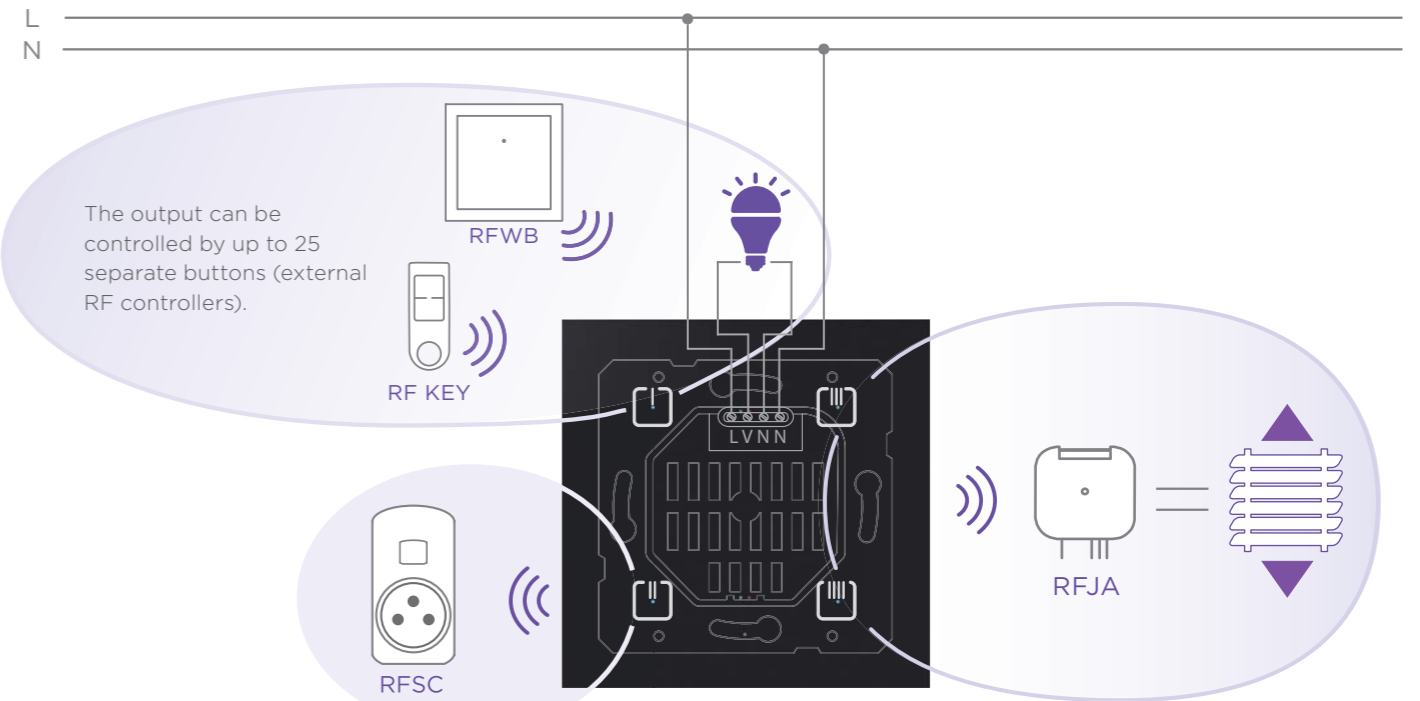


RFDW-271/W
8595188176958



RFDW-271/B
8595188176941

Example of usage

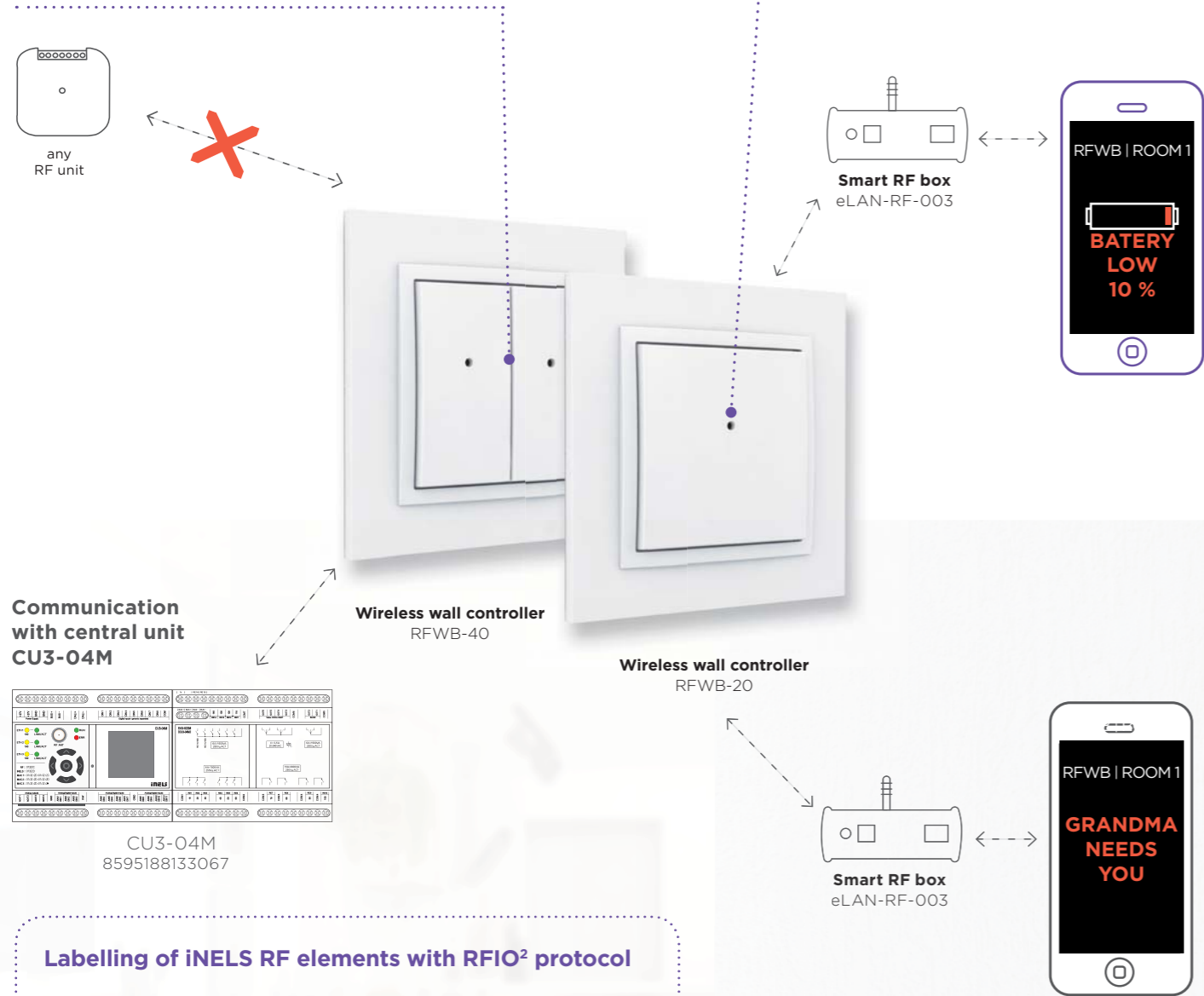


RFIO² - UPGRADED WIRELESS PROTOCOL

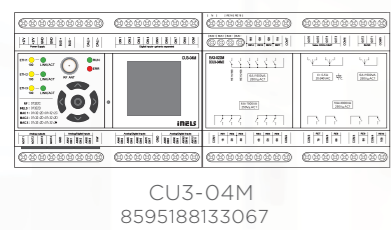
SERVICE KEY RFAF/USB

Preventing the possibility of unsuccessful setting / collision of pairing with an unwanted device

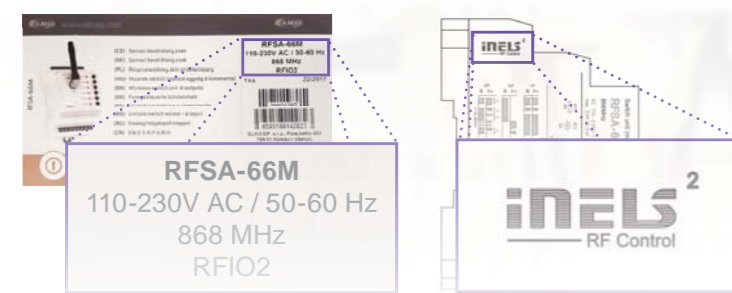
It is achieved through programming buttons on the wireless switch.



Communication with central unit CU3-04M

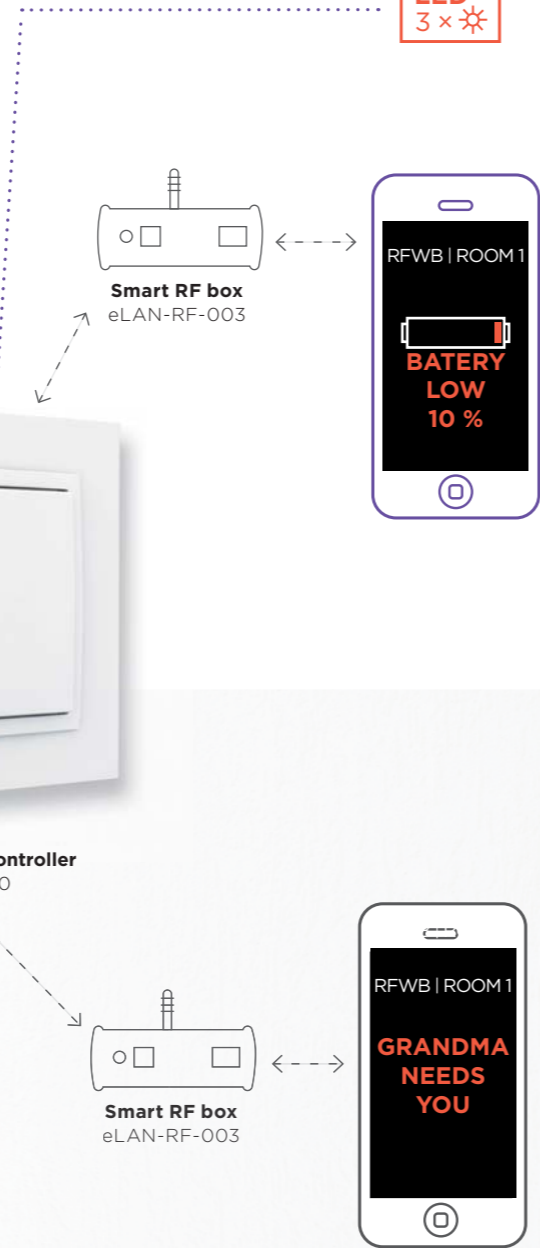


Labelling of iNELS RF elements with RFIO² protocol



Battery Discharge Signalling

When the battery charge level is below 10%, the wireless switch will flash 3 times every minute.



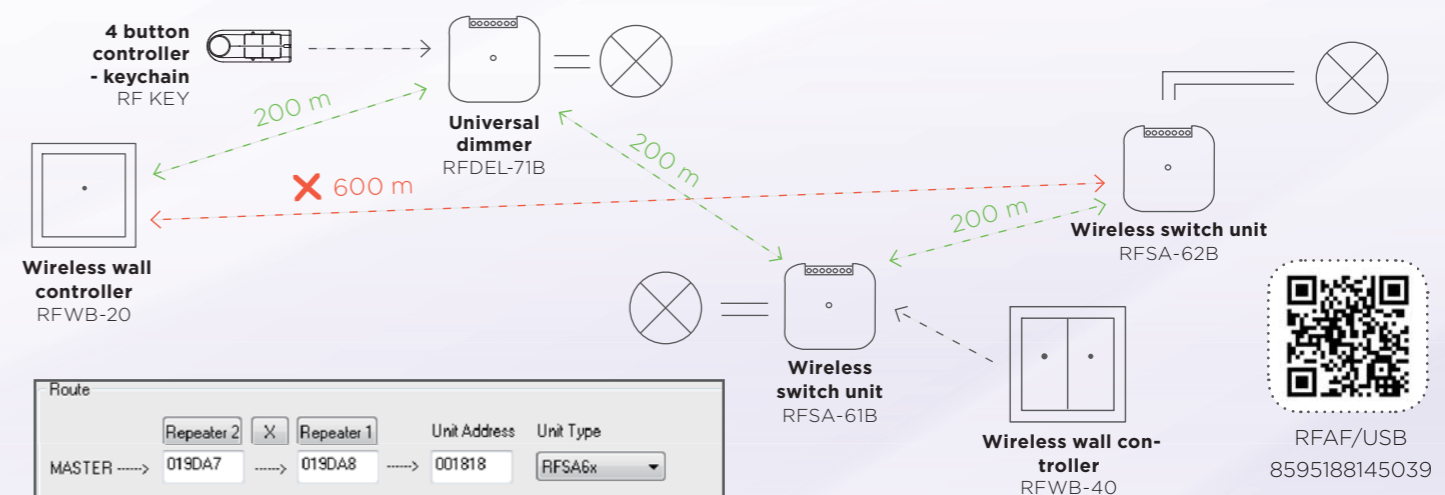
Panic button

When the button is pressed, the information is sent to the smartphone via the eLAN-RF-003 smart box.

The RFAF / USB Service Key is a support tool for system partners and installers to facilitate setup and analyse wireless communication problems.

Setting the repeater signal through iNELS RF components with the RFIO² protocol, which increases the range of communication by hundreds of meters.

The RF communication network analyser reliably analyses the communication between the controller (where you plan to place it) and the component in the installation. Shows signal strength / quality as well as frequencies that can interfere with communication. This gives you an overview of interference and weak signal points that you can avoid during installation. You can avoid these situations simply by repositioning the component.



The screenshot shows the RF analyzer v0.18 interface. It includes a 'Route' configuration window with fields for Repeater 2 (019DA7), Repeater 1 (019DA8), and Unit Address (001818). Below this is a 'Route Test' window with buttons for 'Route Test', 'Write Route to Repeater(s)', 'Delete Route from Repeater(s)', 'Select Route', 'Load Route List', and 'Save Route List'. The main window displays a signal strength graph with a color scale from -30 dBm to -110 dBm. The graph shows signal strength across various frequencies. The interface also includes a 'Unit type' list and a 'START' button.

