Highlights
Spring 2020

News from iNELS & ELKO EP World.

ELKO ep ®

www.elkoep.com

iNELS ®

www.inels.com

Content

Improved and new relays
durable, acurate

Glass touch wireless controllers

The new miniCU - world´s smallest central unit
Small, performance and safe
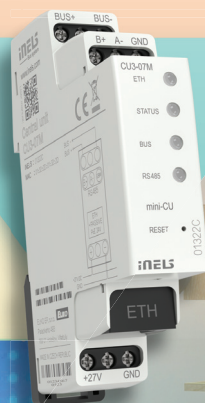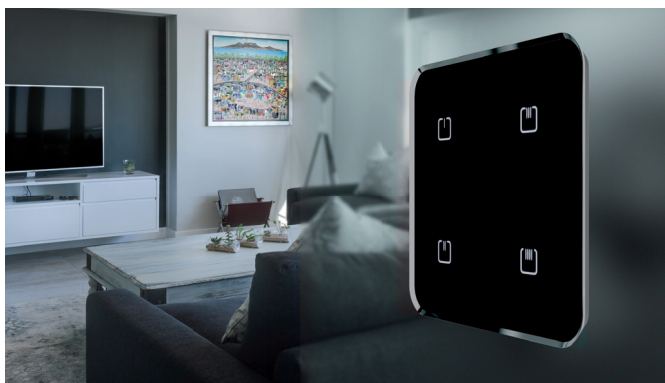
In-glass switch with integrated dimmer and wireless control

Control iNELS via TV
App for Samsung Smart TV

Do you prefer sharp or round?
New range of round glass GRMS controllers
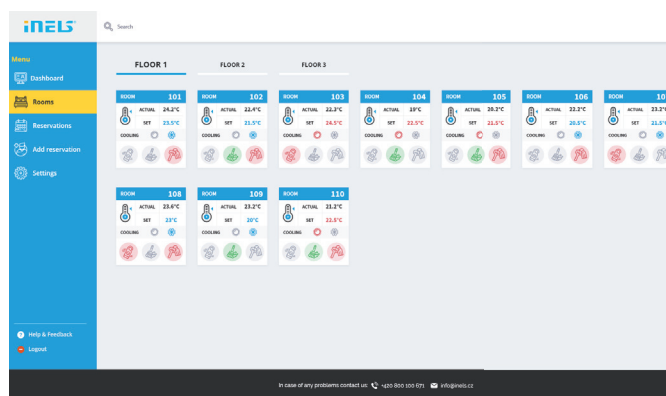
Reservation and access system
for hotel and pension reception

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

Pabliko voting system
iNELS (RF&BUS) in Municipalities

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.

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.

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.

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

	CRM-181J	CRM-183J	CRM-2T	CRM-2H	CRM-91H	CRM-93H	CRM-111H	CRM-113H
Contact Configuration and Rating	SPDT (1 Form C) 16A/250V	SPDT (1 Form C) 16A/250V + DPDT (2 form C) 8A/250V	2x SPDT (2x 1 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

	CRM-181J	CRM-183J	CRM-2T	CRM-2H	CRM-91H	CRM-93H	CRM-111H	CRM-113H
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	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, 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

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)
Dimmensions	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

	CRM-181J	CRM-183J	CRM-2T	CRM-2H	CRM-91H	CRM-93H	CRM-111H	CRM-113H
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	PTRA-216K	PTRA-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

	CRM-121H	CRM-131H	PTRM-216K	PTRM-216T	PTRM-216KP	PTRM-216TP	PTRA-216K	PTRA-216T
Contact Configuration and Rating	SPDT (1 Form C) 16A/250V	SPDT (1 Form C) 16A/250V	2x SPDT (2x 1 Form C) 16A / 250V	2x SPDT (2x 1 Form C) 16A / 250V	2x SPDT (2x 1 Form C) 16A / 250V	2x SPDT (2x 1 Form C) 16A / 250V	2x SPDT (2x 1 Form C) 16A / 250V	2x SPDT (2x 1 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

	CRM-121H	CRM-131H	PTRM-216K	PTRM-216T	PTRM-216KP	PTRM-216TP	PTRA-216K	PTRA-216T
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	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, ON/OFF DELAY, 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, 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, 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, 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, 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, ON/OFF DELAY

General information

	CRM-121H	CRM-131H	PTRM-216K	PTRM-216T	PTRM-216KP	PTRM-216TP	PTRA-216K	PTRA-216T
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)
Dimmensions	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

	CRM-121H	CRM-131H	PTRM-216K	PTRM-216T	PTRM-216KP	PTRM-216TP	PTRA-216K	PTRA-216T
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

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.

Control input "S".

Time range setting.

Fine time setting.

Time setting: rotary switch and potentiometer.

Supply terminals.

Red LED output indicator.

Possibility to connect load onto controlling input.

Symbol:
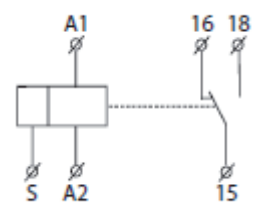
New

Selected functions and graphs

CRM-81J

ZR - Delay ON
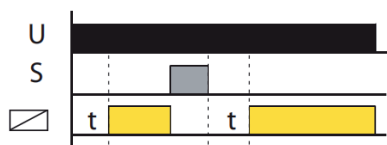
ZN - Delay OFF
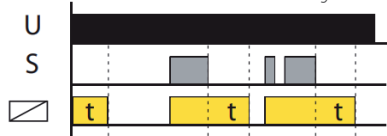
CRM-181J

ON DELAY with Inhibit

$T = t1 + t2$

INTERVAL ON with Inhibit

$T = t1 + t2$
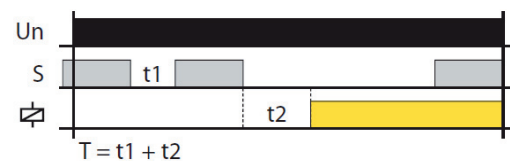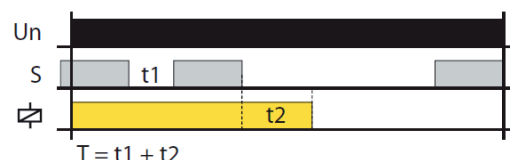
- Often referred to as "impulse".
- Bistable relays are used to switch power on / off, send impulse commands and have a wide range of applications from common houses and corridors to warehouses, manufacturing halls, hospitals, etc.
- It can be used especially for switching and controlling lighting, heating, 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.

Installation savings (cable consumption, quick assembly).

The state of the bistable relay changes with a short control pulse, which results in a zero power consumption of the relay and is noiseless.

Manual control option.

Switch for ON./OFF. Remote coil control (service, maintenance).

Trouble-free switching of LED sources with surge currents up to 80 A.
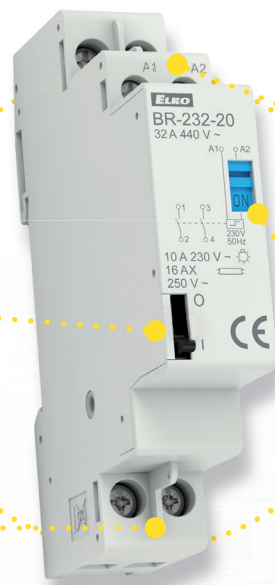
Maximum load of LED power supplies		
BR-216-10/11/20	BR-220-20	BR-232-20
max. 2 A per pole	max. 6 A per pole	max. 12 A per pole

In configuration of NO/NC contacts:

BR-216-10	BR-220-20	BR-216-11	BR-232-20	BR-216-20
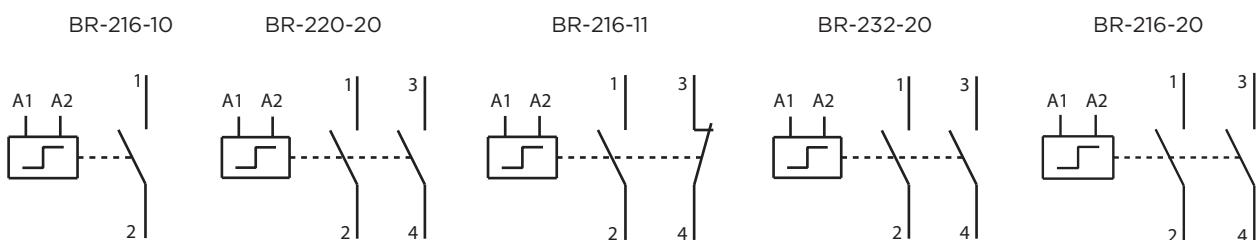
INNOVATIVE STAIRCASE SWITCHES

Staircase switch CRM-4

Programmable staircase switch CRM-46

Innovation

New

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

glow lamps / LED signals > 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 1-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
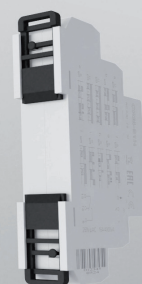
MODERN DESIGN

SOFTER SHAPES

ONE FASTENING COMPONENT

IMPROVED **DURABILITY**

UNITED LOOK WITH 3-MODULE

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 $\cos \varphi$. The power factor of dimmable LED lamps ranges from: $\cos \varphi = 0.95$ 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
($\cos \varphi = 1$).
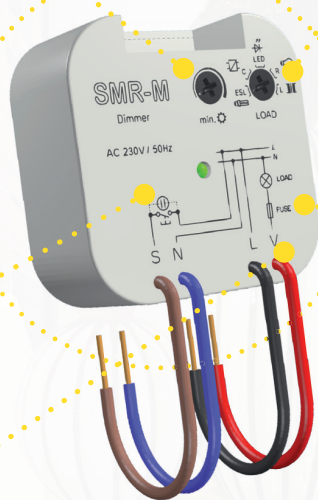
Setting the light source type.

R		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

$t°$ Integrated electronic thermal fuse. In case of reaction no exchange is necessary.

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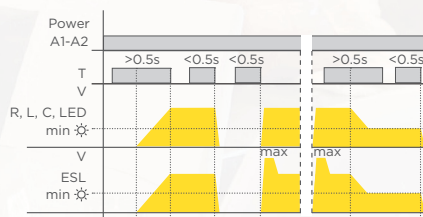
Brightness level will be saved to dimmer memory when powered off and restored when powered on again.

R, L, C, ESL LED
max. 160 VA

20x 0,7 mA

V L N S

SMR-M
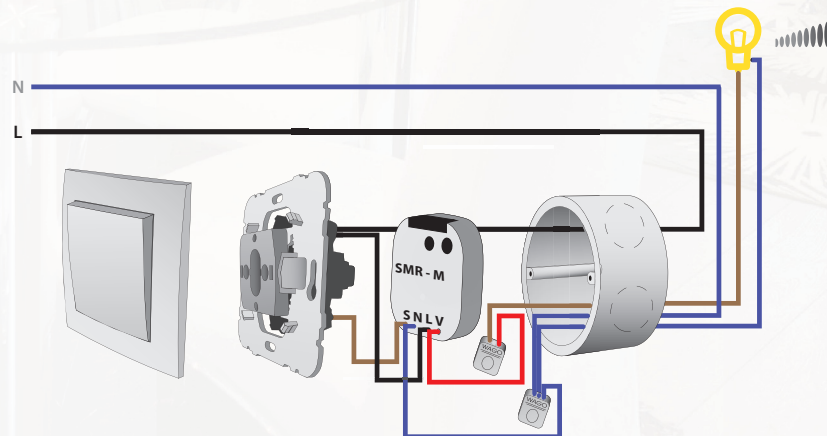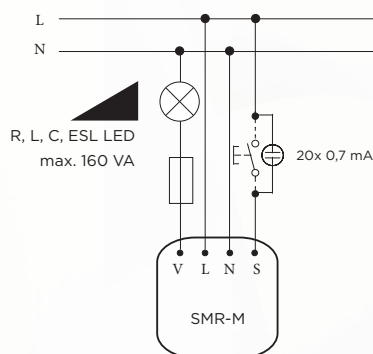
# GLASS TOUCH WIRELESS CONTROLLERS

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)
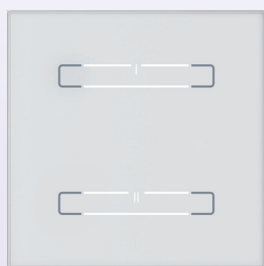
RFGB-20/W
8595188176781
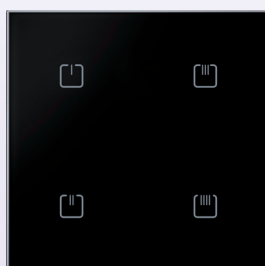
RFGB-40/B
8595188176804

8 mm   8 mm
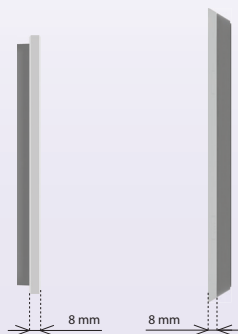
RFGB-220/240 (ROUND)

RFGB-220/B
8595188176842
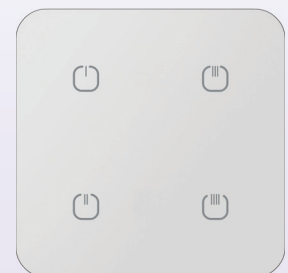
RFGB-240/B
8595188176859
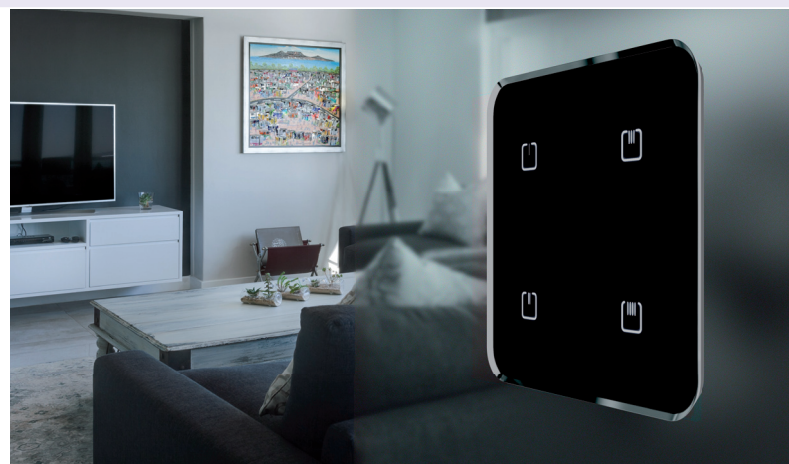
INSTALLATION

1 Two side tape installation,

or

2 Wall (Box) installation.

3 The flat design with straight base makes it ideal for quick installation.

4 2x 3 V battery CR 2032 in changeable slot.
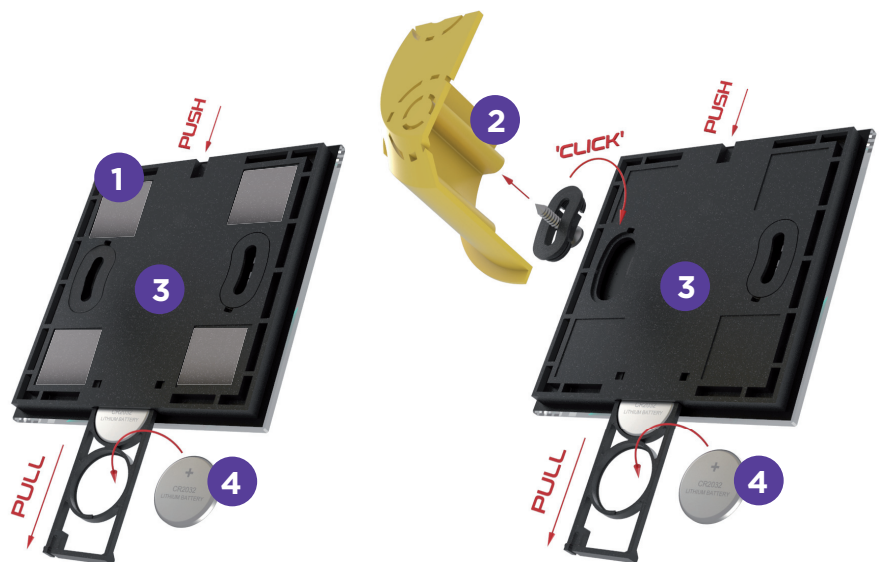
Built-in temperature sensor with 0-55 ° C.

Luxury glass switch design.

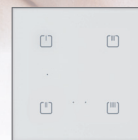Group control function that lets you control more than 10 other elements at the touch of a button.

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

When pressed, the button vibrates and turns blue.

White LED backlight.

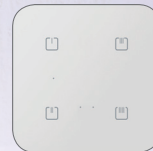Setting minimum brightness to eliminate flickering of LED lamps.

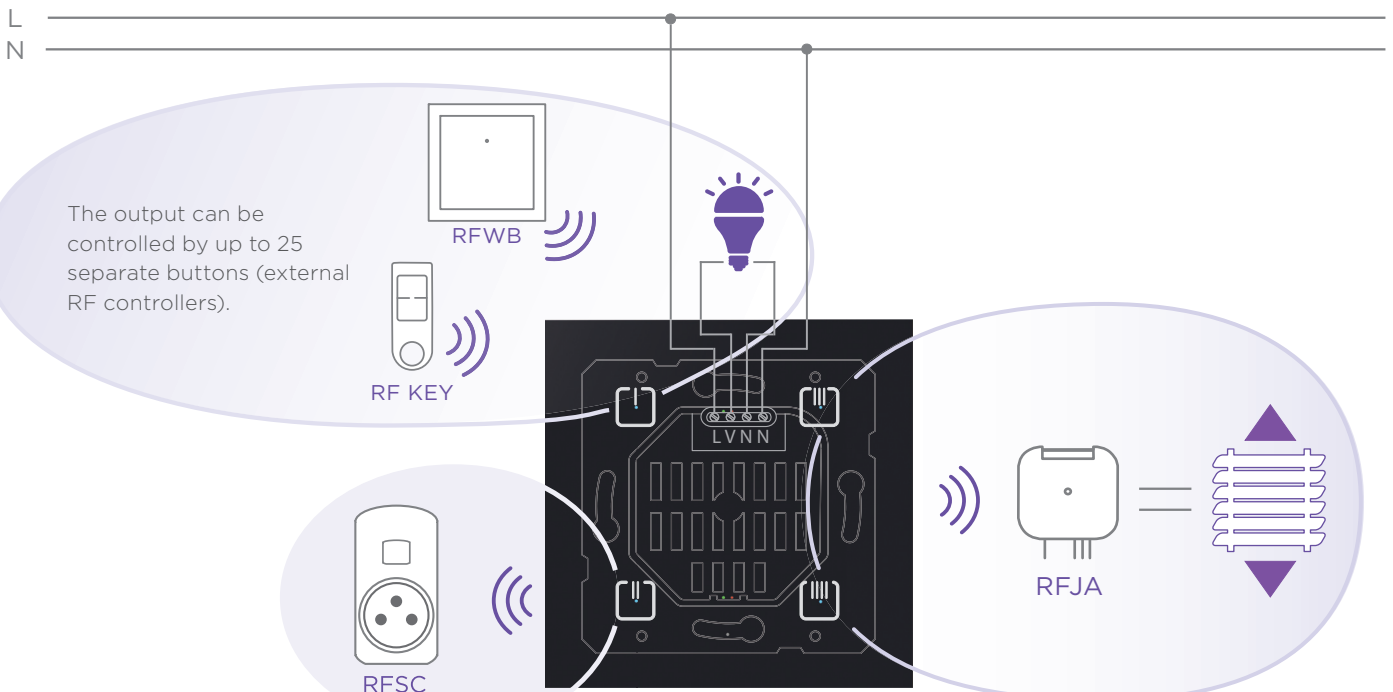Touch control by capacitive button.

RFDW-71/W	RFDW-71/B	RFDW-271/W	RFDW-271/B
8595188159838	8595188176941	8595188176958	8595188176941

Example of usage

L
N

The output can be controlled by up to 25 separate buttons (external RF controllers).

RFWB

RF KEY

RFSC

RFDW-71

LVNN

RFJA

The buttons can control an unlimited number of RF devices.
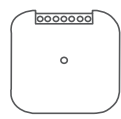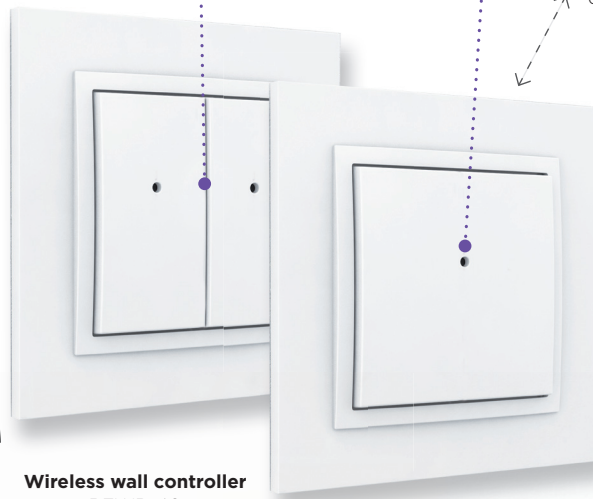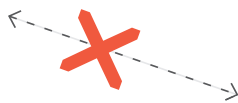
13

RFIO² - UPGRADED WIRELESS PROTOCOL

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

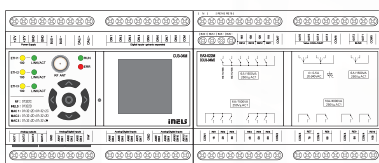It is achieved through programming buttons on the wireless switch.

any RF unit

Battery Discharge Signalling

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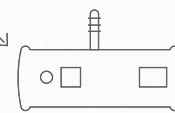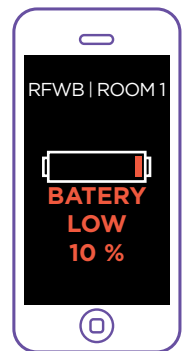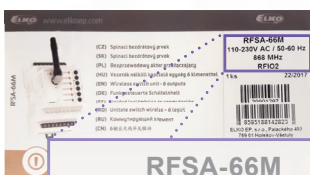
LED 3 × ☀

RFWB | ROOM 1

BATERY LOW 10 %

Smart RF box
eLAN-RF-003

Communication with central unit CU3-04M

CU3-04M
8595188133067

Wireless wall controller
RFWB-40

Wireless wall controller
RFWB-20

RFWB | ROOM 1

GRANDMA NEEDS YOU
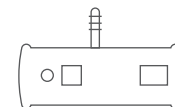
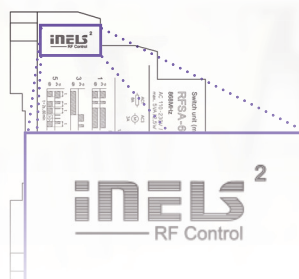**Smart RF box**
eLAN-RF-003
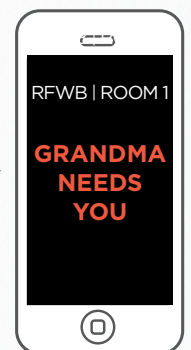
Labelling of iNELS RF elements with RFIO² protocol

RFSA-66M
110-230V AC / 50-60 Hz
868 MHz
RFIO2

iNELS²
RF Control

Panic button

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

14

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 RFIO^2 protocol, which increases the range of communication by hundreds of meters.
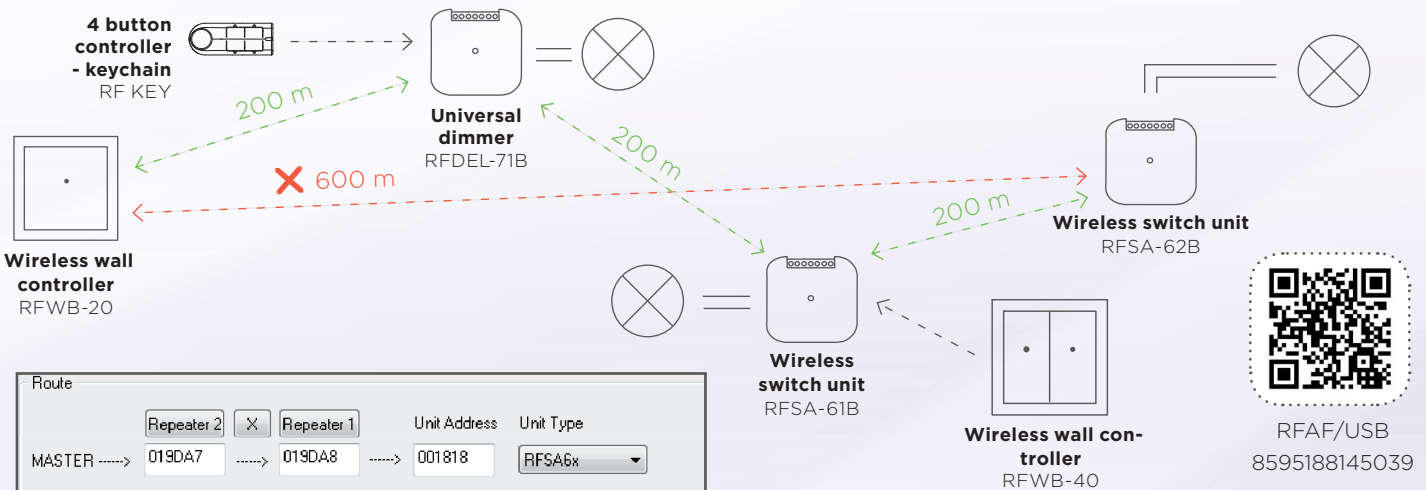
The RF communication network analyser reliably analyses the communication between the controller (where you plan to place it) and the component in the installation. Shows signal strength / quality as well as frequencies that can interfere with communication. This gives you an overview of interference and weak signal points that you can avoid during installation. You can avoid these situations simply by repositioning the component.