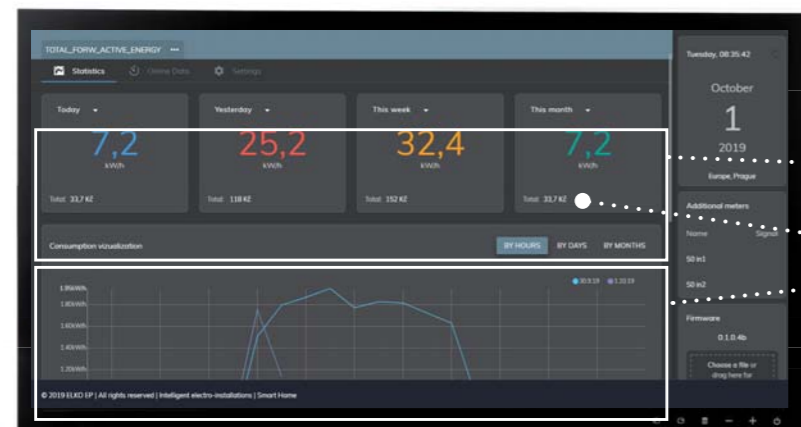


Available frequency for individual territories:

- 866 MHz** India
- 868.1 MHz** Russia
- 868.5 MHz** EU, Ukraine, Middle East
- 916 MHz** America, Australia, New Zealand, Israel

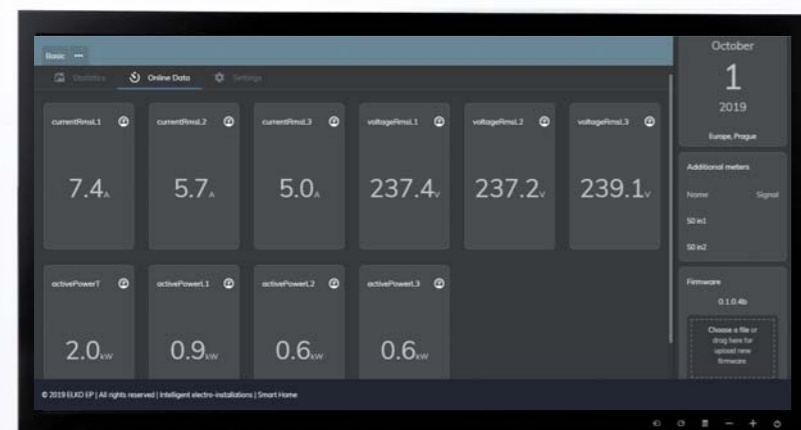
ENERGY GATEWAY WITH IMPROVED APPLICATION

The Energy Gateway RFPM-2 web interface now has a completely new and cleaner visualization. This makes displaying and evaluating energy consumption even more convenient and easy.



STATISTICS

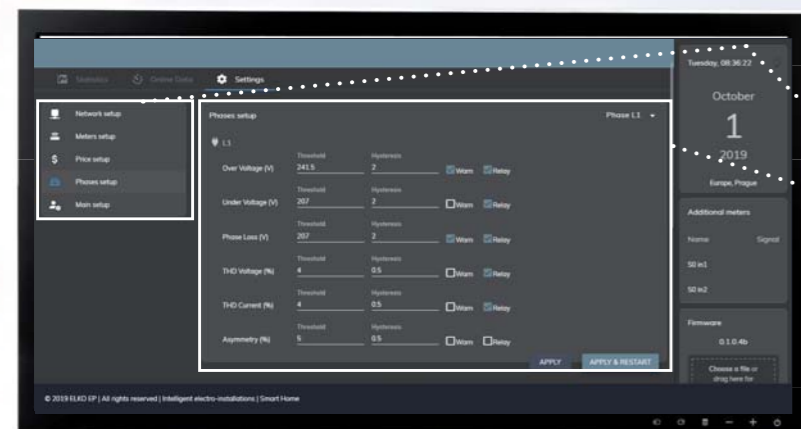
- Sample overview of electricity consumption (today, yesterday, this week, this month)
- Consumption converted to finance costs
- Graphical visualization of consumption (by hours, days, months)



ONLINE DATA

The Energy Gateway evaluates the following indicators in the network:

- Phase current / voltage
- Phase overvoltage / undervoltage
- Asymmetry
- Distortion of the sine wave signal
- Distortion of sine wave signal flow
- Frequency
- Active performance
- Reactive power
- Apparent performance
- Power factor
- Phase voltage shift between phases

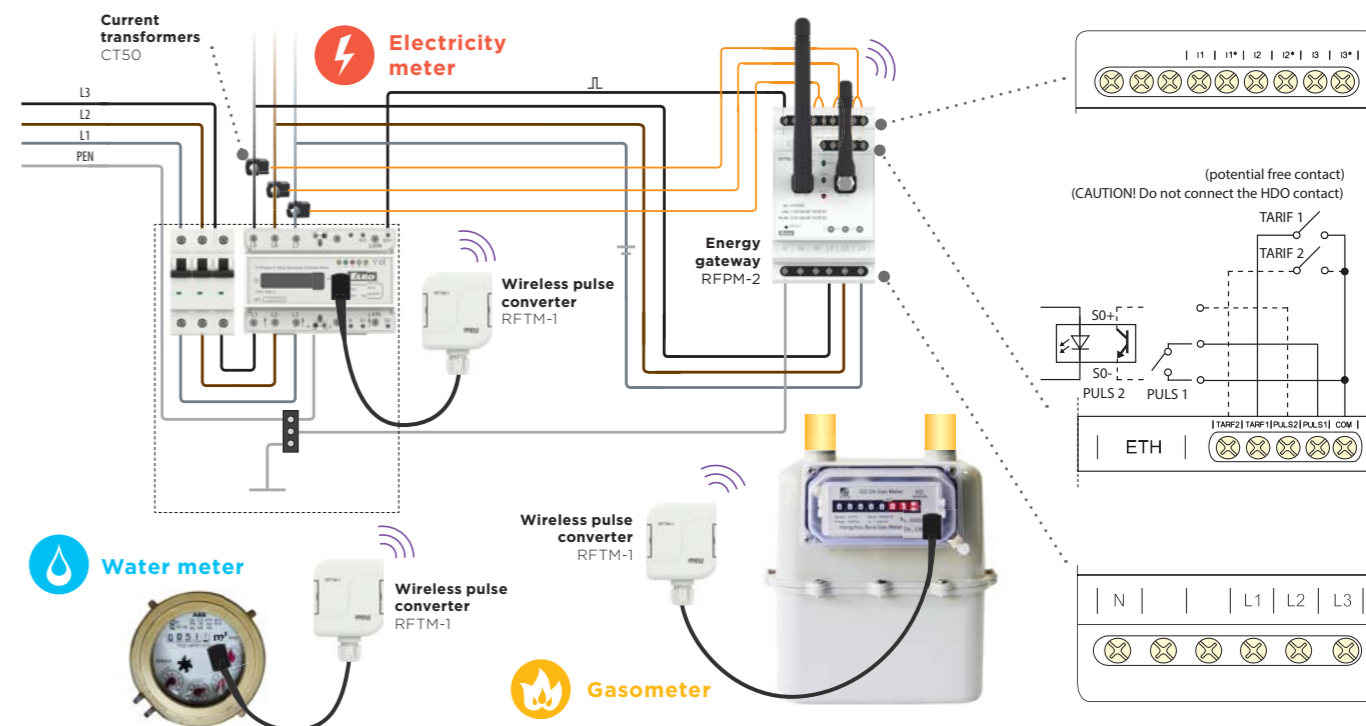


SETTINGS

- Main SETTINGS menu
- Example of "Phase settings" submenu

All basic and advanced settings are made simply, quickly and intuitively. If you have any questions, a telephone/e-mail technical support is available.

DEMO web interface
<http://217.197.144.56:2130/>
 Login and password: **admin**



Measured data can be displayed not only through the web interface on the PC, but also in iNELS Home Control (iHC). The measured values of all quantities can be monitored, but above all archived and analysed in many selected time periods (daily, weekly, monthly and yearly). Consumption can be quantified in consumed units or directly in financial costs. Another advantage is the possibility of measuring electricity consumption in up to 4 tariffs.

PROMO APP available



Login and password: **admin**



Current consumption can be displayed as a bar graph.



You can choose to display the consumption in units.



One click to switch to power consumption in your currency.

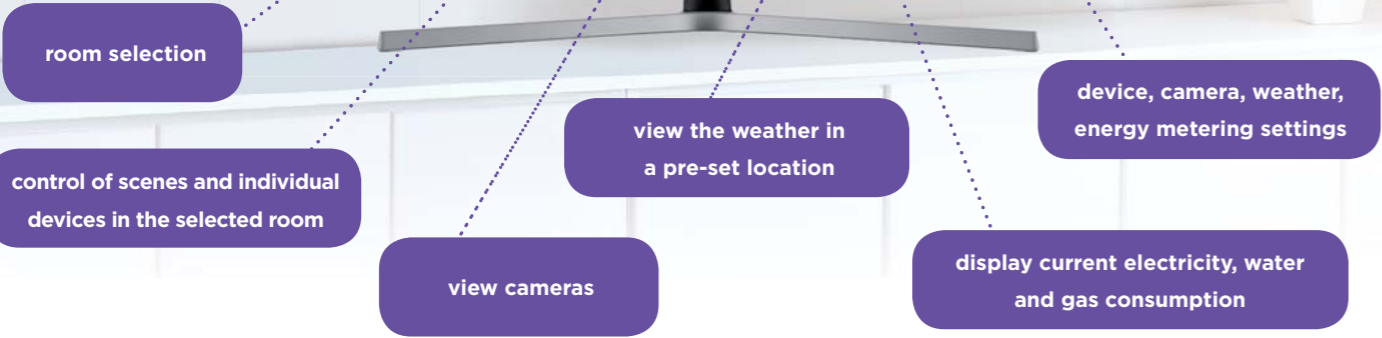
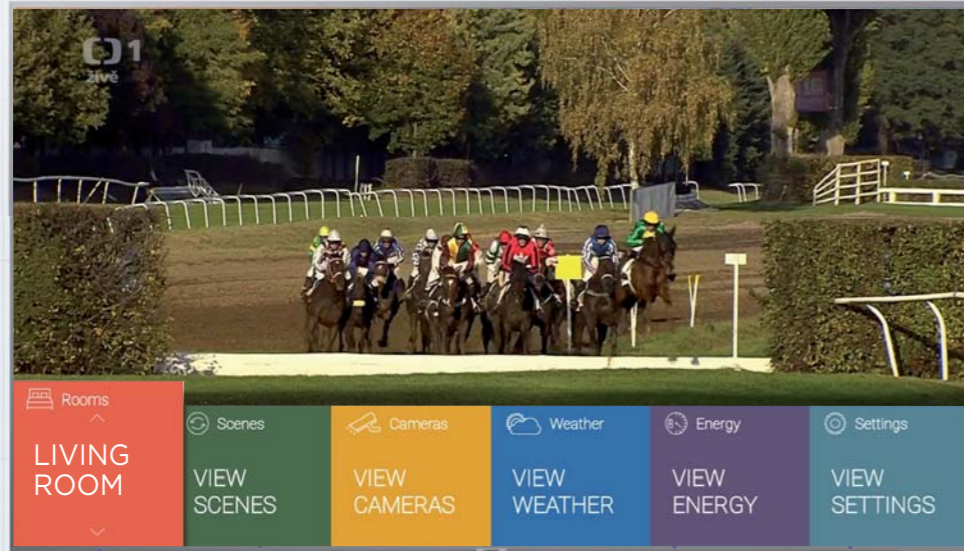


Significant savings can be achieved by analysing data.

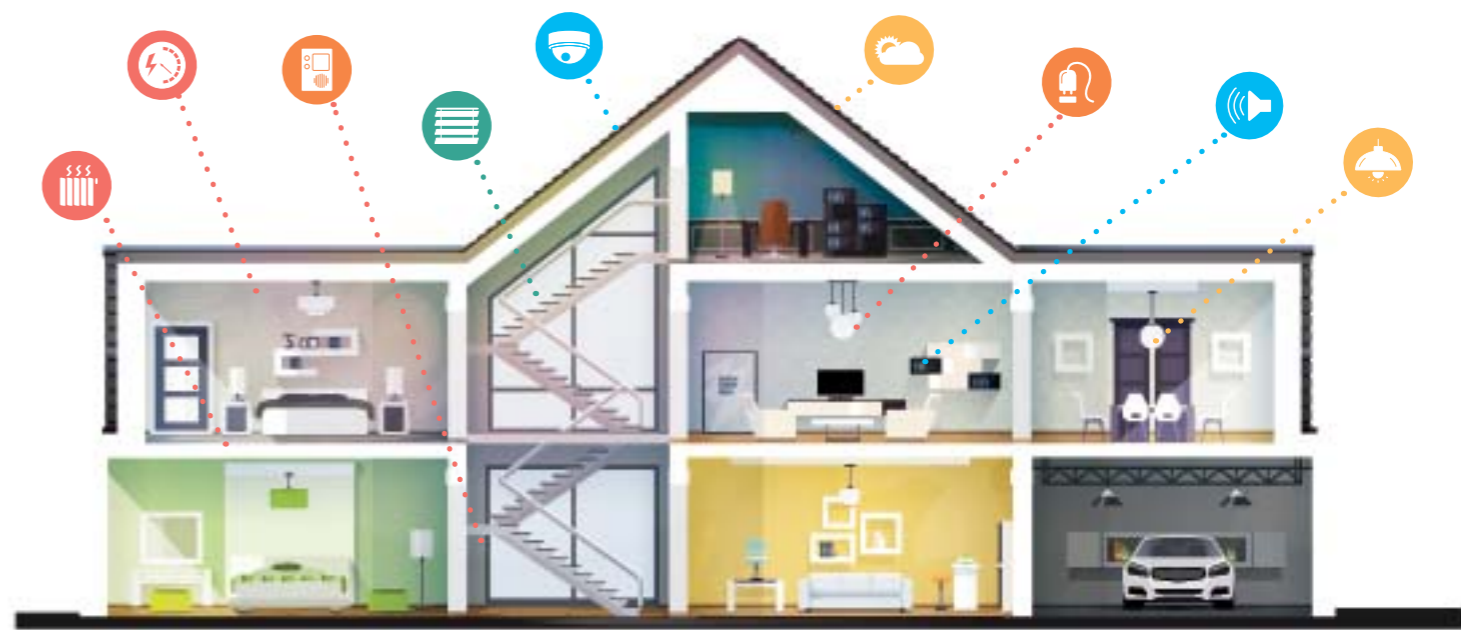
CONTROL iNELS via TV

The updated iNELS Home Control application brings a new dimension to the control of households via smart TVs. It is fully compatible with Samsung Smart TV. Thanks to the TV you can control appliances such as lights, air conditioning, heating, ga-