USB 2.0
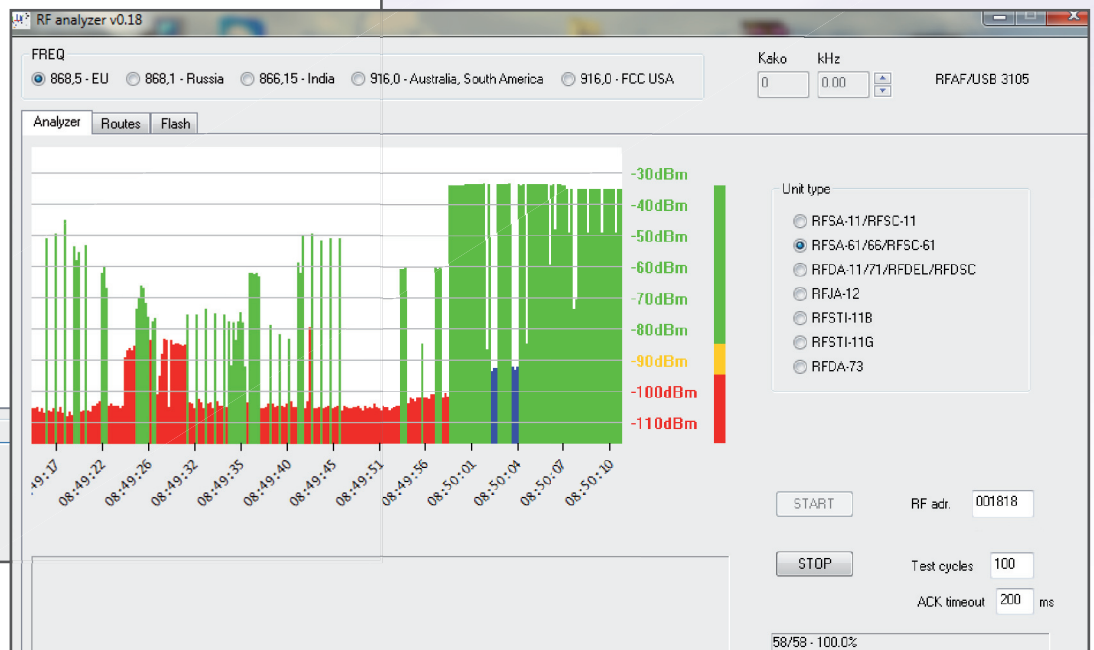
Available frequency for individual territories:

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

4 button controller - keychain
RF KEY

Universal dimmer
RFDEL-71B

200 m

✖ 600 m

Wireless wall controller
RFWB-20

200 m

200 m

Wireless switch unit
RFSA-62B

Wireless switch unit
RFSA-61B

Wireless wall controller
RFWB-40

RFAF/USB
8595188145039

Route

Repeater 2 | X | Repeater 1 | Unit Address | Unit Type

MASTER ------> 019DA7 ......> 019DA8 ------> 001818 | RFSA6x

Route Test

Write Route to Repeater(s)

Delete Route from Repeater(s)

Select Route

Load Route List

Save Route List

13:18:08.733 - 03.08.2018
Routing over 2 repeaters (0xF8)
--> 019DA7 --> 019DA8 --> 001818
1st Repeater - unit RSSI: -53.5 dBm
2nd repeater - 1st repeater RSSI: -55.5 dBm
Master - 2nd repeater RSSI: -41.5 dBm

RF analyzer v0.18

FREQ
⦿ 868,5 - EU ○ 868,1 - Russia ○ 866,15 - India ○ 916,0 - Australia, South America ○ 916,0 - FCC USA

Kako | kHz
0 | 0.00 | RFAF/USB 3105

Analyzer | Routes | Flash

-30dBm
-40dBm
-50dBm
-60dBm
-70dBm
-80dBm
-90dBm
-100dBm
-110dBm

08:49:17 08:49:22 08:49:26 08:49:32 08:49:35 08:49:40 08:49:45 08:49:51 08:49:56 08:50:01 08:50:04 08:50:07 08:50:10

Unit type
○ RFSA-11/RFSC-11
⦿ RFSA-61/66/RFSC-61
○ RFDA-11/71/RFDEL/RFDSC
○ RFJA-12
○ RFSTI-11B
○ RFSTI-11G
○ RFDA-73

START | RF adr. 001818

STOP | Test cycles 100

ACK timeout 200 ms

58/58 - 100.0%

RFPM-2

## 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)
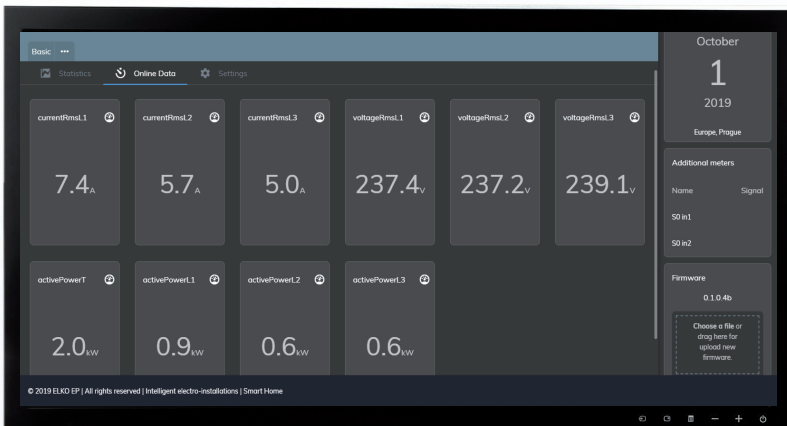
ONLINE DATA

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
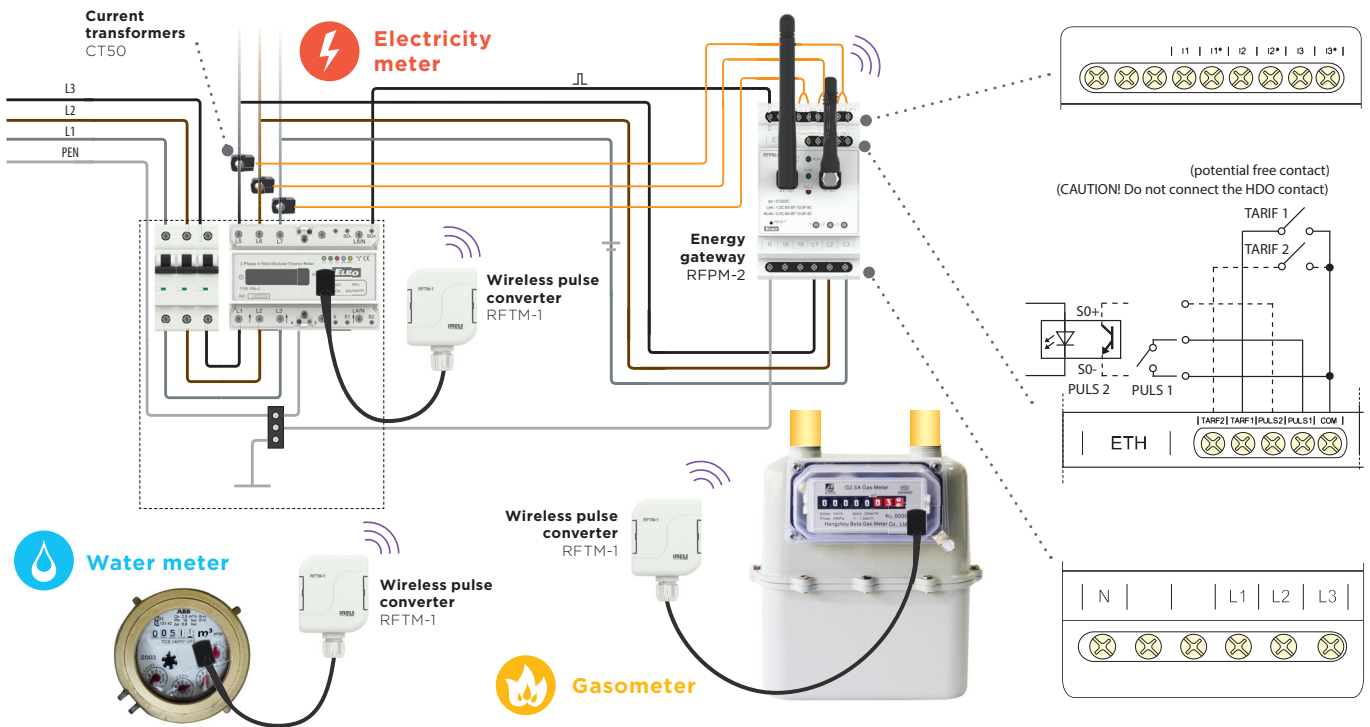- Phase voltage shift between phases
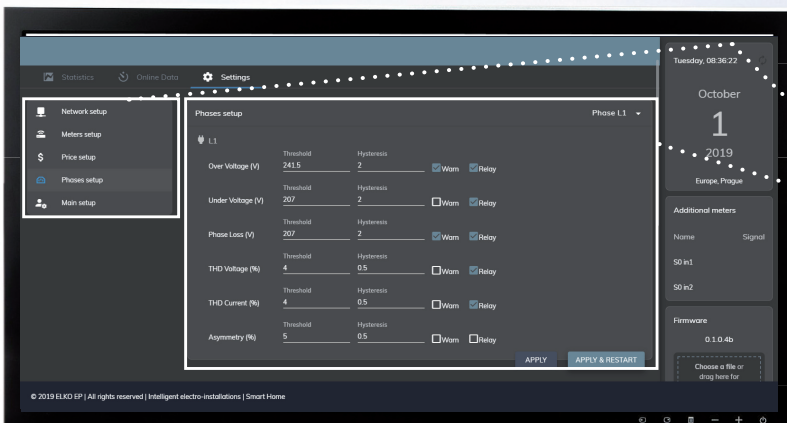
SETTINGS

- 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.

Current transformers CT50

Electricity meter

L3
L2
L1
PEN

Wireless pulse converter RFTM-1

Energy gateway RFPM-2

(potential free contact)
(CAUTION! Do not connect the HDO contact)

TARIF 1
TARIF 2

S0+
S0-
PULS 2   PULS 1

| TARF2 | TARF1 | PULS2 | PULS1 | COM |

ETH

Water meter

Wireless pulse converter RFTM-1

Wireless pulse converter RFTM-1

Gasometer

| N | | | L1 | L2 | L3 |

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.
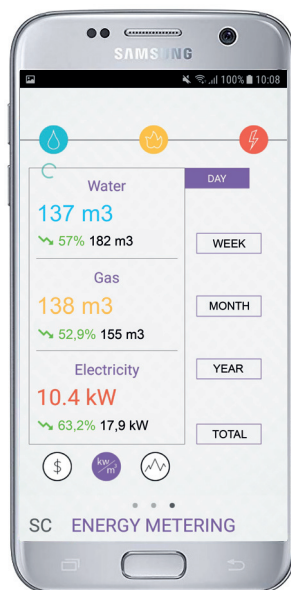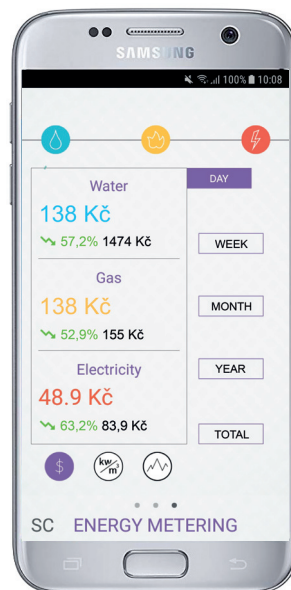
PROMO APP available
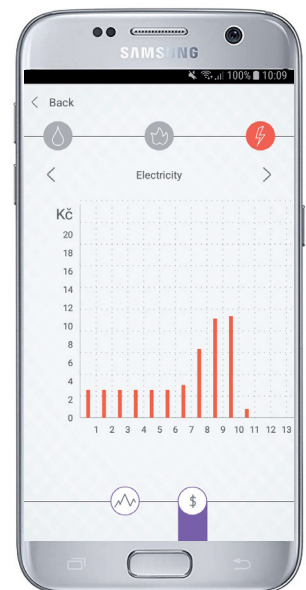

Login and pasword: **admin**
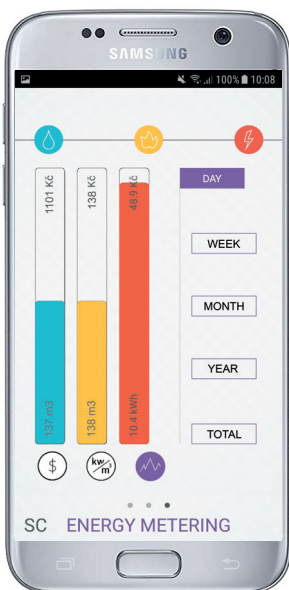
Current consumption can be displayed as a bar graph.

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

SAMSUNG

LIVING ROOM

VIEW SCENES

VIEW CAMERAS

VIEW WEATHER

VIEW ENERGY
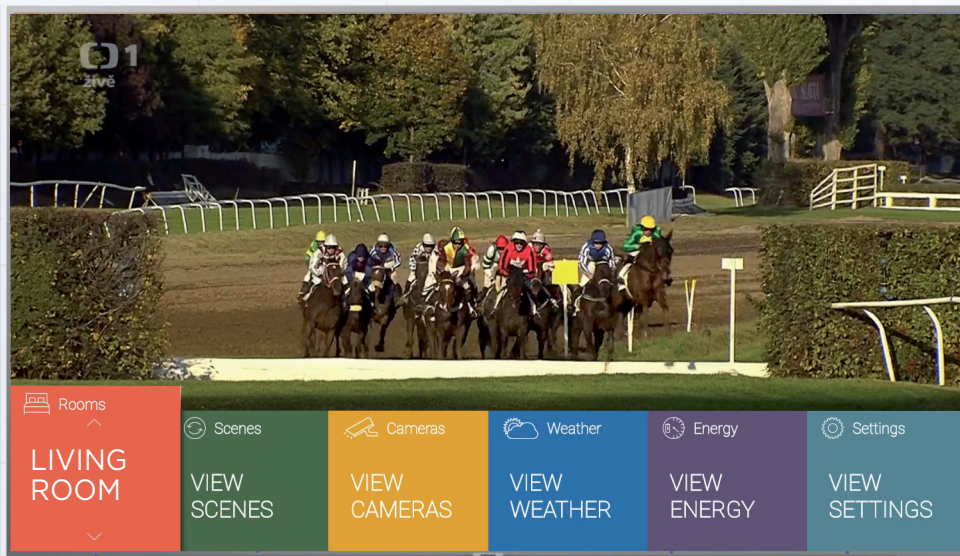
VIEW SETTINGS

room selection

control of scenes and individual devices in the selected room

view cameras

view the weather in a pre-set location

display current electricity, water and gas consumption

device, camera, weather, energy metering settings

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.
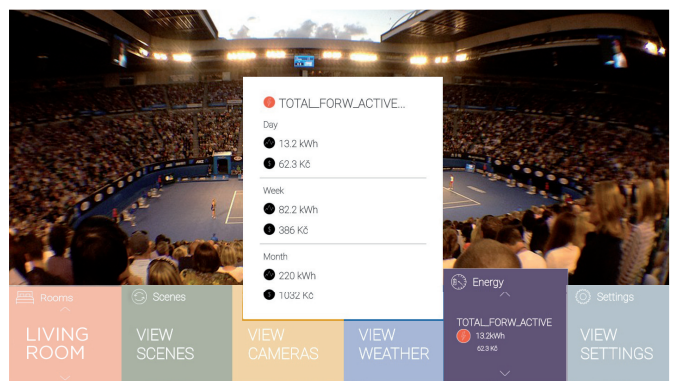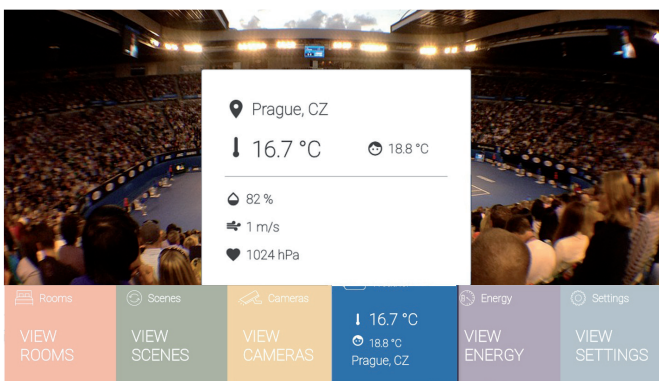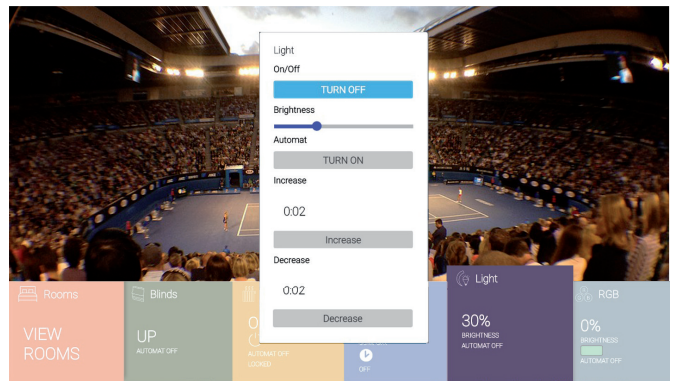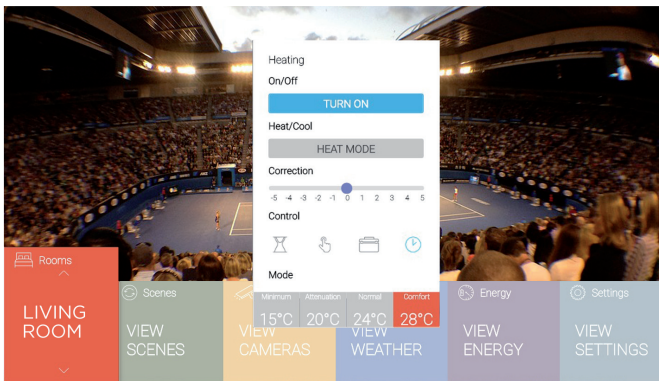
•••

What can you control?

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

Heating
On/Off
TURN ON
Heat/Cool
HEAT MODE
Correction
-5 -4 -3 -2 -1 0 1 2 3 4 5
Control
Mode

Rooms
LIVING ROOM
Scenes
VIEW SCENES
VIEW CAMERAS
Minimum 15°C Attenuation 20°C Normal 24°C Comfort 28°C
VIEW WEATHER
Energy
VIEW ENERGY
Settings
VIEW SETTINGS

Light
On/Off
TURN OFF
Brightness
Automat
TURN ON
Increase
0:02
Increase
Decrease
0:02
Decrease

Rooms
VIEW ROOMS
Blinds
UP
AUTOMAT OFF
AUTOMAT OFF LOCKED
OFF
Light
30% BRIGHTNESS AUTOMAT OFF
RGB
0% BRIGHTNESS AUTOMAT OFF

📍 Prague, CZ
🌡 16.7 °C   ☀ 18.8 °C
💧 82 %
🌬 1 m/s
❤ 1024 hPa

Rooms
VIEW ROOMS
Scenes
VIEW SCENES
Cameras
VIEW CAMERAS
🌡 16.7 °C
☀ 18.8 °C
Prague, CZ
Energy
VIEW ENERGY
Settings
VIEW SETTINGS

🔴 TOTAL_FORW_ACTIVE...
Day
● 13.2 kWh
● 62.3 Kč
Week
● 82.2 kWh
● 386 Kč
Month
● 220 kWh
● 1032 Kč

LIVING ROOM
Scenes
VIEW SCENES
Cameras
VIEW CAMERAS
VIEW WEATHER
Energy
TOTAL_FORW_ACTIVE
13.2kWh
62.3 Kč
Settings
VIEW SETTINGS

OUR NB-IoT SENSORS IN NETWORKS OF OTHER OPERATORS

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.

Saudi Arabia

Russia

United Arabian Emirates

Czech republic, United Kingdom, Malta

France

Slovakia, Netherlands

NB-IoT
asociated operators

iNELS Air
powered by ELKO ep

Latvia

Sweden, Norway, Denmark, Finland

SENSORS FOR PRECISION AGRICULTURE

The very rational use of iNELS Air sensors and detectors has been demonstrated in cooperation with Clever Farm.
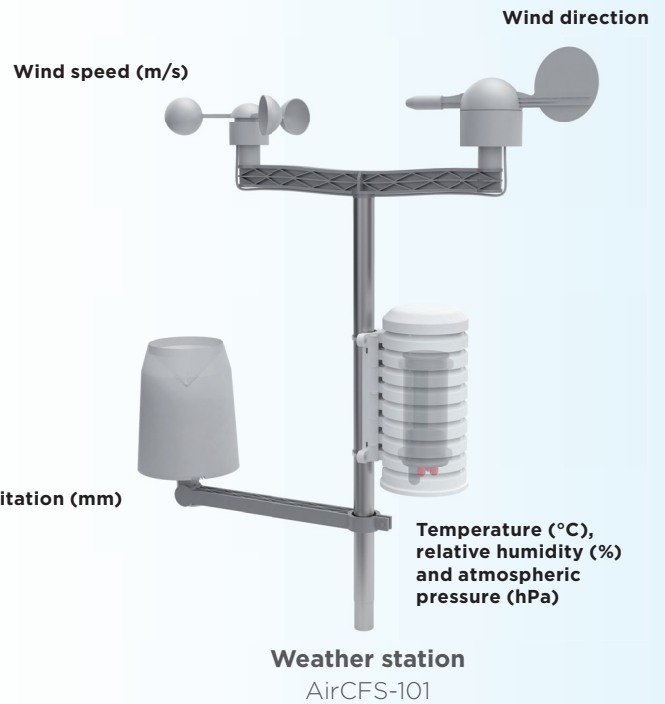
Clever Farm is a relatively new company that develops and deploys smart solutions for farmers in various fields.

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 costumized devices based on iNELS Air sensors.