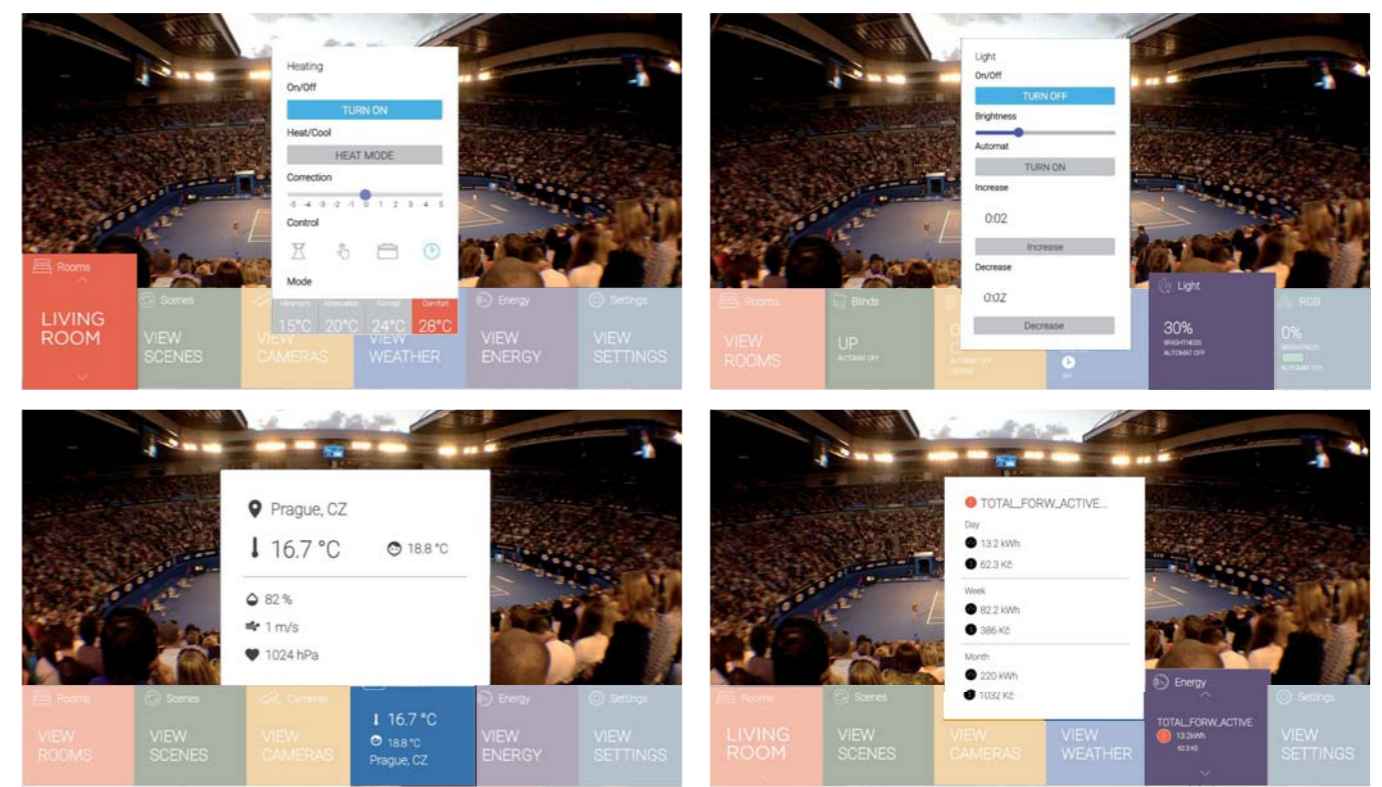
rage doors, cameras, outdoor blinds and more. The application is available for download for Samsung Smart TV owners by logging into Samsung account for free.



What can you control?



- Lighting
- Multimedia
- Heating
- Weather station
- Cameras
- Energy management
- Switching
- Intercom
- Blinds, shutters



iNELS Smart Home Control

Lifestyle |

Check the application permissions by clicking Next in the information area. If you click Install, you confirm that you agree to grant these permissions to the app.

Install

Evaluation: 4+ | Size: 26,71MB (Available 144,61MB) | Developer: ELKO EP, s.r.o.
Price: Free | Update: 30/1/2020 | Last version: 1.1.099 | Languages: English

iNELS Home Control application is used to control iNELS RF Control system and BUS system. Allows switching, dimming, control blinds, RGB and there is also implemented communication with Axis cameras.

OUR NB-IoT SENSORS IN NETWORKS OF OTHER OPERATORS

SENSORS FOR PRECISION AGRICULTURE

iNELS Air

The mission of the new company iNELS Air, which is a joint venture of ELKO EP Holding SE and ACRIOS Systems, is to continue the development and customization of iNELS Air products and to develop business activities in the Czech Republic and other countries around the world. The newly created company is headed by Radim Malinowski.

"iNELS Air was created by the separation of products belonging to the Internet of Things from the ELKO EP portfolio and at the same time by their interconnection with the existing products of ACRIOS Systems. We have created a new business company that will benefit from the experience of both companies. ELKO EP has solved production, has available capacities, development team and process specialists. As a start-up we are more ferocious, we may have a bigger pull on the door and we are able to technically cover business activities," says Radim Malinowski.

OUR IoT DEVICES ARE WORKING IN THOSE NB-IoT OPERATOR NETWORKS NOW:

ELKO EP with iNELS Air products (IoT devices) has tested the operation of its NB-IoT devices with several national and multinational mobile operators as part of testing and pilot projects.

NarrowBand becomes dynamically developing IoT network capable of large-sized extending due to existing mobile network infrastructure based on base transceiver stations.



The very rational use of iNELS Air sensors and detectors has been demonstrated in cooperation with Clever Farm.

Clever Farm is a relatively new company that develops and deploys smart solutions for farmers in various fields.

These solutions include not only agro-evidence (fertilizers, nitrate compliance), maps linked to satellite imagery (allowing precise farming), land records (for lease and barter contracts), but also links to IoT sensors that provide a constant overview of soil conditions, forests and post-harvest warehouses.

ELKO EP has developed and manufactures customized devices based on iNELS Air sensors.

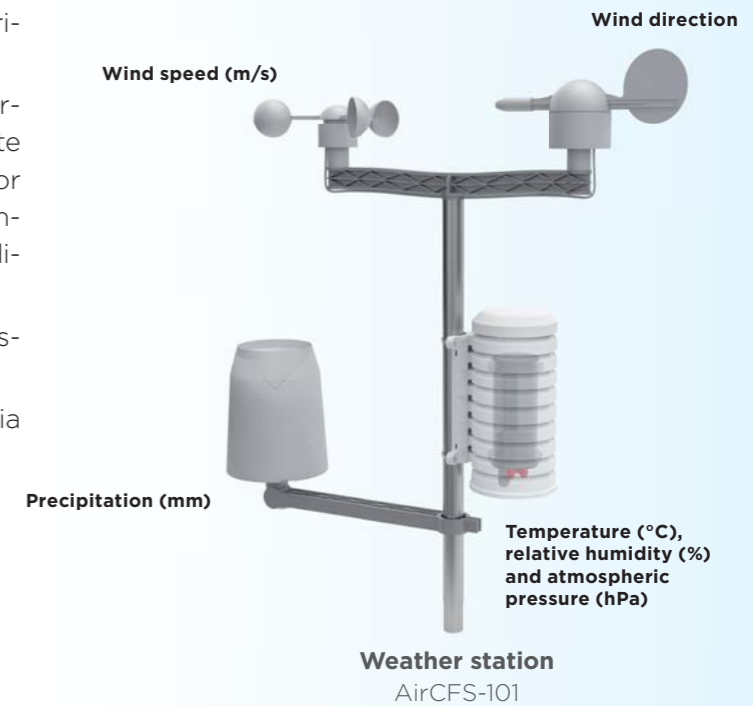
These are connected to the Clever Farm platform via SigFox / LoRA / NB-IOT networks.

CLEVER FARM



Official site
cleverfarm.org

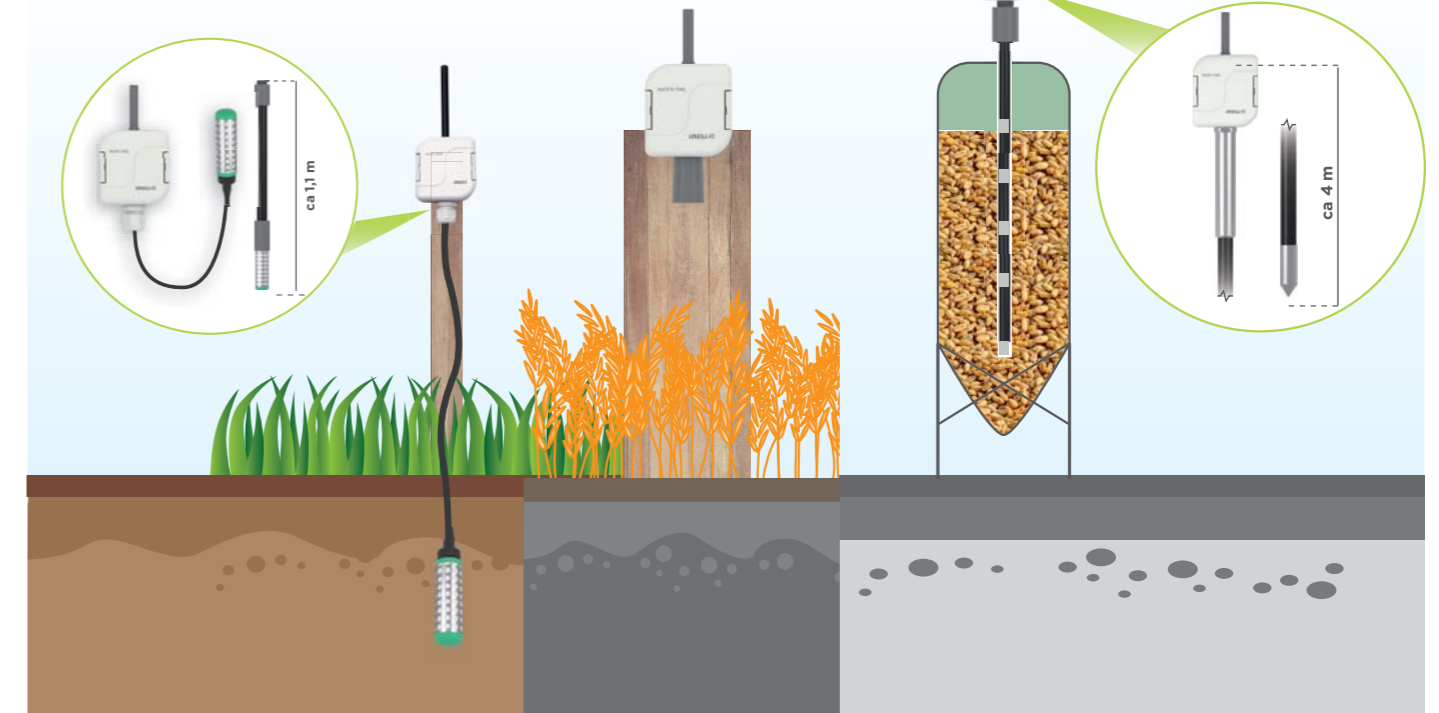
Works on:
LoRa™ sigfox NB-IoT



Soil moisture
AirSS-100

Humidity, temperature and atmospheric pressure
AirCFS-100

Monitoring conditions in silo tank
AirSS-100



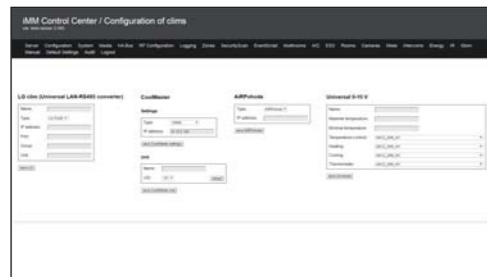
HOW TO CONTROL A/C BY iNELS?



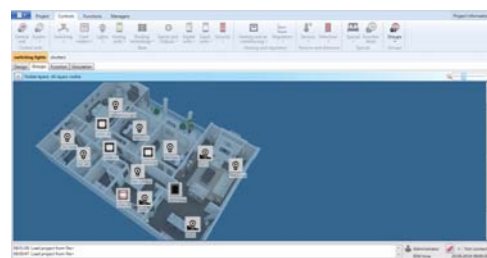
Smartphone app view (iHC-MA/MI)



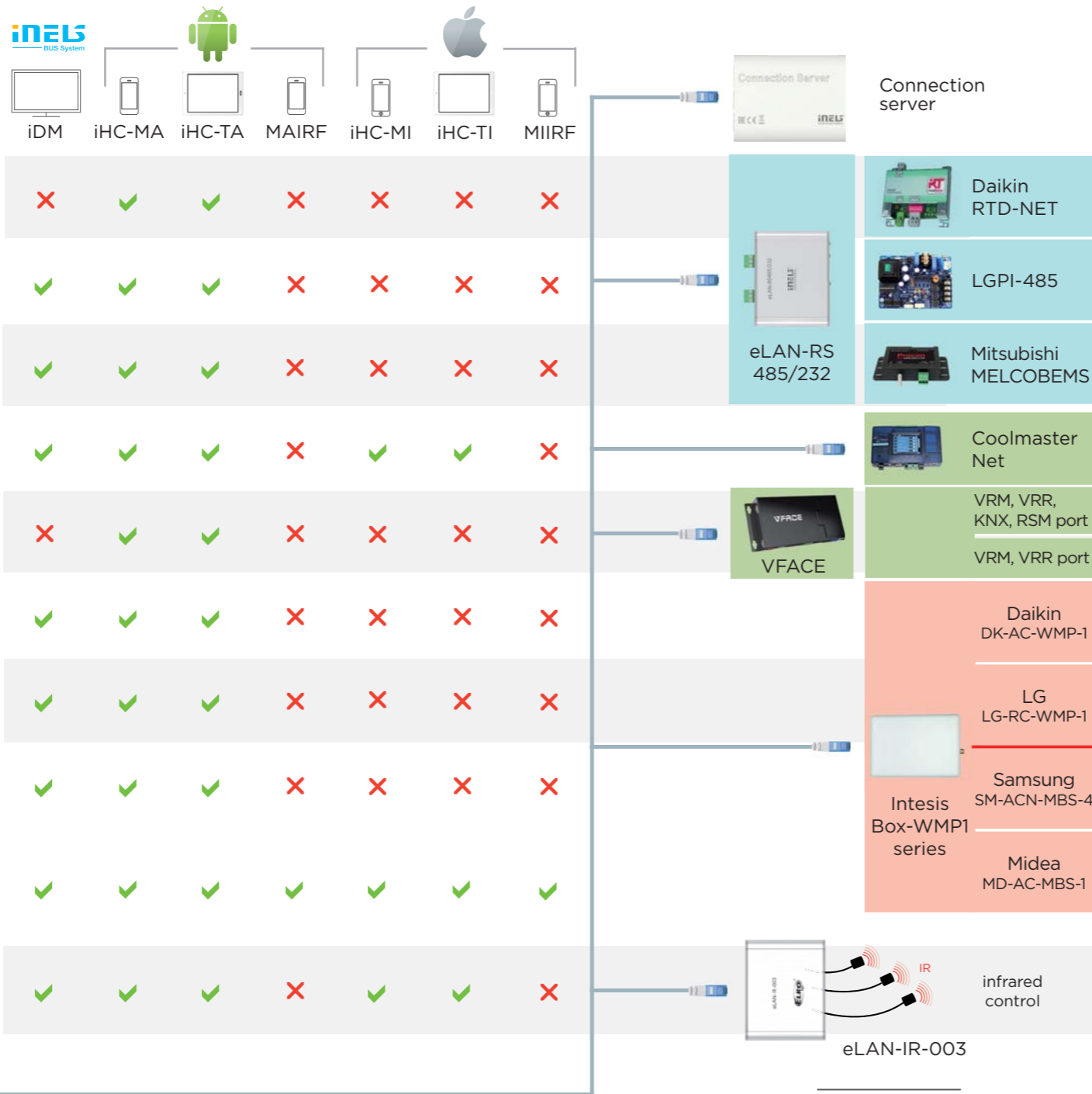
Tablet app view (iHC-TA/TI)



iMM Control Center setup screen



iMM Control Center setup screen



A/C brands



EHT3 screen

CU3-01M



BUS

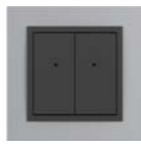
EST3



IDRT3-1



WSB3-40



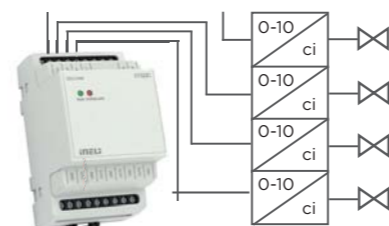
GRT3-50



GSB3-60



IM3-20B



control via Digital/analog converter DAC3-04M



The latest autumn update of the iDM setup software brings support for new peripheral units, such as the 22-channel switching actuator SA3-022M and FAN-COIL of the FA3-612M, along with the implementation of new support functions. For example, the more effective filtering of results that allows you better orientation in more complex projects because it works by searching by unit name, note or hexadecimal address. Furthermore, the search for devices on bus, which has an impact on the efficiency of work with the project, where it is necessary to add an element without unnecessary scanning a clean project. An interesting new feature is the support of proximity sensors in glass wall units, which allows the detection of a passing or approaching person and de-

pending on the action set can, for example, turn on the backlight of the device or trigger various devices (in the form of a scene).

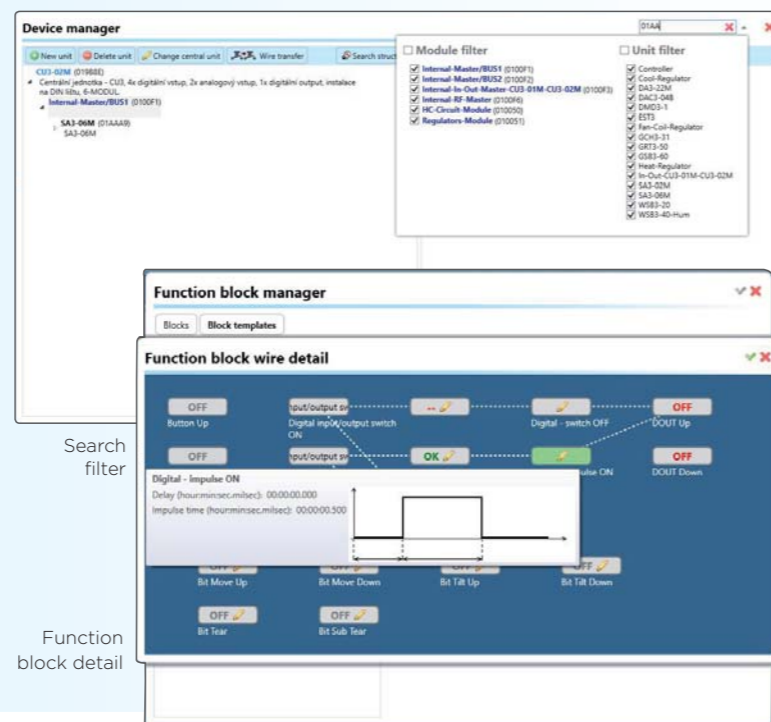
The work with functional blocks was also streamlined, where individual blocks can be shared between individual computers in the form of file import and export. A newly implemented important feature is the ability to move drives and virtual wires, which has a big impact on the time efficiency of programming (the programmer does not have to delete and re-establish connections between devices). In some cases, the order of the virtual wires may also matter, and it is now possible to change the wire positions in the overview by simply dragging the connection up or down.



Fan Coil Control Actuator FA3-612M



Switching Actuator SA3-022M



Search filter

Function block detail

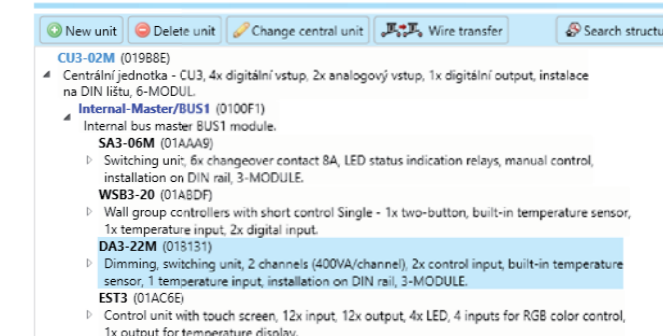
In 2020, the software was upgraded to a newer version called iDM v.3.41. Compared to the original version contains a lot of new enhancements and improvements, which you can read below.

- Removed “Wait firmware” status after “Factory default” option. If there is no connection from iDM3 to CU3, the central unit will delete the project and it will default to 192.168.1.1
- Since version 3.4.1, the firmware link to the project has been added to the project, so when the project is first uploaded to CU3, iDM3 checks the firmware inside the units and loads the current version required.
- Added control of internal SD card at CU3 startup.
- Information about used firmware versions for all units and modules has been added to the project structure.
- In the Program settings / other settings menu, added the option “Automatic project return to CU3”.
- „Test connection“ function added in Program settings / Connection settings menu.

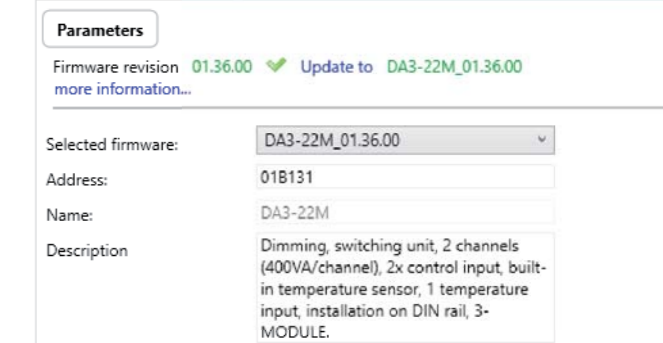
Other settings

- Enable manual change consumer value
- Enable scroll floor items
- Auto open wire manager
- Auto restore project at the CU3**

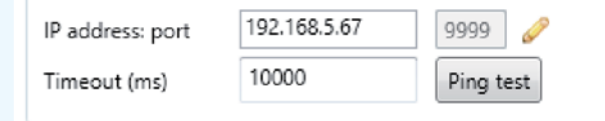
Device manager



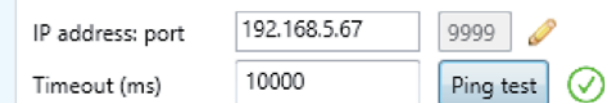
DA3-22M (01B131)



Connection settings



Connection settings



Proximity sensor

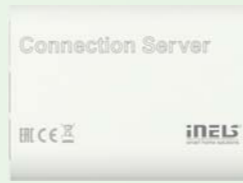
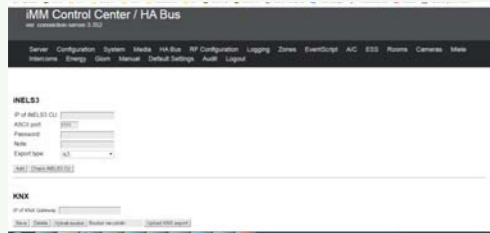
The iNELS BUS portfolio includes a new line of glass controls with proximity sensors. Irrespective of environmental conditions, it is able to detect a passing person or hand gestures. Among other things, the new series of units makes it possible to regulate the backlight level in several stages, which can be useful for controlling the unit at night (motion-controlled backlight does not disturb the occupants).

- „Sunrise-Time“ and „Sunset-Time“ devices added to Astronomical unit.
- To the Astronomical unit, Athens was added to the time zone.
- Attendance system optimization.
- Added support for sending complete card number to third parties.
- Added error message if cards are not stored in the reader.
- Added error message if SMS are not stored in GSM3.
- Added support for FA3-612M for Fan-Coil control.

iNELS IN SUPERIOR SOFTWARE

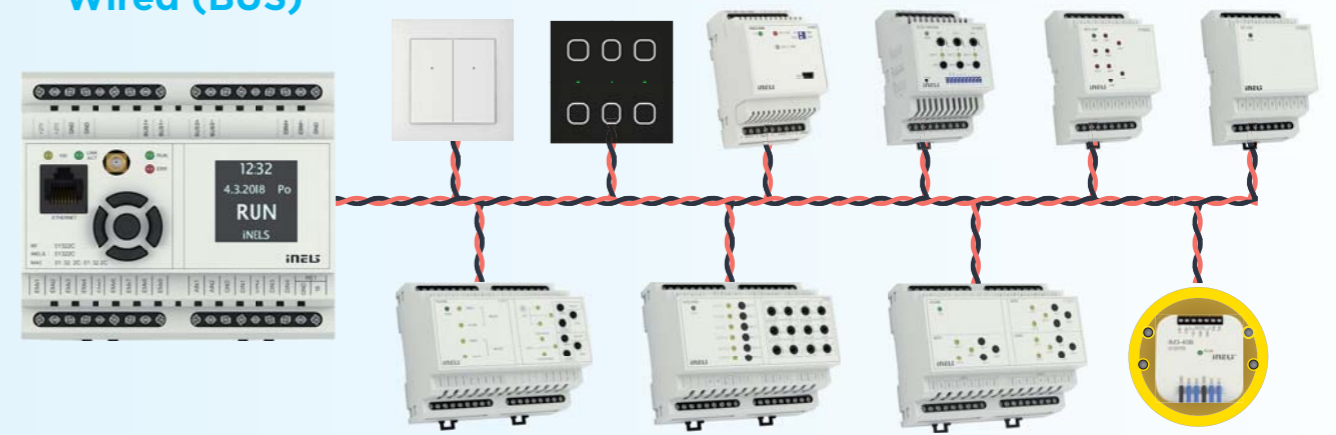
Bridge

Connection server



Connection Server

Wired (BUS)



SCADA

PROMOTIC



S-BUS / S-BUS+ FINS



Server

Wireless (RF)



Smoke detector



Switch unit
6 channels
multifunction



Keychain
- 4 buttons



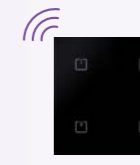
Input contacts converter
- 4x instantaneous contacts



Window / door
detector



Three channels
dimmer for LED
(RGB) strips



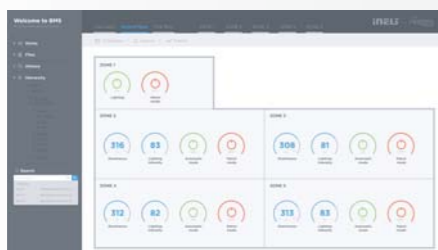
Glass touch controller
- 4 buttons, BLACK
SHARP



Switch unit for
shutters

BMS - Building management system

powered by niagara framework



MQTT REST API



JACE 8000

iNELS Air (IoT)



Smoke detector



Outdoor street
light controller



Soil
moisture



Energy monitoring
Water



Motion
detector



Waste container
fill level sensor

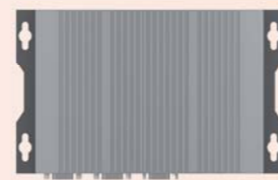


Humidity, temperature
and atmospheric pressure



Energy monitoring
Gas

FLOWBOX



Flowbox Server

It is a solution built on this platform, allowing you to program or configure your installation using the SCADA tool. This includes creating a web-based monitoring environment based on object-oriented JavaScript. The interface created in the PROMOTIC environment allows constant access to all elements without having to stop the system during (re) configuration. The main advantages are:

- Programmable web interface and control logic in JavaScript or VBScript.
- Connectivity to various interfaces and repositories, such as XML, OPC, ActiveX, SQL.
- Possibility to use SVG vector graphics and edit it in the integrated graphics editor to visualize the interface.
- Alarm integration - alert the user to defined events with history logging.
- Possibility to organize graphically and tabular data in the form of so-called Trends.
- Surveillance can be extended by IP cameras via RTSP stream: <http://bit.ly/Webcam-en>.

The system uses the existing Ethernet infrastructure to communicate over TCP / IP protocol and in case of different communication, the serial link (RS232 / RS485) is also used. All commands and feedback are processed by the main node in the infrastructure - server (Microsoft Windows workstation) with a component called Promotic runtime installed. This node communicates with terminal devices through software drivers that transmit data via API (iNELS RF) or ASCII (iNELS BUS).

A guidepost describing the communication interface between iNELS and Promotic can be found here: http://bit.ly/communication_iNELS.

The Promotic runtime component uses the Microsoft Windows environment, so any physical workstation can be used to run applications and services. This solution is also designed to run on a virtual machine (VirtualBox or Wmware). More information about licensing an application on a virtual machine can be found here: <http://bit.ly/virtual-en>. Operation of the software solution is, of course, a matter of license for a physical machine, where it is necessary to be aware of the number of controlled elements (so-called variables). Individual licenses for Promotic runtime can be found here: <http://bit.ly/licence-en>.

Various iNELS units can be connected to the Pro-

motoc environment due to the presence of software drivers. TCP / IP allows all requests to be transmitted over ASCII (CU3-0xM) or the JSON API (eLAN-RF-003).

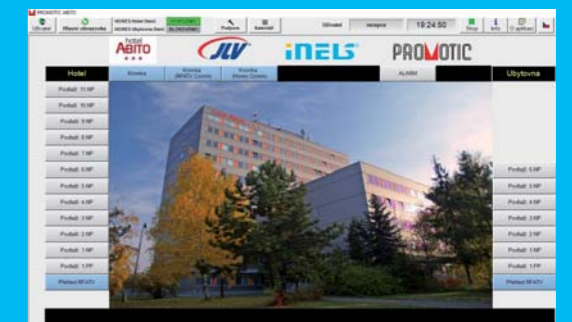
A more detailed description of communication for iNELS BUS can be found here: <http://bit.ly/BUS-en>. And iNELS RF here: http://bit.ly/Promotic_communications_RF.