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

Works on:

LoRa™   sigfox   NB-IoT

CLEVER° FARM'

Official site
cleverfarm.org

Wind speed (m/s)

Wind direction

Precipitation (mm)

Temperature (°C), relative humidity (%) and atmospheric pressure (hPa)

Weather station
AirCFS-101

Soil moisture
AirSS-100

ca 1,1 m

Humidity, temperature and atmospheric presure
AirCFS-100

Monitoring conditions in silo tank
AirSS-100

ca 4 m
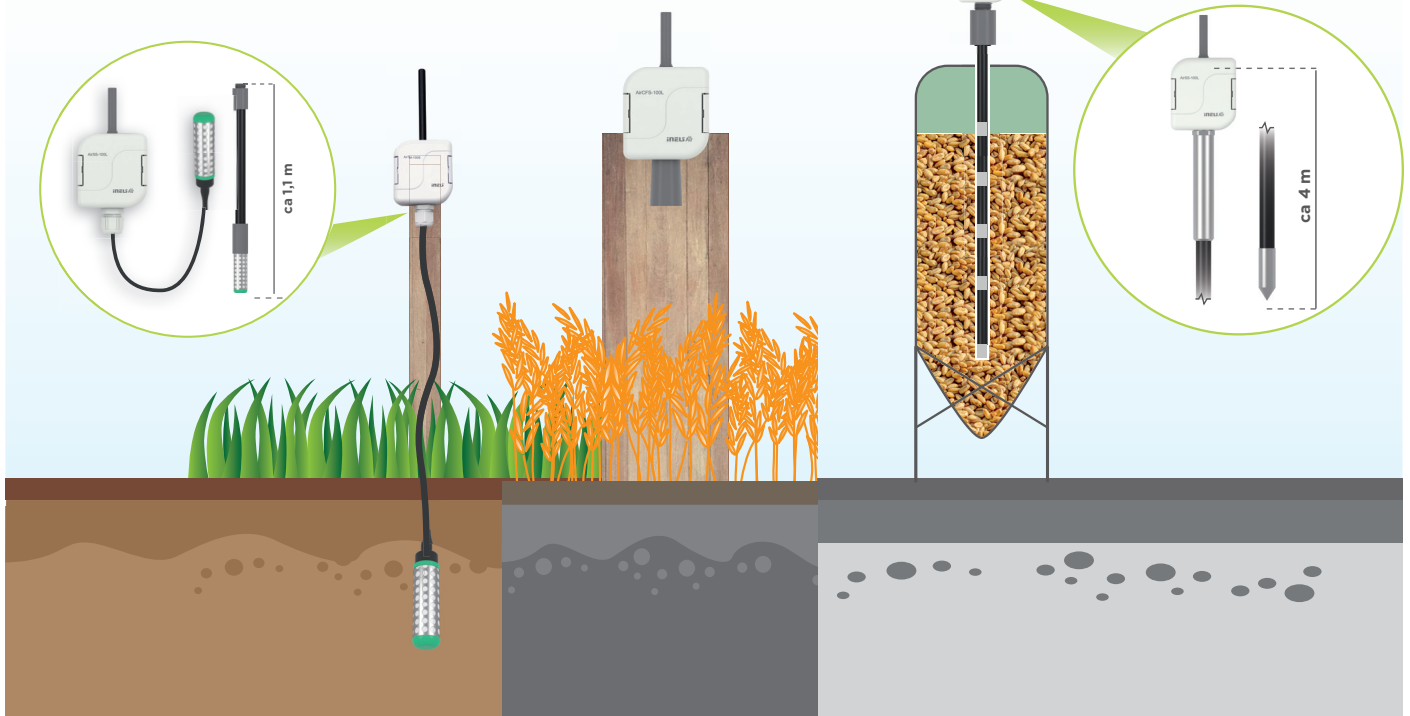
Smartphone app view (iHC-MA/MI)

Tablet app view (iHC-TA/TI)
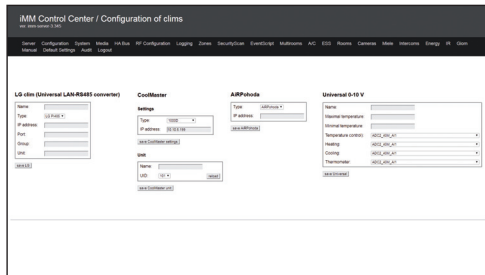
iMM Control Center setup screen

iMM Control Center setup screen

iNELS BUS System
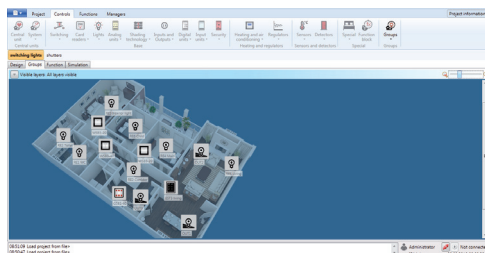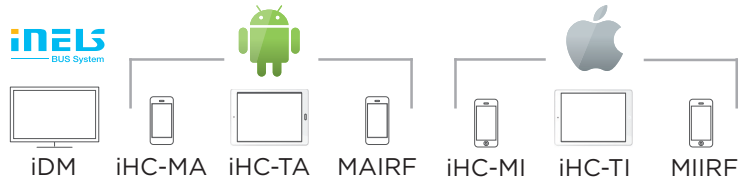
iDM	iHC-MA	iHC-TA	MAIRF	iHC-MI	iHC-TI	MIIRF
✗	✓	✓	✗	✗	✗	✗
✓	✓	✓	✗	✗	✗	✗
✓	✓	✓	✗	✗	✗	✗
✓	✓	✓	✗	✓	✓	✗
✗	✓	✓	✗	✗	✗	✗
✓	✓	✓	✗	✗	✗	✗
✓	✓	✓	✗	✗	✗	✗
✓	✓	✓	✗	✗	✗	✗
✓	✓	✓	✓	✓	✓	✓
✓	✓	✓	✗	✓	✓	✗

EHT3 screen

CU3-01M

EST3

IDRT3-1

WSB3-40

GRT3-50

GSB3-60

BUS

Connection server

eLAN-RS 485/232

Daikin RTD-NET	
LGPI-485	
Mitsubishi MELCOBEMS	

VFACE

Coolmaster Net	
VRM, VRR, KNX, RSM port	
VRM, VRR port	

Intesis Box-WMP1 series

Daikin DK-AC-WMP-1	
LG LG-RC-WMP-1	
Samsung SM-ACN-MBS-4	
Midea MD-AC-MBS-1	

infrared control

eLAN-IR-003

IM3-20B

0-10 ci
0-10 ci
0-10 ci
0-10 ci

control via Digital/analog converter DAC3-04M

A/C brands

DAIKIN AIR CONDITIONERS

LG

MITSUBISHI

SAMSUNG

Midea air conditioner

FUJITSU AIR CONDITIONING

AUX AIR CONDITIONER   BLUE STAR   CHIGO AIR-CONDITIONING

GREE   INTENSITY Refresh your life   KENTATSU

SANYO AIR CONDITIONERS   YORK Heating & Air Conditioning   TRANE

Cool Automation

Haier Air Conditioning   HITACHI AIR CONDITIONERS   Panasonic AIR CONDITIONING

TOSHIBA AIR CONDITIONING

IntesisBox

arçelik   hisense

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.
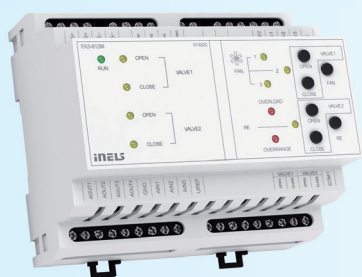
Fan Coil Control Actuator   FA3-612M

Switching Actuator   SA3-022M

Search filter

Function block detail
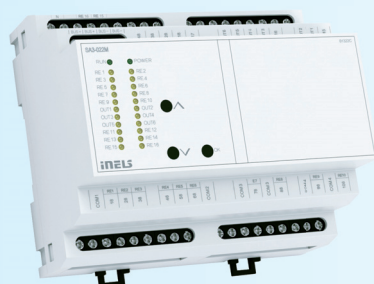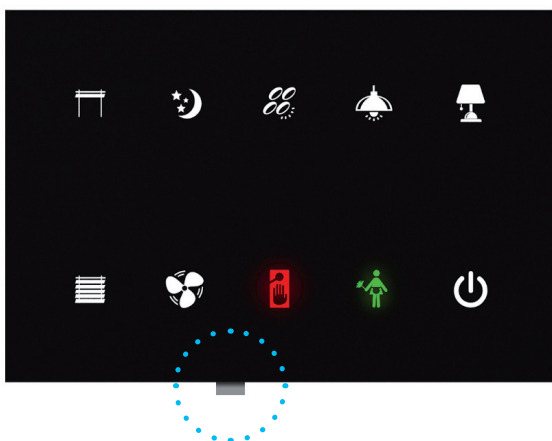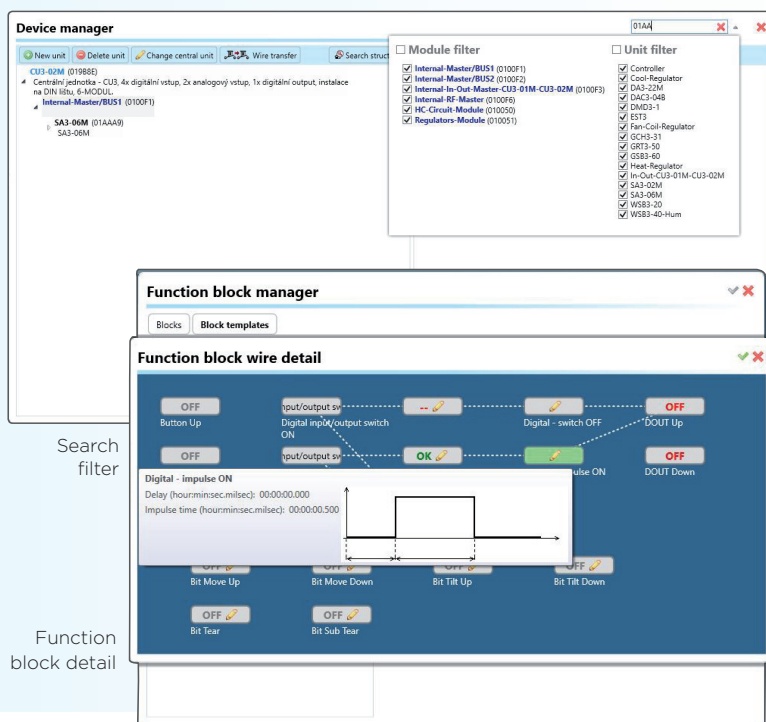
Proximity sensor

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).

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".

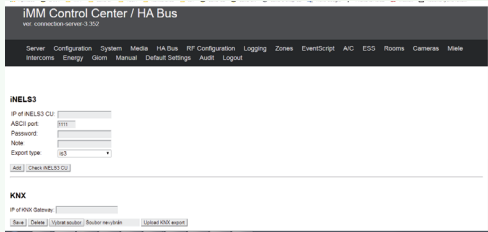- „Test connection" function added in Program settings / Connection settings menu.