IoT devices from the iNELS Air portfolio can also be indirectly integrated into the Promotic platform via the MQTT broker. More information can be found here: http://bit.ly/communication_loT-en.

All these different communication platforms can eventually be interconnected through a single web interface.

iNELS reference

- **PROMOTIC** provides monitoring and regulation of room heating in the Abito Hotel in Prague. Rooms are located in 2 buildings: the hotel part and the hostel.
- Connection to the HORES hotel system allows real-time heating optimization according to occupancy or room reservation by hotel guests.
- The system reads data in real-time from iNELS controllers, processes them and monitors them. The system also enables manual changes (editing) of heating parameters.
- Thermoregulation RFATV-1 is used for the regulation itself.



```

Examples > GoogleMaps > City (PmaPanel)
Object Content Events Methods Panel Graphic Permissions Web server
Subobjects
Scripts
Properties
Default
Full XML
XML Line: 1/141, Char: 1, Column: 1
1 <Content ver="00006">
2 <Prop Name="DisabledInRt">0</Prop>
3 <Prop Name="LastEditTime">2019.10.10 18:15:36</Prop>
4 <Prop Name="MacroPars"></Prop>
5 <Prop Name="ObjScriptType">1</Prop>
6 <Prop Name="MemberOfLogicalGroups">menu</Prop>
7 <Prop Name="ReferenceType">0</Prop>
8 <Prop Name="ReferenceName"></Prop>
9 <Events Name="PmEvents">
10 <Event Name="onStart" Type="Pm">
11 <Script><![CDATA[]]></Script>
12 </Event>
13 <Event Name="onStop" Type="Pm">
14 <Script><![CDATA[]]></Script>
15 </Event>
16 <Event Name="onOpen" Type="Pm">
17 <Script><![CDATA[]]></Script>
18 </Event>
19 <Event Name="onClose" Type="Pm">
20 <Script><![CDATA[]]></Script>
21 </Event>
22 <Event Name="onRefresh" Type="Pm">
23 <Script><![CDATA[]]></Script>
24 </Event>
25 <Event Name="onFocusIn" Type="Pm">
26 <Script><![CDATA[]]></Script>
27 </Event>
28 <Event Name="onFocusOut" Type="Pm">
29 <Script><![CDATA[]]></Script>
30 </Event>
31 <Event Name="onKeyPress" Type="Pm">
32 <Script><![CDATA[]]></Script>
33 </Event>
34 <Event Name="onMousePress" Type="Pm">
35 <Script><![CDATA[]]></Script>
36 </Event>
37 </Events>
38 </Methods/>
39 <Prop Name="Title">City</Prop>
40 <Prop Name="Help"></Prop>
41 <Prop Name="Options"></Prop>
42 <Prop Name="Params">par:city;</Prop>
43 <Prop Name="ScriptEngine">javascript</Prop>
44 <Prop Name="ViewAppLevel">client</Prop>
45 <Prop Name="MultiView">0</Prop>
46 <Prop Name="KeyCodeOpen">0</Prop>
47 <Props Name="AccessList">
48 <Prop Name="Style">0</Prop>
49 <List Name="Actions">
50 <Props Name="PanelClose">
51 <Prop Name="Users">$ANY,$OPER</Prop>
52 </Props>
53 <Props Name="PanelOpen">
54 <Prop Name="Users">$ANY,$OPER</Prop>
55 </Props>
56 </List>
57 </Prop>
58 </Content>
  
```

Programming interface.

Find out more about the solution:



Promotic ELKO EP



Promotic Official site

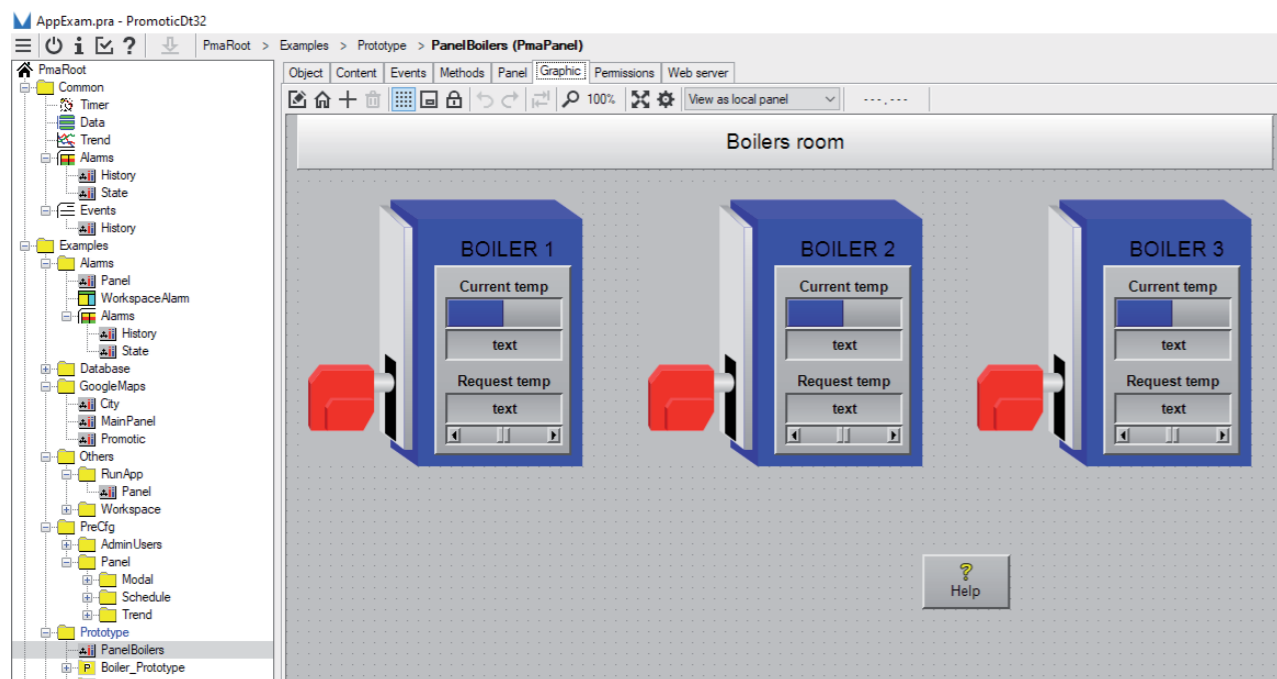


Promotic Price list



Promotic Terms and Conditions

ELKO EP: <https://www.elkoep.com/promotic-scada>
 Official site: <https://www.promotic.eu/en/pmdoc/WhatsPromotic/WhatsPromotic.htm>
 Price list: <https://www.promotic.eu/en/pmdoc/PriceList/PriceList.htm>
 Terms and Conditions: <https://www.promotic.eu/en/pmdoc/PriceList/PriceListConditions.htm>



The user interface.

NIAGARA FRAMEWORK



It is a designation for software and hardware solutions developed by Tridium providing comprehensive control and supervision of home, commercial or industrial automation. The main advantages are:

- Programmable web interface / dashboards and JavaScript or HTML5 control logic for both desktop and phone. The user can also program by drag and drop.
- Connectivity to various interfaces and repositories, e.g. XML, OPC, ActiveX, MySQL, oBix.
- Ability to add custom software drivers written in Java for additional communication protocols.
- Integration of alarms and notifications - alerting the user to defined events with a link to history and communication means (telephone or e-mail server).
- Cooperation with Oracle hotel systems - API connectivity.
- Surveillance can be extended with IP cameras or entire DVRs.
- Support for diverse systems, including voice assistants.
- All software is OS independent - works reliably on both Microsoft Windows and Linux distributions.

The system uses the existing Ethernet infrastructure to communicate over TCP / IP protocol and in case a different communication method is required; the serial link (RS232 / RS485) is also used. All commands and feedback are processed by the main node in the infrastructure - a server (JACE 8000 physical controller or Microsoft Windows / Linux workstation) with Qnx operating system installed. This node communicates with terminal devices through the ASCII (iNELS BUS) driver.

The entire solution architecture is built on a virtual Java machine whose operating system is written to run either on Tridium hardware - JACE 8000: http://bit.ly/Niagara_JACE8000 - or on any workstation if Workbench software is installed carrying all important system components. The whole licensing model is based on the number of data points charged regardless of the communication protocol used.

Integrators use the tool called Workbench to create and edit projects, which allows you to create both network diagrams and graphical interfaces for the web or user dashboards. The software can handle drag and drop commands, but also serves as an interpreter for JavaScript or HTML5.

Only certified partners have access to all documentation related to software drivers and interface description. However, a list of available drivers can be found here: http://bit.ly/Niagara_ovladace-drivers.

iNELS and Niagara Framework

Various iNELS controllers can be connected to the Niagara Framework through the presence of software drivers. TCP / IP allow all requests to be transmitted over ASCII (CU3-0xM) or indirectly via the JSON API (eLAN-RF-003). The framework also includes the presence of an MQTT driver to establish communication with devices from iNELS Air.

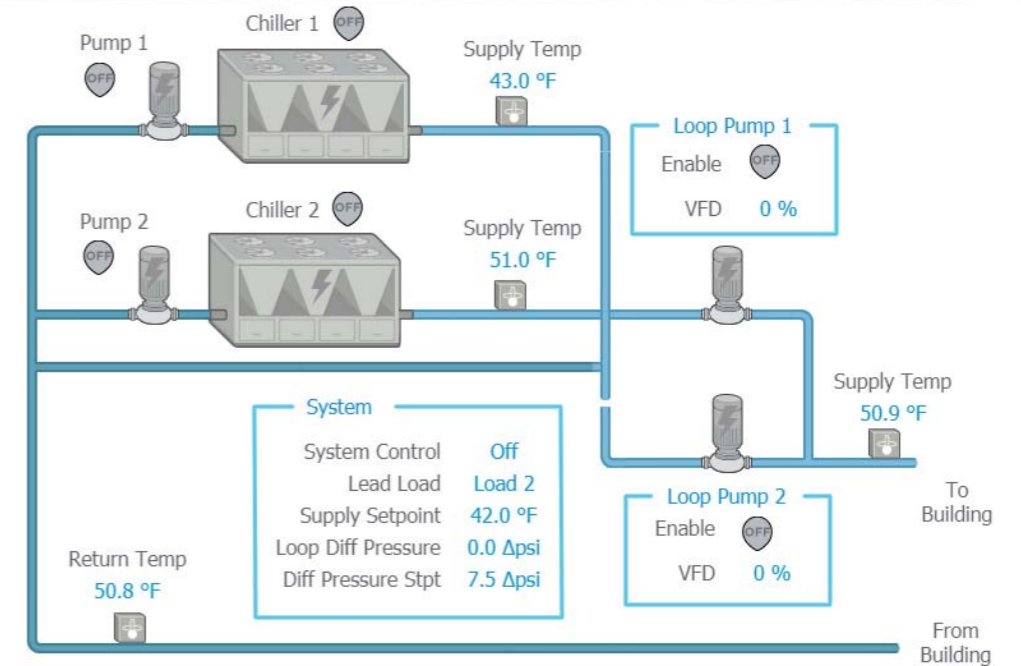
Our company is an exclusive distributor of Tridium hardware and software, including basic technical support for the combination of iNELS and Niagara Framework.



Central unit
CU3-03M



Smart RF box
eLAN-RF-003



Niagara
ELKO EP



Niagara
Official site



Niagara
Products
and solutions

Find out more about the solution:

ELKO EP: <https://www.elkoep.com/inels-bms>
 Official site: <https://www.tridium.com/en/products-services/niagara4>
 Products and solutions: <https://www.tridium.com/en/resources/library>

FB FLOWBOX

The philosophy of the FlowBox system is to integrate monitoring and control of all systems into one centre, which is able to integrate gas boilers, infrared heaters, heat recovery units, fans, destratifiers, radiators, infrared heaters, electrically controlled skylights, adjustable LED lighting, camera systems, security and more. The whole system can be used in three ways: as a dedicated cloud for closed objects, an intranet solution for large installations, or a public IoT cloud.

The platform is based on MASTER => SLAVE, but also MASTER => subMASTER or Gateway or subMASTER => SLAVE.

The architecture of the system is based on so-called realms (platform environment) aggregating all monitored or controllable elements.

Access to the system is via mainly modern web browsers supporting HTML5, jQuery and JS Stack, which can work with a responsive design.

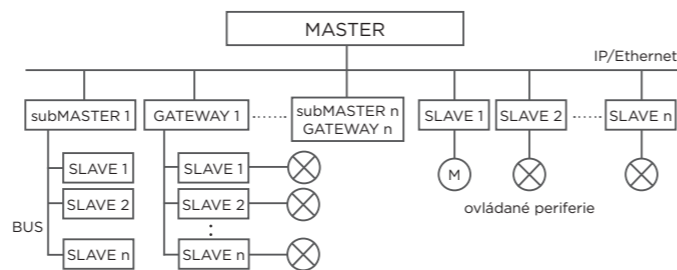
The system manages to aggregate and distribute data via MONGO or SQL databases, while platform

control is based on the multi-paradigmatic RUST language.

There are a number of tools for connecting with third parties via the API using eg HTTPS (which is the case for REST API, ASCII), Modbus (TCP / RTU), DALI, M-BUS, MQTT and others - the system is then truly cross-platform.

Programming in the FLOWBOX interface is done using a simple C or PHP-like syntax.

This platform is easy to deploy with clear hardware and software requirements. The system must use Linux or Debian OS running on an Intel CPU and can also be run as a virtual machine.

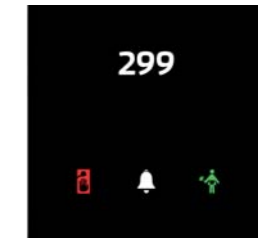


iNELS and Flowbox

Software implementation between Flowbox and iNELS will be completed soon. Interconnection in the form of a software driver will enable customers to safely control and monitor our devices via API (JSON), ASCII or MQTT broker.



Switching actuator SA3-04M



Glass card reader GCR3-11

WHAT'S NEW?