- „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.
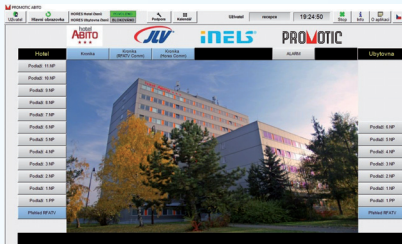
iNELS IN SUPERIOR SOFTWARE

Bridge

Connection server
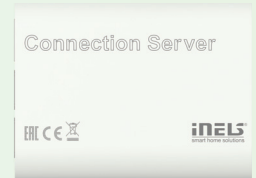
iMM Control Center / HA Bus
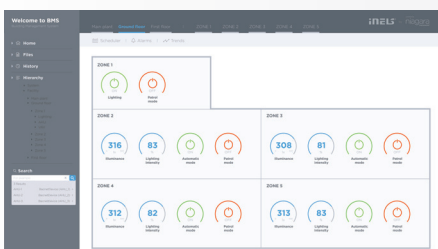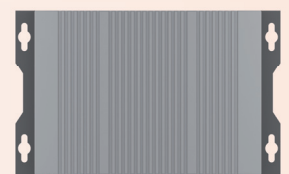
iNELS RF Control   **Miele**   **Onvif**®

KNX   **SIP**   **TCP/IP**

Connection Server

Connection Server

SCADA

PROMOTIC

M-Bus   **DALI**   **BACnet**™

Modbus   **MQTT**ORG   **LonWorks**

S-BUS / S-BUS+   FINS

Server

BMS – Building management system

powered by
niagara framework®

Modbus   **LonWorks**   **KNX**

M-Bus   **BACnet**™   **Z-WAVE**

MQTTORG   **REST API**

JACE 8000

FLOWBOX

BACnet™   **DALI**   **LonWorks**

Modbus   **MQTT**ORG   **sigfox**

Flowbox Server

26

Wired (BUS)
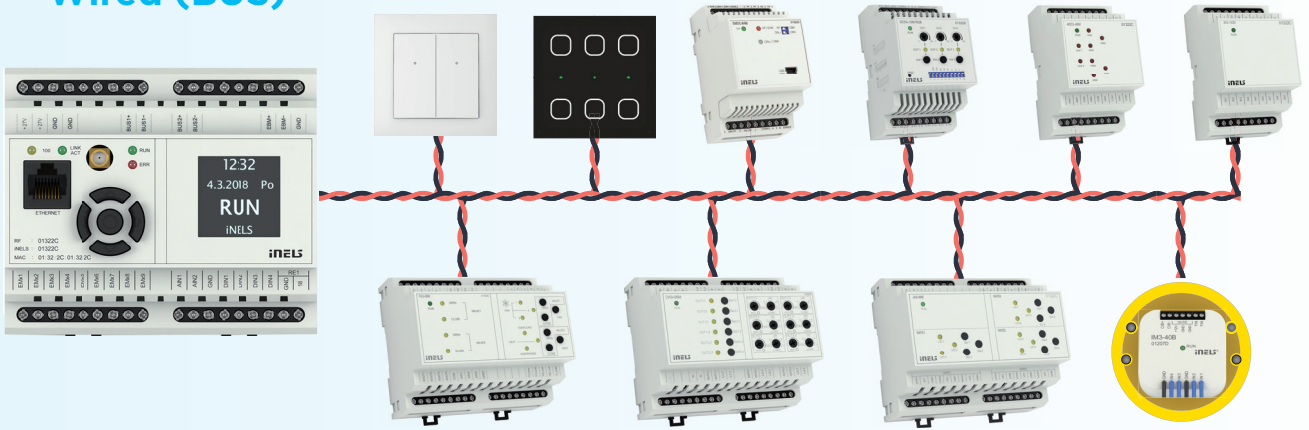
Wireless (RF)

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
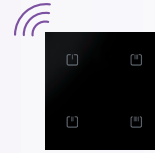
Glass touch controller - 4 buttons, BLACK SHARP

Switch unit for shutters

iNELS Air (IoT)

LoRa

sigfox

NB-IoT

Smoke detector

Outdoor street light controller

Soil moisture

Energy monitoring Water

Motion detector

Waste container fill level sensor

Humidity, temperature and atmospheric presure

Energy monitoring Gas

PROMOTIC

PROMOTIC ··························

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-
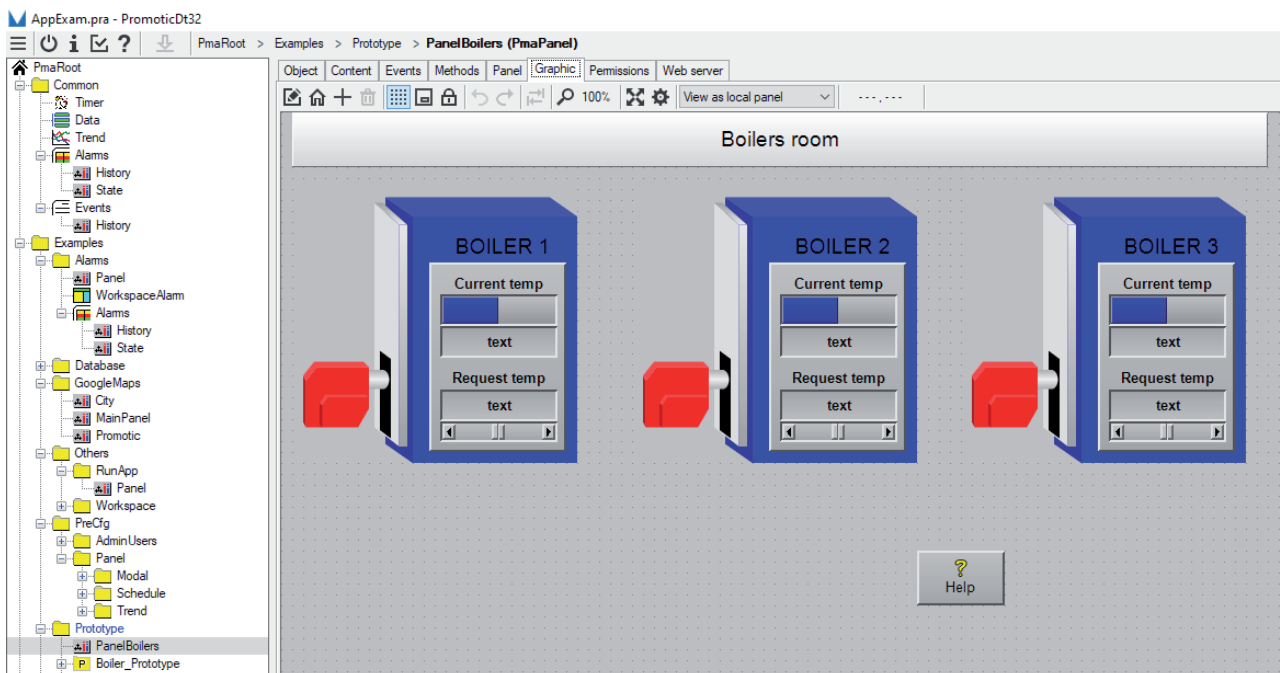
The user interface.

motic 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_IoT-en.

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

Programming 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.**
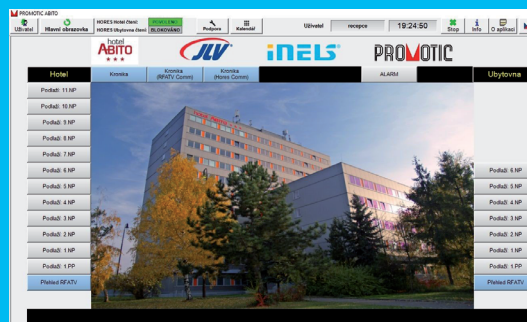
Find out more about the solution:

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/WhatIsPromotic/WhatIsPromotic.htm
Price list: https://www.promotic.eu/en/pmdoc/PriceList/PriceList.htm
Terms and Conditions: https://www.promotic.eu/en/pmdoc/PriceList/PriceListConditions.htm

NIAGARA FRAMEWORK

powered by

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.

iNELS BUS System

iNELS RF Control

Central unit
CU3-03M

Smart RF box
eLAN-RF-003

Nav | Energy Dashboard

- Home
- Histories
- National Site Plan
  - Alarm Console
  - Eastern US
    - Florida
    - Massachusetts
      - Boston
        - Mass Mutual
          - Admin Building
            - Energy
            - Floor 1
            - HVAC Systems
            - Schedules
            - Site Worksheet
            - Weather
    - Virginia

niagara4
Version 4.6

Admin Building - Energy Dashboard

TRIDIUM

Information

Total Area	422000.00

KPIs

KW Spikes Yesterday	5
KW Spikes Last Week	17
KW Spikes this Month	28
KW-Hr +5% of Last Year	true
Spike Energy Level:	20%

Today

Current Demand	63
Min Demand	11
Max Demand	65
Avg Demand	35

Last 30 Days

Min Demand	9
Max Demand	70
Avg Demand	29
Consumption	90169

System

System Control	Off
Lead Load	Load 2
Supply Setpoint	42.0 °F
Loop Diff Pressure	0.0 Δpsi
Diff Pressure Stpt	7.5 Δpsi

Pump 1 — Chiller 1 OFF — Supply Temp 43.0 °F — Loop Pump 1 — Enable OFF — VFD 0 %

Pump 2 — Chiller 2 OFF — Supply Temp 51.0 °F

Supply Temp 50.9 °F — To Building

Loop Pump 2 — Enable OFF — VFD 0 %

Return Temp 50.8 °F — From Building

Find out more about the solution:
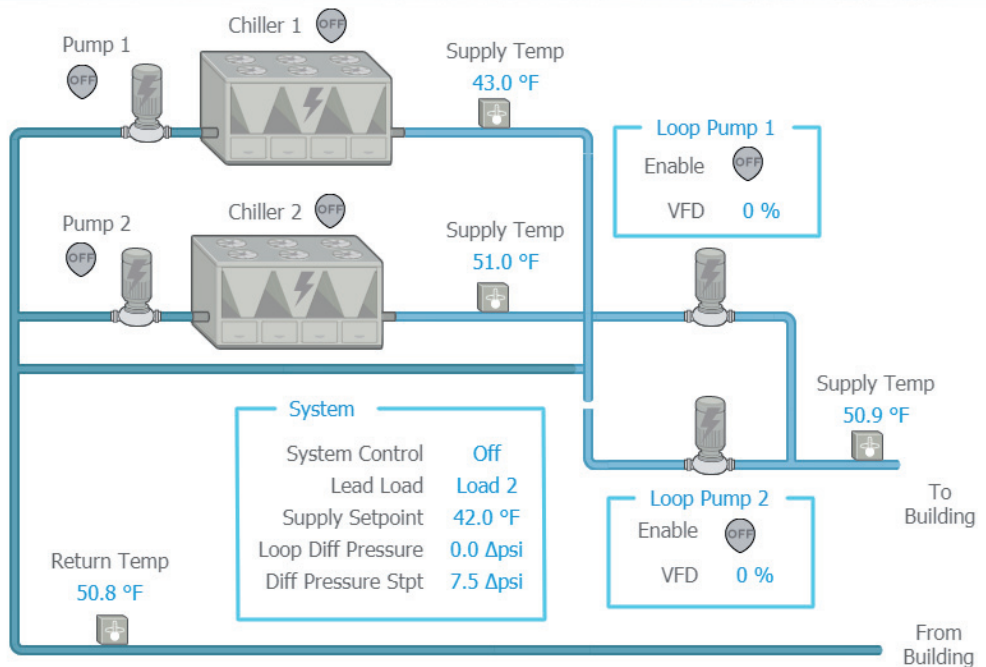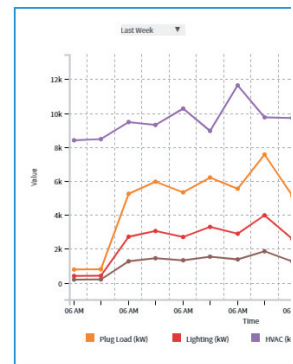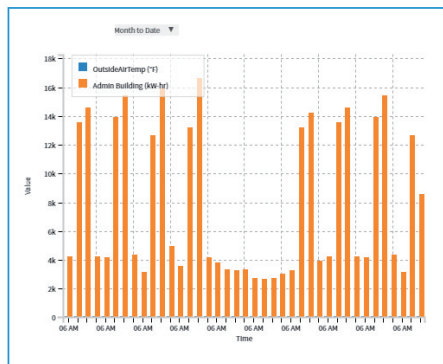
Niagara ELKO EP

Niagara Official site

Niagara Products and solutions

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

FLOWBOX

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 sub-MASTER => 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.
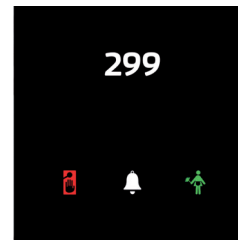
iNELS and Flowbox

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

FLOWBOX

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.
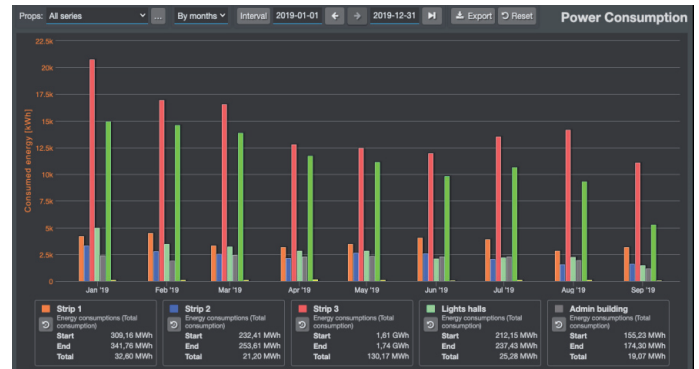

ENVIRONMENT AND WEATHER MONITORING

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

INTUITIVE MULTITENANT USER INTERFACE

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

Find out more about the solution
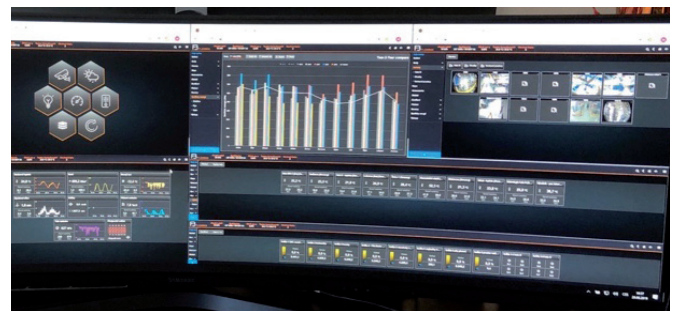
Flowbox
Official site

Flowbox
Compare of products

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.

Wall switch button
WSB3-40

Universal dimming actuator
DA3-22M

iNELS WSB3-40 "WSB3-40"

< Components overview   ☑ Save

Settings | Signals | Run | History | Internal | Notes | Monitoring | Dependencies (1/0)

Realm: Dashboard (dashboard)
Name: WSB3-40
Alias: wsb3_40
iNELS Gateway Comp. reference: By name . Components (2) ☐ Dashboard / CU3

☐ Changes
Done
Advanced...

LED1?: 0x01020005
Description Up1: Up 1
Up1: 0x01010001
Up1 behavior: Switch ON / OFF (toggle)
Command ON?: set(sa3_04m_re1, 1);
Command OFF?: set(sa3_04m_re1, 0);
Description Down1: Down 1
Down1: 0x01010006

iNELS DA3-22M "DA3-22M"

< Components overview   ☑ Save

Settings | Signals | Run | History | Internal | Notes | Monitoring | Dependencies (1/0)

Realm: Dashboard (dashboard)
Name: DA3-22M
Alias: da3_22m
iNELS Gateway Comp. reference: By name . Components (2) ☐ Dashboard / CU3

☐ Changes
Done
Advanced...

Description OUT1: OUT 1
OUT1: 0x01040001
Min brightness OUT1: 0 %
Max brightness OUT1: 100 %
Fade time OUT1: 0 s
Label button 1 OUT1: 100%
Command button1 OUT1: this->set(1,100)
Label button 2 OUT1: ON
Command button2 OUT1: this->on(1)

SOFTWARE - OVERVIEW

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 CU3-0xM	✘	✔	✔	✔
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.
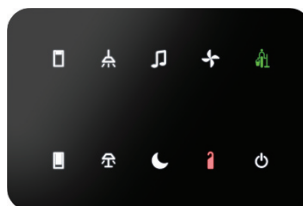

GSB3-220/S
Glass switch button with symbols

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
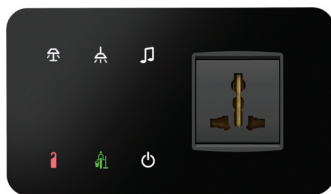
GSP3-260/xR/1F
Glass bedside panel, right
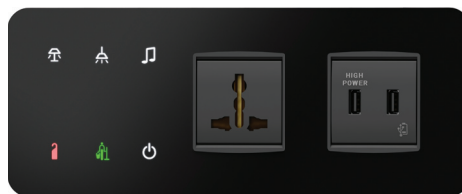
GSP3-260/xR/2F
Glass bedside panel, right

GCH3-231
Glass card holder

Installation
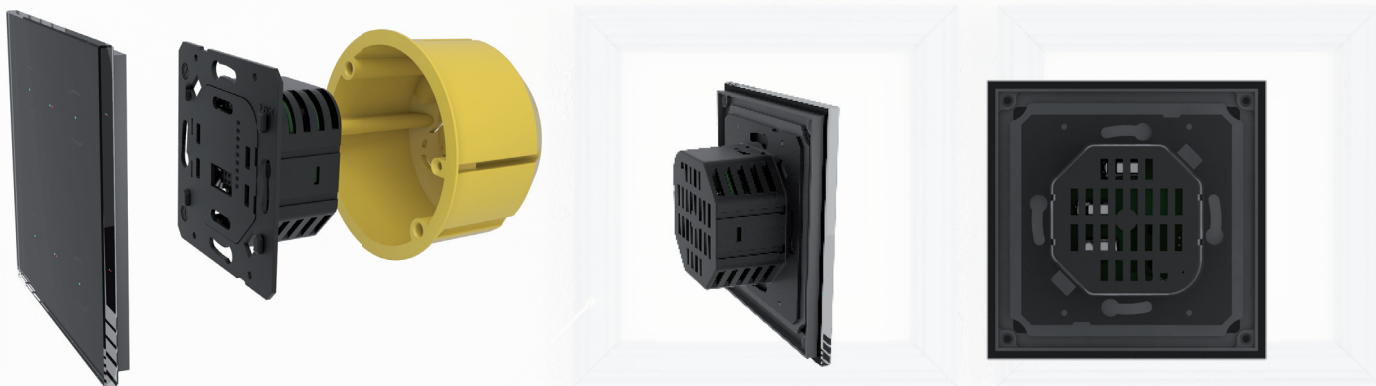
✓ The controls are equipped with an ambient light intensity sensor.

✓ 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).
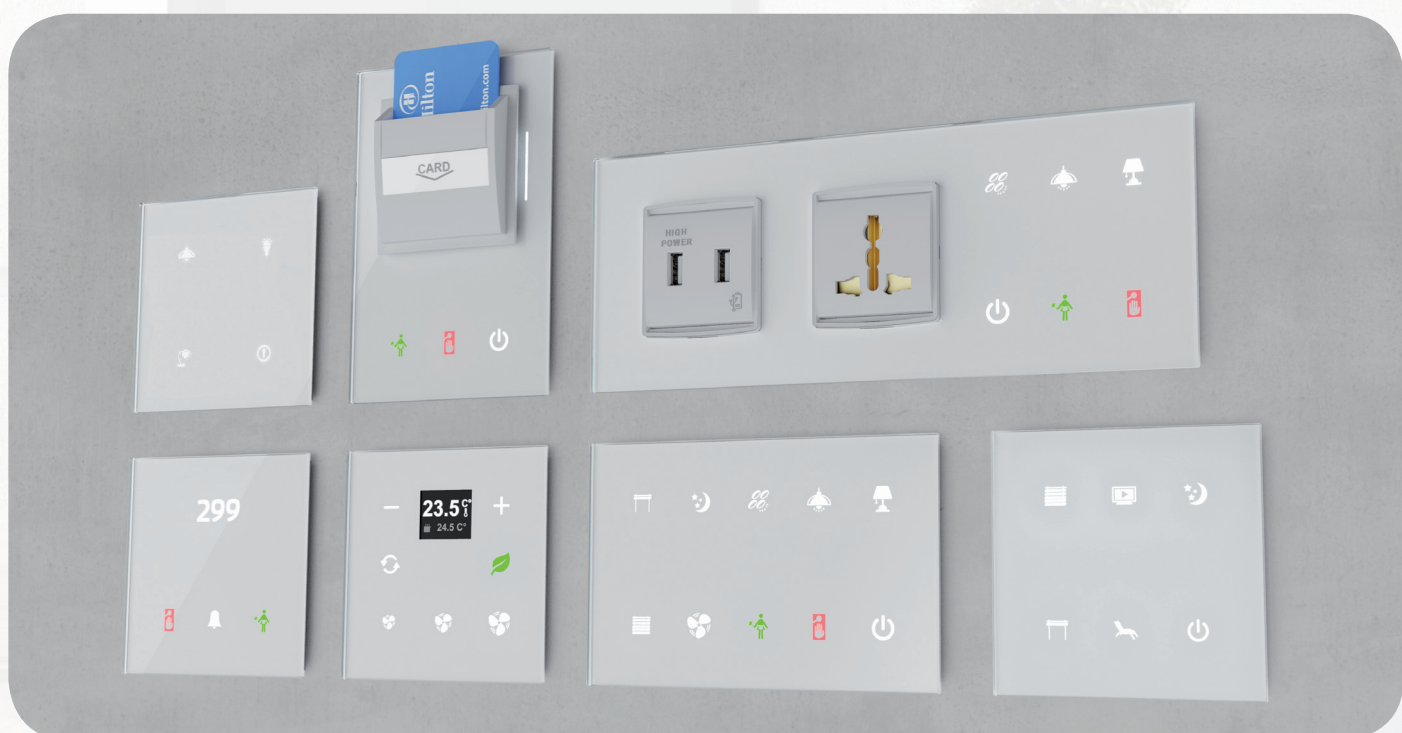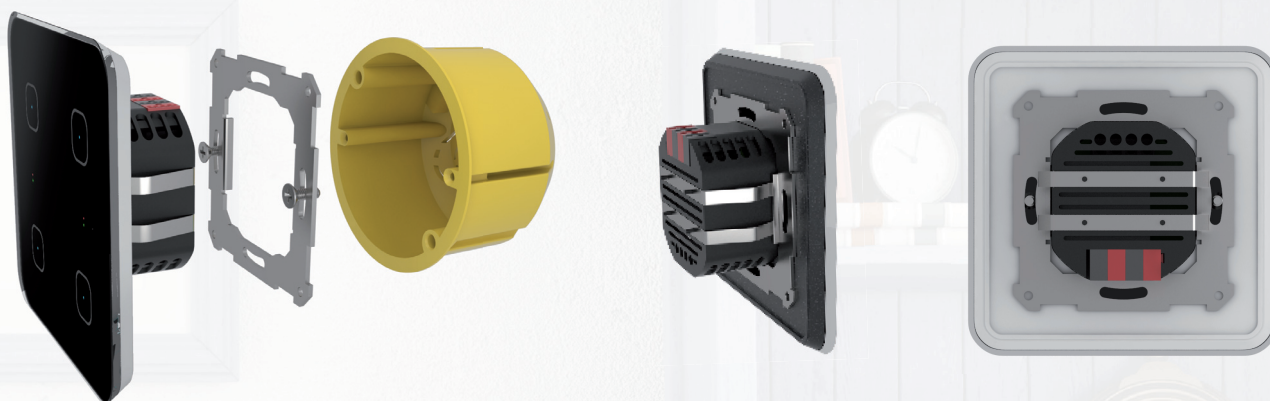
✓ The buttons have increased sensitivity for faster system response and response.