FLOWBOX platform support analytical functions where any input and output (sensor, device, binary state etc.) may have enabled own history data record that can lead to the individual graphical reports presented in user dashboards. Alarm events can be just

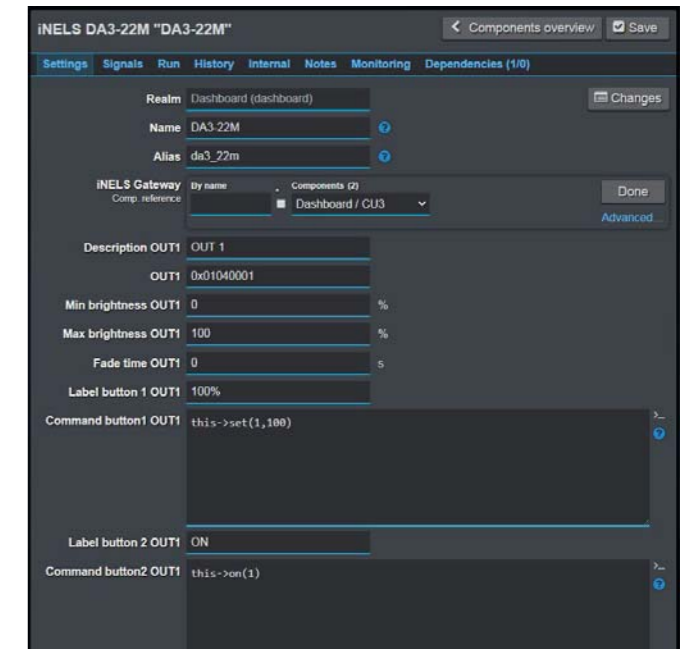
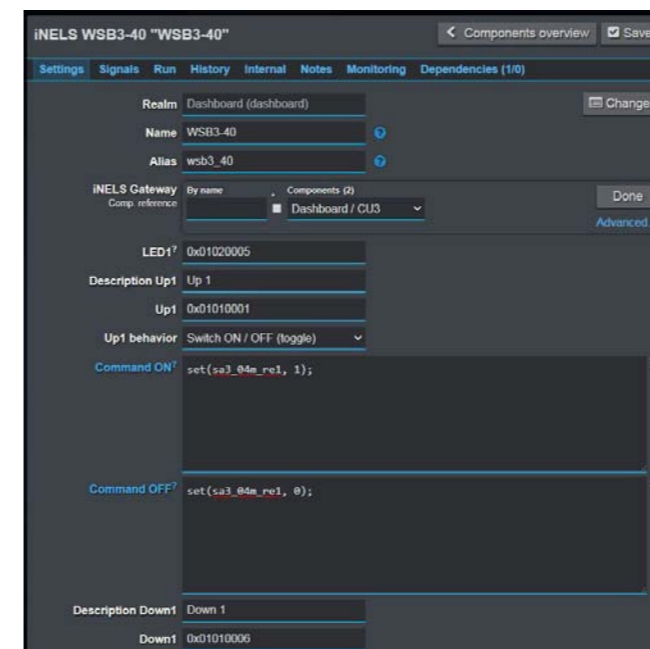
emails, SMS or pushover (instant messaging) alarms or specific FLOWBOX commands that can trigger further external visualized (lighting) or sound based alarm system.



Wall switch button
WSB3-40



Universal dimming actuator
DA3-22M



ENVIRONMENT AND WEATHER MONITORING

INTUITIVE MULTITENANT USER INTERFACE

- Environmental sensors monitoring
- Temperature, humidity, air quality (CO, CO2), flooding,
- presence, light intensity and many others sensors support

- Intuitive application layout, no engineering skills required
- Different rules for various users
- User defined settings of the view, historical records, control rights, panels, etc.



Flowbox
Official site



Flowbox
Compare of
products

Find out more about the solution

Official site: <http://www.flowbox.com/en>
Compare of products: <http://www.flowbox.com/en/products-compare>

The price list of products and services is not published, but Flowbox prefers to consult each design to create the most efficient and affordable solution.

A solution based on BMS can be covered by four following options. The main difference is amount of available features related to control and supervision.

Feature	iNELS iDM	PROMOTIC	powered by niagara framework	F3 FLOWBOX
programming interface	✓	✓	✓	✓
virtual wire amount limitation	✓	✗	✗	✗
integration of mathematical or logical functions	✓*	✓	✓	✓
third-party interconnection (ASCII or software drivers)	✓**	✓	✓	✓
alarm / calls / text / e-mail notifications	✓***	✓	✓	✓
support of ORACLE hospitality solution (Fidelio / Opera)	✗	✓	✗	✗
support of multiple CU3-OxM	✗	✓	✓	✓
SCADA interface/support	✗	✓	✓	✓
iNELS RF interconnection (RFIO or JSON)	✓	✓	✓	✓
iNELS Air interconnection (MQTT)	✗	✓	✓	✓
HTML5 / JavaScript frontend - dashboards and web supervisor	✗	✓	✓	✓
multimedia integration (CCTV, audio, video)	✗	✓	✓****	✗
History logging	✓	✓	✓	✓
SQL interconnection	✗	✓	✓	✓

* basic features implemented only
 ** partial support: via ASCII or selected drivers only
 *** partial support: calls and texts only
 **** partial support: CCTV only

New series of glass ROUND controllers

After the successful introduction of the iNELS GRMS glass series. We also focused on improving these elements, we proceeded to redesign the shape and some design improvements on the GSB / GTP / ... glass panels. The devices of this generation GMRS are designed as a compact solution, so that the base, the mounting platform is not separated from the control part of the device. Everything is in the one solution. First, the mounting frame is attached

to the installation box. It then connects the power wires, the bus or the wires to the device. The inputs / outputs and the entire unit snap into the mounting frame, which is mounted on the wall box. This design also improves the fitting of the product to the wall, eliminating any possible unevenness of the wall plaster base, etc. Available in pure white and elegant black.



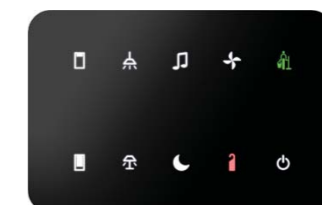
GSB3-220/S
Glass switch button
with symbols



GSB3-240/S
Glass switch button
with symbols



GSB3-260/S
Glass switch button
with symbols



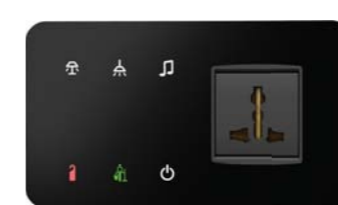
GSB3-2100
Glass switch panel



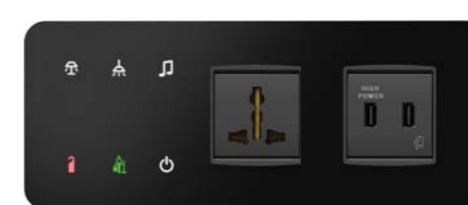
GCR3-211
Glass card reader



GRT3-250
Glass room
thermo-regulator



GSP3-260/xR/1F
Glass bedside panel, right



GSP3-260/xR/2F
Glass bedside panel, right

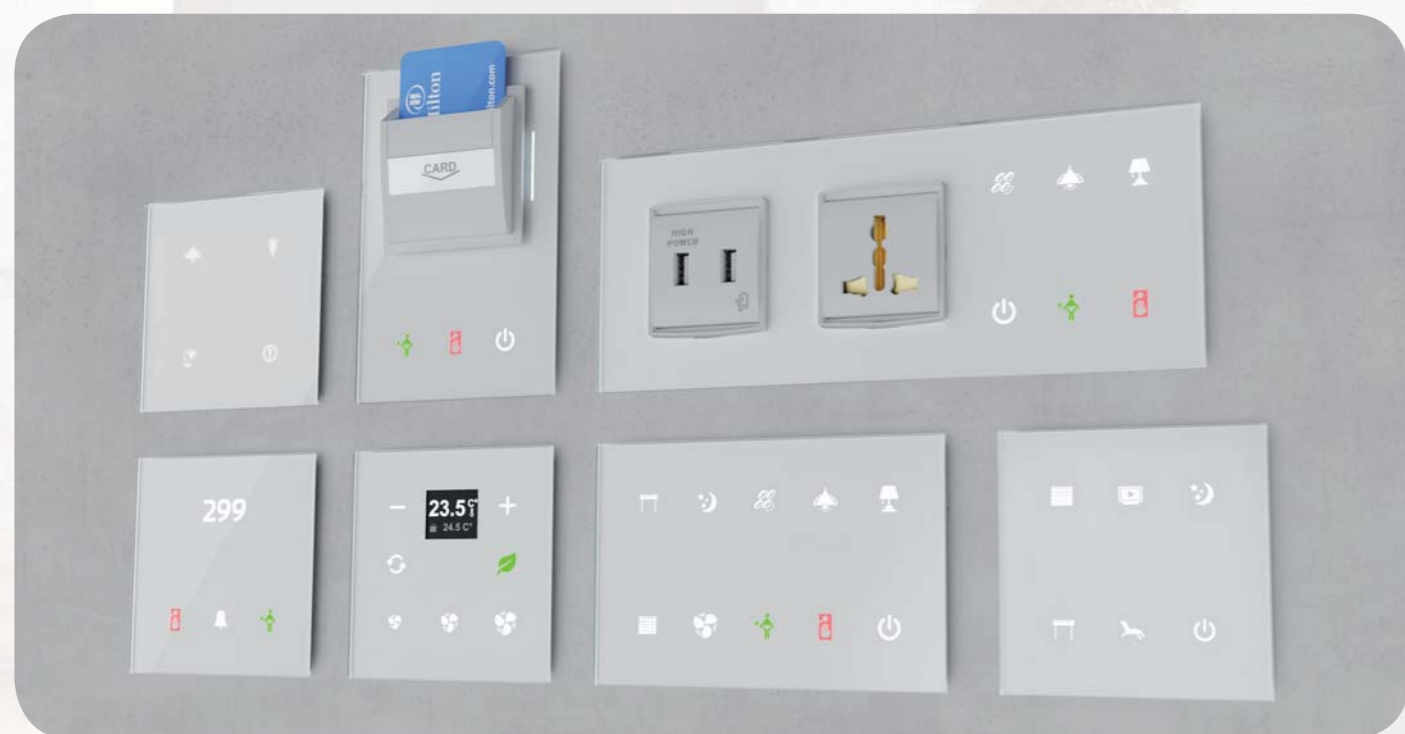


GCH3-231
Glass card holder

Installation



- ✓ The controls are equipped with an ambient light intensity sensor.
- ✓ Based on the information from the sensor, it is possible to light up the orientation blue diodes in the GSB3 buttons or to perform various actions in the iDM3 software, for example to light the light circuits in the corridor, etc.
- ✓ The advantage over standard buttons / switches is saving space, signalling the status of any system output.
- ✓ Communication BUS connection with screw less terminals.
- ✓ The new GBP3-xx design is also compatible with the Vimar plug-in modular system.
- ✓ They are available in the black and white versions of the LOGUS⁹⁰ design line, just like the others.
- ✓ Standard Size: 94 x 94 mm (GSB3-40).



Installation



- ✓ The buttons have increased sensitivity for faster system response and response.
- ✓ Illumination of individual symbols is realized by a more energy-efficient method.
- ✓ With the possibility to set the mode of automatic backlighting of symbols in response to ambient lighting in any given room environment.
- ✓ Communication BUS connection with screw less terminals.
- ✓ The new GBP3-xx design is also compatible with the Vimar plug-in modular system.
- ✓ On the GCR, we have increased the area for marking, room numbers to the maximum size 18 x 58 mm.
- ✓ Larger size: 100 x 100 mm (GSB3-220S).



RESERVATION AND ACCESS SYSTEM

For iNELS users in accommodation services, we have prepared the iNELS Hotel reservation and reception system, which is designed to manage small accommodation facilities such as smaller hotels, guest houses, apartments, hostels, cottages and cottages.

The system can be installed on a desktop computer at the reception, as well as on a central or stand-alone server, where the reception is connected as a server terminal.

The system communicates over the LAN directly with the central units CU3 in the room or sub-cabinets. It ensures immediate reaction of the iNELS electrical wiring system to changes in reservations, room access management or, for example, the loss of a card by a guest. Reservation is entered into a pre-prepared form, where,

of course, in addition to the standard required information, it is possible to assign multiple cards for the accommodation unit. To assign a card to a room, simply click on the green plus button next to the card number field in the form and place the card on the reader at the Reception. After saving the Reservation into the system, the card numbers are immediately transferred to the CU3 Central Unit, which assigns the card numbers to the specific reader assigned to the reserved room. Reservations created and saved in this way can be monitored or modified (moved, divided reservation) in the Dashboard, which offers both a general overview of accommodation capacities and previews of individual days in the calendar or the occupancy of the room in the month.

It is a simple hotel system that can be used by two basic groups of users of Hotel systems:

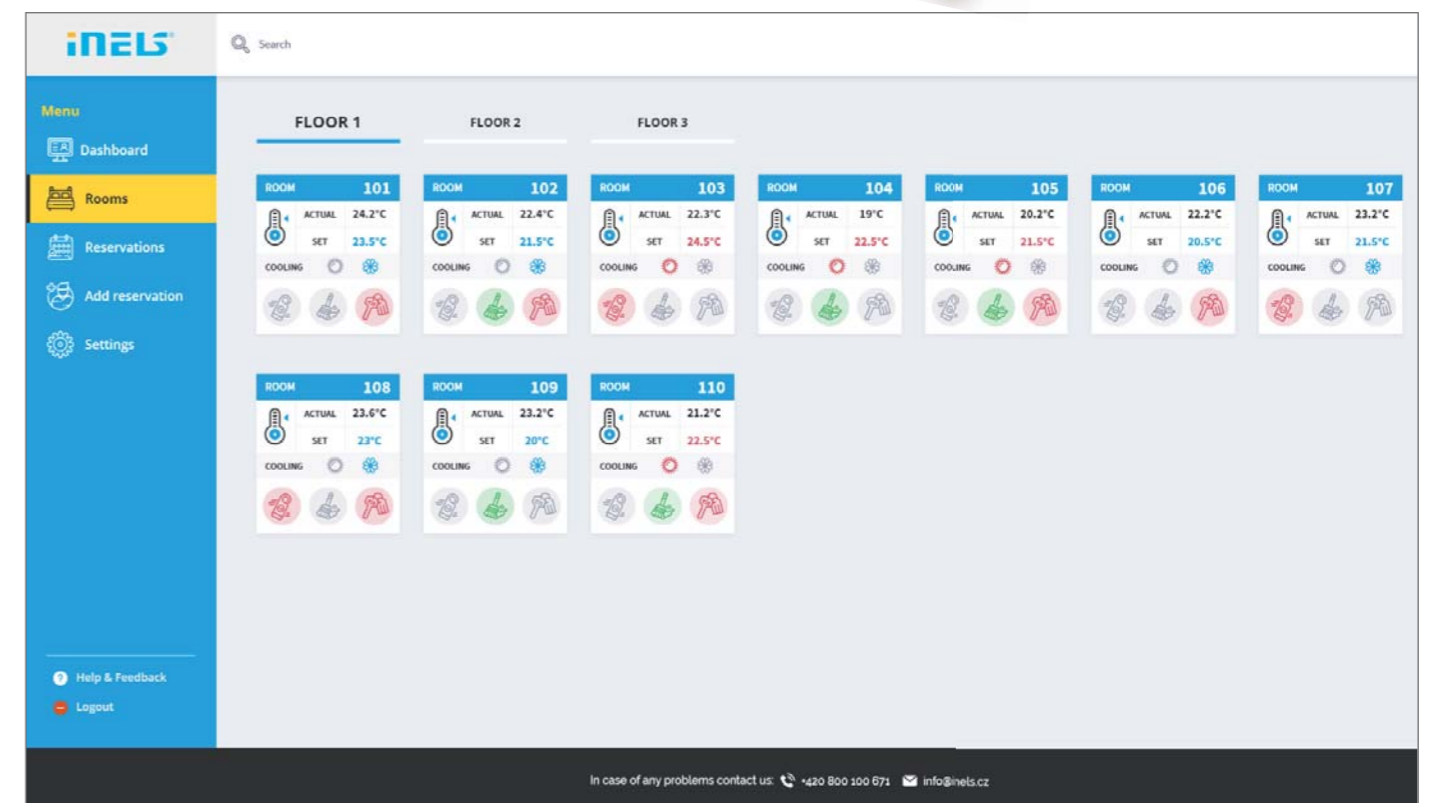
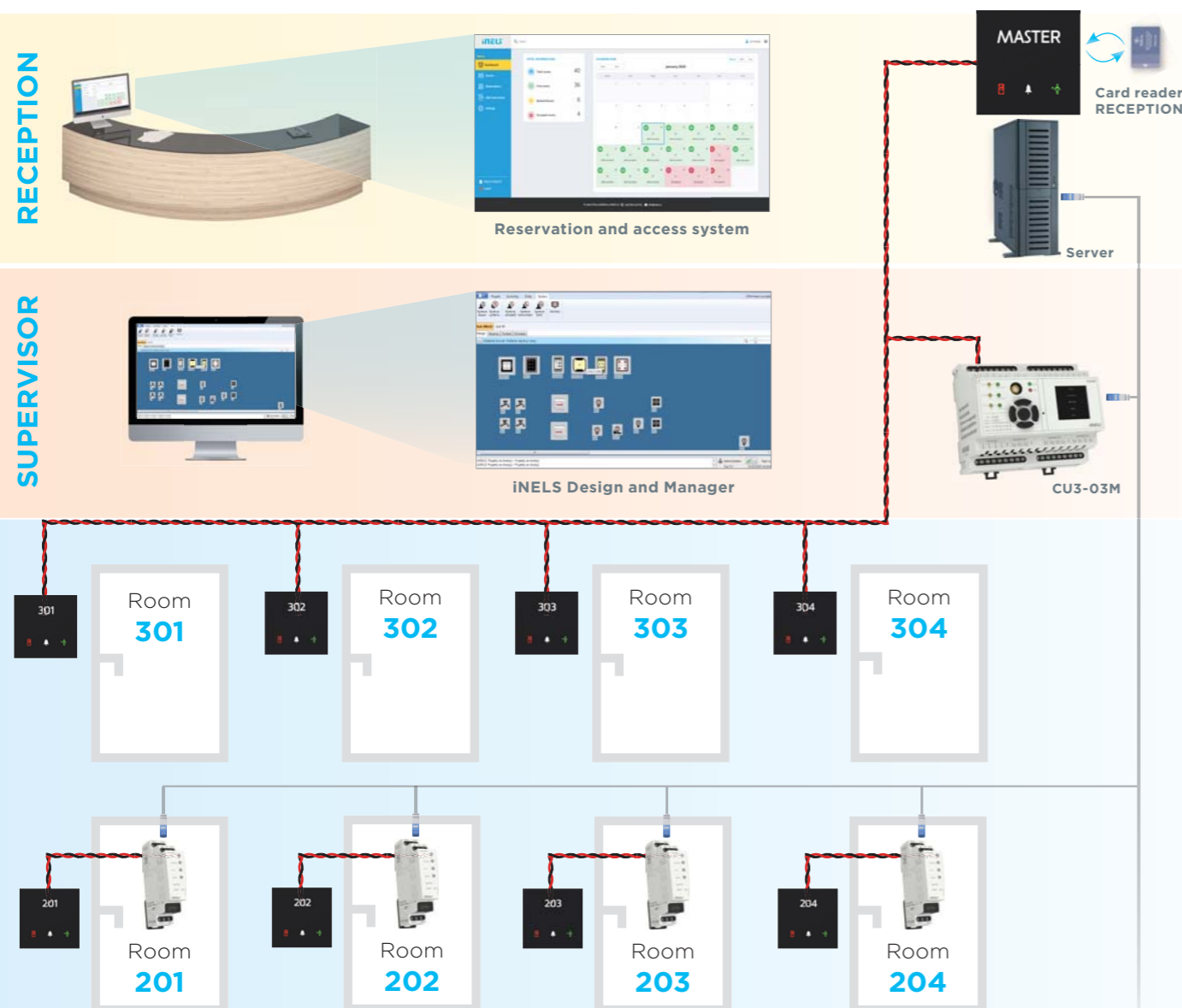
Reception

- entering and editing hotel room reservations
- view the list of entered reservations
- pairing cards to access rooms
- monitoring the current state of heating or cooling in individual rooms
- Monitoring of recall of cleaning of rooms (MUR) and state of no disturbance (DND)
- possibility to see states of connected central units CU3 for identification of possible defect

System managers

- Allowing users to configure the entire system as opposed to receptionists.

You can then use both the assigned physical card and the NFC-enabled smartphone app - iNELS Digital Key (IDK), which is an easy way to open a room without having a physical card with you.



THE NEW miniCU - world's smallest central unit

SMALL, PERFORMANCE AND SAFE

Thanks to the new compact central unit from the „CU3“ family, iNELS BUS can now manage optimally and comfortably not only hotel rooms, but also larger apartments or residencies - with all the advantages that the bus solution (or „wire“) brings: speed, variability, interconnection to superior systems

The new miniCU central unit together with the PS3-30 / iNELS isolator power supply takes up only 4-Modules (70mm) in the rack, but can handle up to 32 units (bus) on the bus. It is possible to connect all elements of iNELS BUS system, but most commonly GRMS controllers, switching and dimming actuators.

Built-in MODBUS protocol connected to RS485 terminals enables direct HVAC connection - if the hotel is designed differently or separately (fan coil thermostat).

Thanks to its unique address, it (miniCU) can be scaled to different ranges of master control (CU master, Bacnet, Modbus, Niagara...) and also connected to the PMS (Property Management System) of the hotel, access system (door lock) or Hospitality TV.

Width only 1M (17.5 mm).

Installation on DIN rail.

Encrypted communication by 256bit key TCP / UDP = high level secure communication.

iNELS BUS for 32 units (addresses).



Power supply DC 27V
1.5 W consumption only.

RS485 with Modbus protocol
for HVAC connection.

Indication of status.

Ethernet LAN interface
RJ45, 100 Mbps.

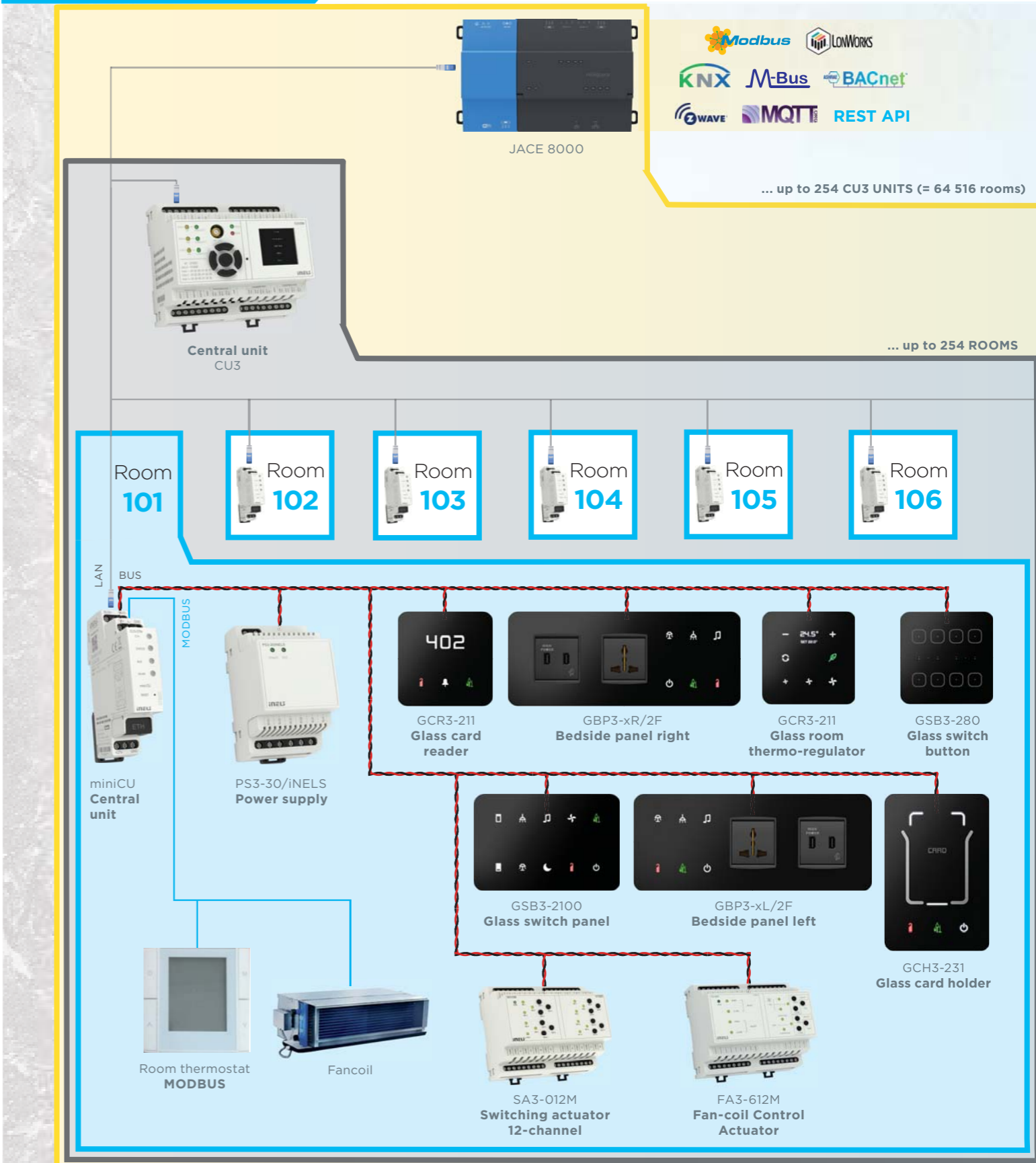
Possibility of control by
superior CU3-01, 02, 03.

PS3-30/iNELS - Power supply with bus separator



- PS3-30/iNELS is a switched-mode stabilized power supply 27V DC with total 30 W.
- It is used to supply central units and external masters within the iNELS wiring system.
- Part of the power supply is an integrated bus separator BPS3-01M for powering the iNELS peripheral unit of one bus.
- It is equipped with electronic protection against short-circuit, overvoltage, power and temperature overload.
- PS3-30/iNELS in 3-MODULE version is designed for mounting into a rack on a DIN rail.

Example of the installation



iNELS SCOPE

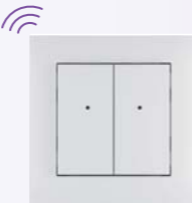


POINT TO POINT

- Simple wireless transceiver solution.
- Usually it serves as an accessory when extending the wiring or for solving the acute condition (switch behind the cabinet, control where there are no wires...).



iHC-MAIRF App



On-wall button controller - 4 buttons



Keychain - 4 button



Remote RF controller with display - WHITE



Dimming socket-plug - MULTI function



Window / door detector



Flood detector



Motion detector



Smoke detector



Twilight switch



Coloured wireless bulb



FLAT

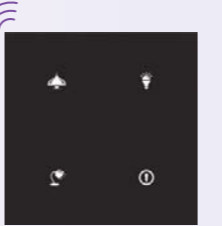
- Wireless home automation system solution where iNELS RF Control is used as the primary electrical installation.
- Via the eLAN-RF gateway, the installation can be controlled from devices with applications (phone, tablet, watch, TV) even remotely.



Wireless touch unit



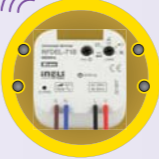
Smart RF box



Glass touch controller - 4 buttons BLACK SHARP



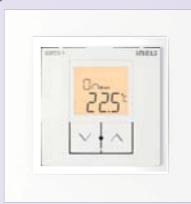
Switch unit 6 channels - MULTI function



Universal dimmer - MULTI function



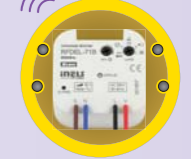
Wireless thermostatic radiator valve



Temperature controller



On-wall button controller - 2 buttons



Switch unit for shutters



HOUSE

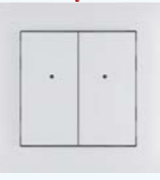
- BUS (wire) solution for flats, apartments and medium-sized houses.
- The world's smallest central unit.
- The miniCU allows connection of up to 32 peripheral units on the BUS.



iHC-MARF App



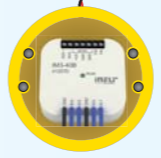
miniCU Central unit



Wall controller



Glass switch button



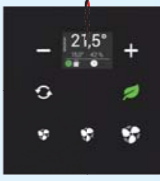
Binary input unit



Switching actor 2-channel



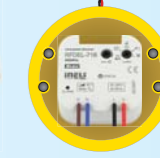
Elko smart touch screen



Room thermo-regulator



Switching actuator



Switching actuator

UP TO 64 ADDRESS



VILLA

- Bus (wire) solution for larger houses, villas, pensions, offices and companies.
- The CU3-01, 02, 03 central units are suitable for this solution - they allow direct connection of 64 units and through extension masters up to 1024 units.
- 3-way control via ASCII protocol: iHC, BMS, PMS applications.



iNELS Design Manager



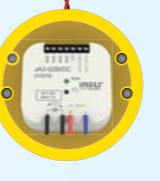
Central unit



Shutter actuator



Glass touch panel



Switching actor



Switching actor



Digital-analog converter



Digital room controller



Dimming actuator for LED sources



BUILDING

- iNELS offers several options for building management. CU3-03M: can control up to 1024 units via an external MI3-02M / ETH master with LAN interface.
- CU3-03M: as MASTER it can control up to 252 miniCUs over TCP / IP protocol (iDM free SW).
- Connection Server: can control up to 8x CU3 via ASCII and IDM3 (free) software.
- Niagara: The JACE 8000 can control up to 100 CU3 (ie 57,600 units) or eLAN-RF



Niagara Framework



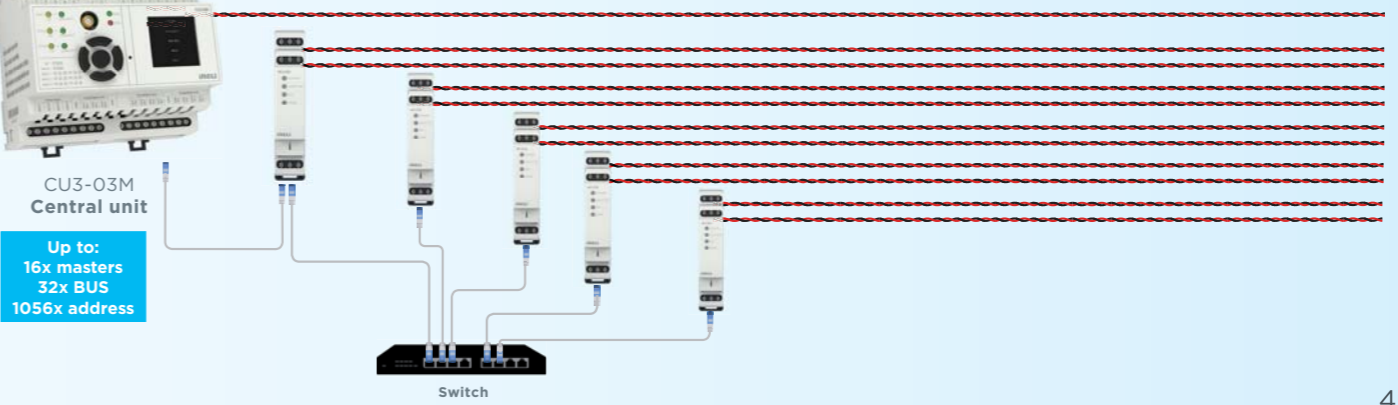
JACE 8000 Central unit

Až 24x CU3 integrated CU units



CU3-03M Central unit

Up to: 16x masters 32x BUS 1056x address



YOU CAN ALSO CONTROL iNELS BY VOICE

DEVICE INSTALLATION

With the advent of smart technology in the everyday life of people within Smart Home devices, so-called voice assistants are becoming increasingly available. In the home they find employment in playing music, sending messages or calling friends. As part of our Smart home, we've launched Google home and Amazon Alexa apps that can make life easier for you.



GOOGLE HOME



Google Home can become a member of your smart home. It communicates seamlessly with smart devices such as iNELS RF. This allows you to control, for example, the temperature setting or the light intensity by voice. The voice assistant is designed to comfortably control the RF Control wiring by voice using your mobile phone or smart speaker. As a complement to RF Control, iNELS Smart Home Solution blends in with every modern home.



AMAZON ALEXA



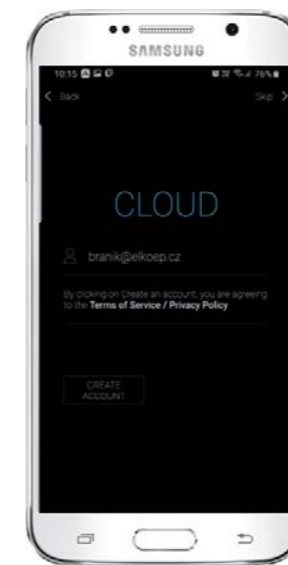
With Alexa Artificial Intelligence, you can simplify your daily life by setting an alarm, notifications, creating new items or reminders in your calendar. The voice assistant can answer questions and control individual devices and smart homes. It is available on mobile phones, TVs, smart speakers and other devices. It is designed to comfortably control RF Control wiring by voice using your mobile phone. It is a supplement to the RF Control system and within the iNELS solution.



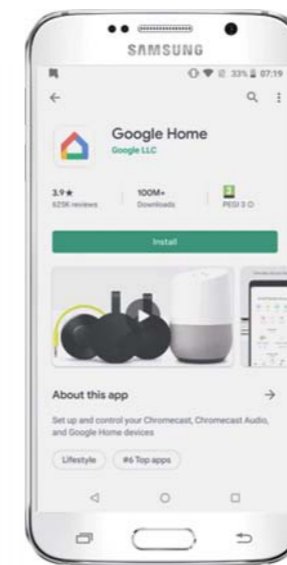
GOOGLE HOME

eLAN, Cloud - installation

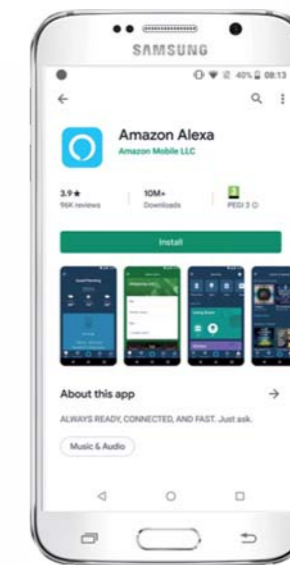
- You can download the current version of the app on the Google Play / App Store under the name iNELS Home RF Control - Cloud.
- After downloading the app, create a cloud account by entering your email and password and scan the key that you receive as a QR code using the app.
- Configure eLAN and update FR (version 3.0.157 and later). Then connect the eLAN to the cloud.
- After installing the Google home app and creating an account for Google home, follow the instructions.
- In your device settings, select iNELS Smart home and sign in to the cloud to pair both services together.
- Begin all commands by saying **Hey Google!**



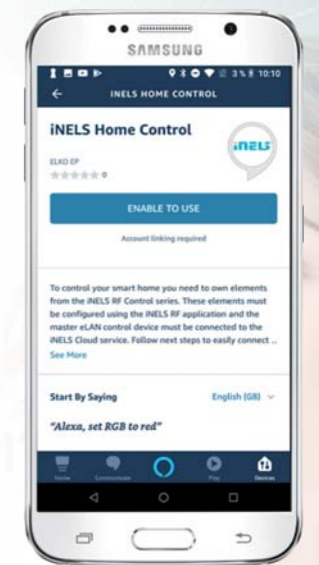
Register to the Cloud via email and set a password.



Preview the Google home app on Google Play.



Preview the Amazon Alexa app on Google Play.



Setting up products in iNELS Home Control.

AMAZON ALEXA

eLAN, Cloud - installation

- You can download the current version of the app on the Google Play / App Store under the name iNELS Home RF Control - Cloud.
- After downloading the app, create a cloud account by entering your email and password and scan the key that you receive as a QR code using the app.
- Configure eLAN and update FR (version 3.0.157 and later). Then connect the eLAN to the cloud.
- After installing the Amazon Alexa app and creating an account for Amazon Alexa, follow the instructions.
- In your device settings, select iNELS Smart home and sign in to the cloud to pair both services together.
- Begin all commands by calling out **Hey Alexa!**

Application iHC-MAIRF-Cloud / iHC-MIIRF-Cloud:

- Designed for iOS 10+ and Android 5.0+.
- Optimized for devices with 800x480 screen resolution.
- The language of the application changes automatically according to the language set in Android / iOS.
- You can create a cloud account using the Setup Wizard or the login button in the main menu. The recommended minimum speed for connecting the eLAN-RF to the Cloud should be in the order of megabytes per second (3G - 1Mbit / s and higher).



Functionality of the application is possible only with the device eLAN-RF-003, eLAN-RF-Wi-003 for controlling RF devices. One of these devices must be used in your wireless installation.

PABLIKO VOTING SYSTEM

INELS IN MUNICIPALITIES

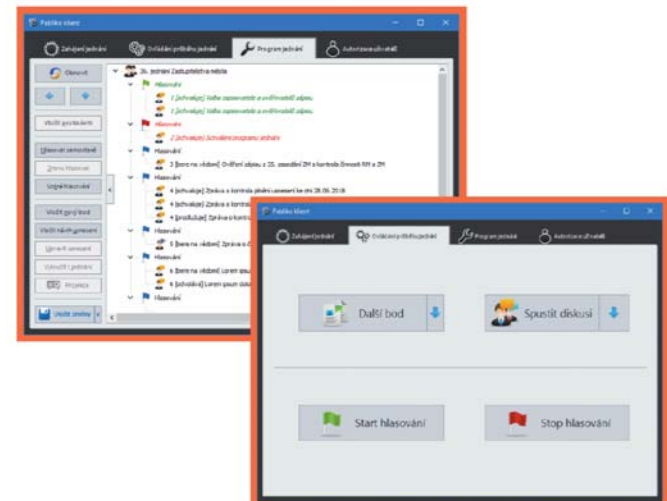


ELKO EP not only manufactures, but also supplies its products to companies that strive to make life easier not only for city dwellers but also for state institutions. The same was true in the case of a contract for HD MEDIA, which came to the market with the Konsiliář program, focusing on the preparation and electronisation of materials for the board and the council. It has been developed since 2007 and offers comprehensive solutions with time savings and maximum work efficiency. ELKO EP is the author of two units - wireless voting and wired voting controllers.



ALL THE INFORMATION IN ONE SYSTEM

Pablíko's voting system from HD MEDIA offers the possibility of a comprehensive interconnection of prepared RM / ZM materials, electronically created in the Consumer program, into an environment suitable for their approval (voting). The system aims to provide maximum flexibility with regard to operation and rules of procedure. In the current version, its behaviour can be adjusted by 90 different parameters that control the functionality, behaviour towards the Rules of Procedure and the appearance of the whole system itself.



Benefits of the Pablíko voting system

- ✓ The voting system can be supplemented with a conference system with fully automatic discussion, as well as a camera system, again fully automatically controlled at the time of discussion.
- ✓ All spoken words can be saved in real time to an MP3 / OGG audio file.
- ✓ At the time of the discussion of the materials and discussion, the system supports the projection of the marked appendices from the Consiliarium program.
- ✓ The changes made at the time of the discussion do not affect the materials already submitted. These still remain in the form in which the submitter published them.
- ✓ After each vote, the system can be set up to print voting protocols that can be printed on a local printer or even virtually in PDF files.
- ✓ Wireless voting units are powered by a 3V battery that can be replaced by the user.

WIRELESS UNITS (INELS RF)

The wireless variant is suitable for external areas where the voting equipment is connected to the projection unit (usually a projector), where the course of the whole meeting is projected, before the board meeting / board meeting. The whole device is therefore simply portable.

Wireless units have Pro / Again / Abstain / Discussion / Note / Logout options. Each of the councillors / councillors will obtain at the constituent council a specific unit (unit number) with which it is already authorized. The CR 2032 batteries are supplied with a one-year battery that can be easily replaced by the user. The range of these units is in the open space up to 100 m.



WIRED UNITS (INELS BUS)

The surface is made of high-quality tempered glass, with only a gentle touch to control it. The voting unit is offered in an elegant two-colour design. The individual Pro / Again / Abstain / Discussion / Note and Cancel symbols are backlit by coloured light guides for better orientation during the meeting. There is no problem for the unit to set up additional feedback in the form of beeps and vibrations.

The units include a contactless chip card reader, with which the emphasis is not on seating order. The units are designed for fixed installation in tables.

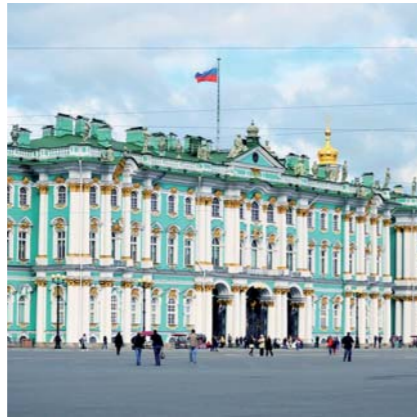


REFERENCES



Bhutan National bank
Timphu, Bhutan

- fully equipped with iNELS bus and RF installations
- more than 300 iNELS elements & 2,000 lights under the full control of the iNELS Bus System
- 10" Touch Panels with iNELS Home Control app on each floor



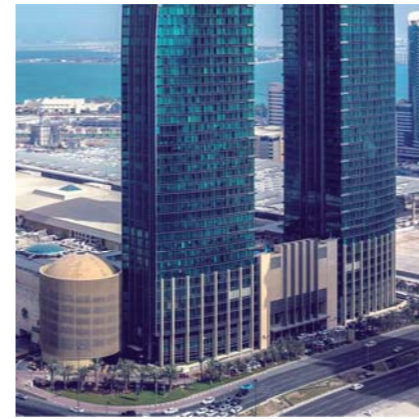
Hermitage Museum
St. Petersburg, Russia

- one of the world's most famous museums, based in St. Petersburg
- dimming of selected zones with DIM-6
- cooperating with wireless RFDAC-71B controller



Magyar State Opera
Budapest, Hungary

- every additional lighting source is controlled by iNELS system
- the devices here are controlled by RF Touch
- for switching the RFSA-11B and RFSA-66M is used



Marriott Marquis
Doha, Qatar

- 5-star hotel in the Doha City center lighting control, HVAC control,
- master switch OFF
- 44 floors, 397 rooms, 182 suites, 18 meeting rooms



Hotel Isla Mallorca & Spa
Mallorca, Spain

- 4-star hotel in Palma de Mallorca
- 10 floors, 154 rooms, wellness, bars, restaurant, meeting rooms
- lighting control, HVAC control exit button (switch OFF)



Rocks Hotel & Casino
Kyrenia, Cyprus

- 5-star hotel
- located close to historical city Kyrenia
- the lights are controlled by iNELS system via light panel, USB socket, glass thermostats



Inter Power Ltd.
Sofia, Bulgaria

- smart RF System controls lighting, heating, security and CCTV
- separate relays for light circuits switch it on, off or dim
- eLAN-IR-003 allow remote control of A/C and presetting of work schedules



Lexus Showroom
Lviv, Ukraine

- iNELS BUS - DALI for 120 lighting zones
- switching, dimming and light shade are controlled without single switch
- controlled via sensors



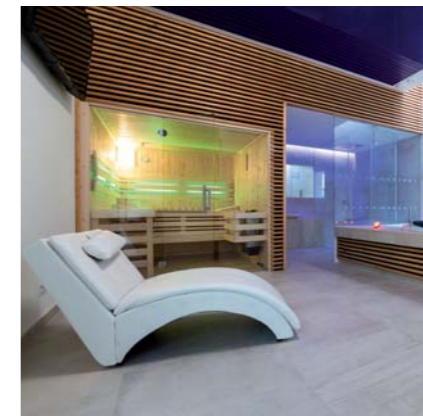
Pet shop
Slusovice, Czech republic

- iNELS BUS controls
- temperature, water level, circulation, CO as well as air controlled by iNELS Smart Solution
- annual energy cost savings of more than 50%



Radisson Ridzen Hotel
Riga, Latvia

- 7 lighting zones integrated in iNELS RF system
- sockets near beds for comfortable staying
- switches with laser-printed icons



Arigone Hotel
Olomouc, Czech republic

- intelligent installation iNELS
- Guest Room Management System with CU3-04M Hotel Bundle
- ready for communication with iNELS BMS



Chauhanji's Residence
India

- used iNELS RF Control
- controlling the lighting by RFWB-40 wireless switches and the RFSA-61B multifunction switch units
- iNELS Home Control mobile app

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