✓ 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

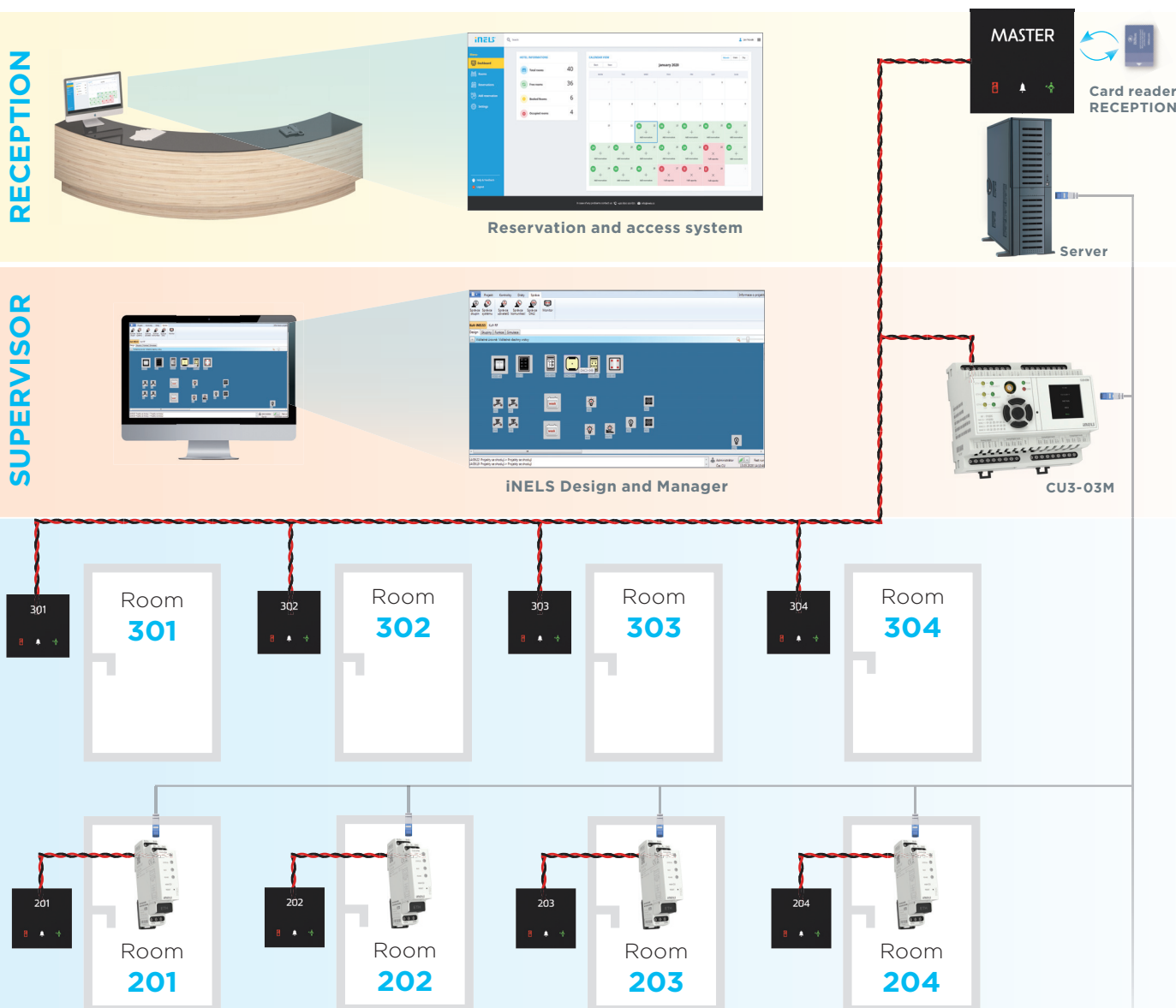For iNELS users in accommodation services, we have prepared the iNELS Hotel reservation and reception system, which is designed to manage small accommodation facilities such as smaller hotels, guest houses, apartments, hostels, cottages and cottages.

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.

RECEPTION

Reservation and access system

Card reader RECEPTION

MASTER

Server

SUPERVISOR

iNELS Design and Manager

CU3-03M

Room 301	Room 302	Room 303	Room 304

Room 201	Room 202	Room 203	Room 204

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.

New

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.

JACE 8000

Modbus | LonWorks
KNX | M-Bus | BACnet
Zwave | MQTT | REST API

... up to 254 CU3 UNITS (= 64 516 rooms)

Central unit CU3

... up to 254 ROOMS

Room **101**

Room **102**

Room **103**

Room **104**

Room **105**

Room **106**

LAN

BUS

MODBUS

miniCU
Central unit

PS3-30/iNELS
Power supply

GCR3-211
Glass card reader

GBP3-xR/2F
Bedside panel right

GCR3-211
Glass room thermo-regulator

GSB3-280
Glass switch button

GSB3-2100
Glass switch panel

GBP3-xL/2F
Bedside panel left

GCH3-231
Glass card holder

Room thermostat
MODBUS

Fancoil

SA3-012M
Switching actuator 12-channel

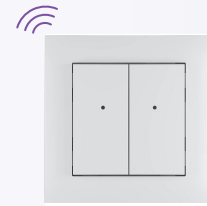FA3-612M
Fan-coil Control Actuator

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

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.

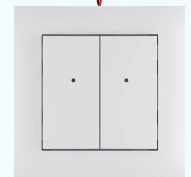**Wireless touch unit**

Smart RF box

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

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

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

powered by
niagara framework®
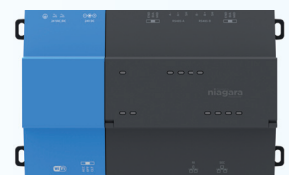
JACE 8000 Central unit

Až 24x CU3 integrated CU units

Modbus LonWorks KNX MQTT
M-Bus BACnet Z-WAVE Rest Api

Remote RF controller with display - WHITE

Dimming socket-plug - MULTI function

Window / door detector
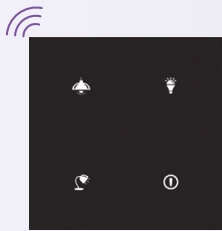
Flood detector

Motion detector

Smoke detector

Twilight switch

Coloured wireless bulb

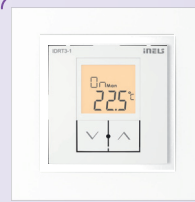**Glass touch controller - 4 buttons BLACK SHARP**

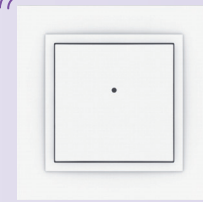**Switch unit 6 channels - MULTI function**
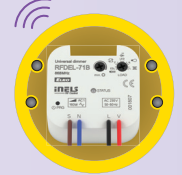
Universal dimmer - MULTI function
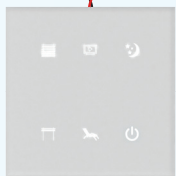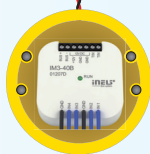
Wireless thermovalve

Temperature controller

On-wall button controller - 2 buttons

Switch unit for shutters

Glass switch button

Binnary input unit

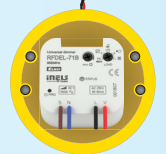**Switching actor 2-channel**

Elko smart touch screen
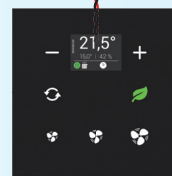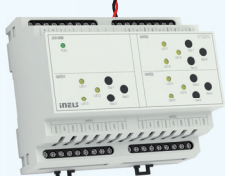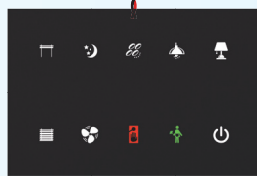
Room thermo-regulator

Switching actuator

Switching actuator

UP TO 64 ADDRESS

Shutter actuator

Glass touch panel
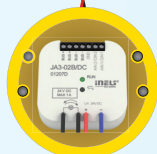
Switching actor

Switching actor

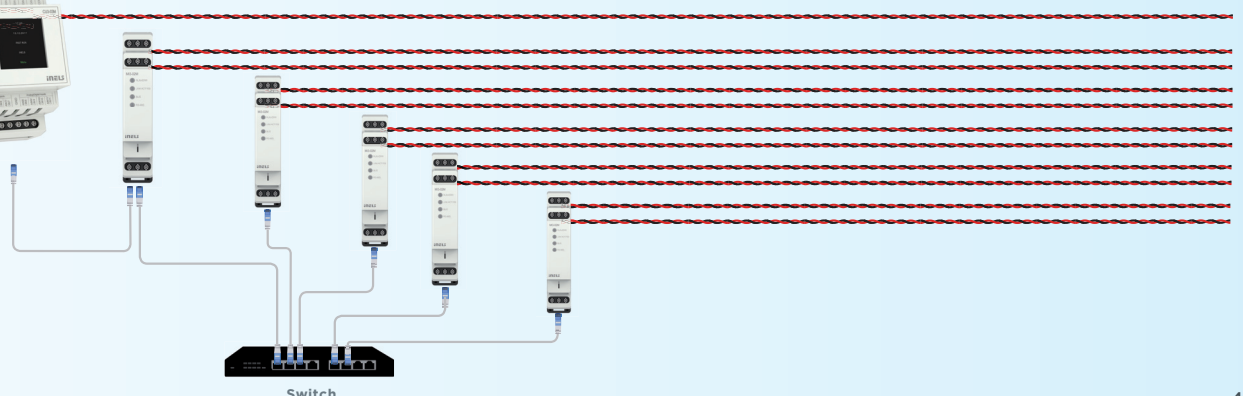**Digital-analog converter**

Digital room

Dimming actuator for LED sources

CU3-03M
Central unit

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

Switch

45

YOU CAN ALSO CONTROL iNELS BY VOICE

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

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

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.

iNELS
RF Control

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.
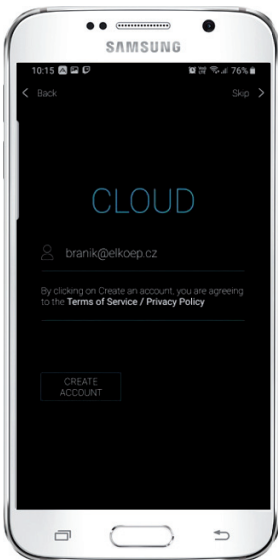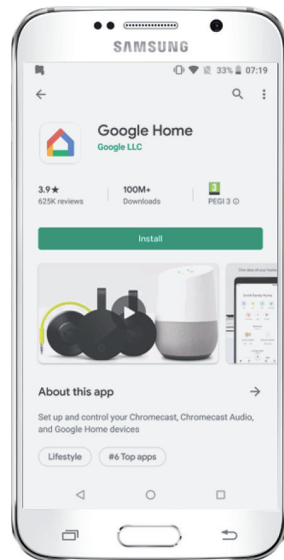
GOOGLE HOME

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!**
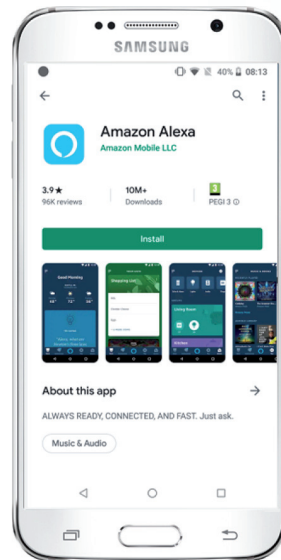
AMAZON ALEXA

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.

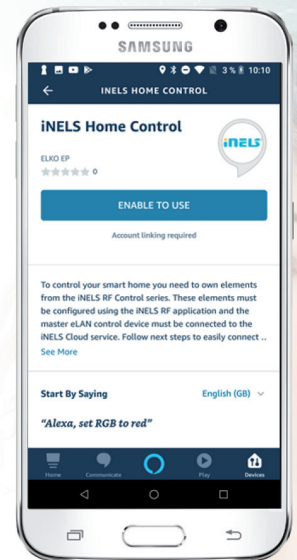- Begin all commands by calling out **Hey Alexa!**

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.

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).

PABLIKO VOTING SYSTEM

iNELS IN MUNICIPALITIES

HD MEDIA s.r.o.

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

Pabliko'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.
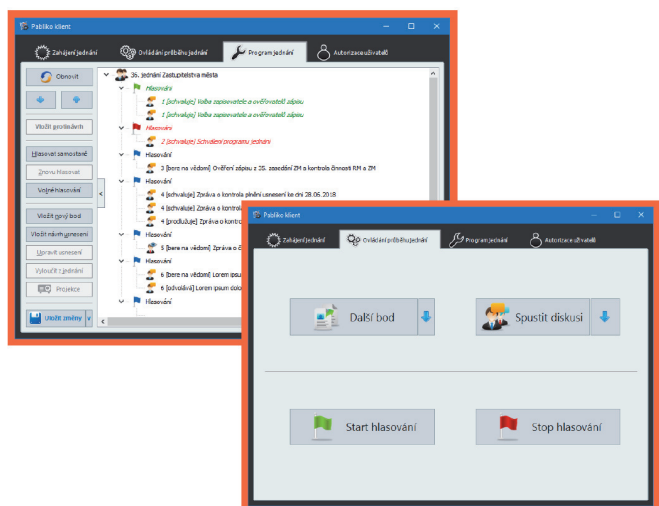
Benefits of the Pabliko voting system

✓ 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.

konsiliar.hdmedia.cz

REFERENCES
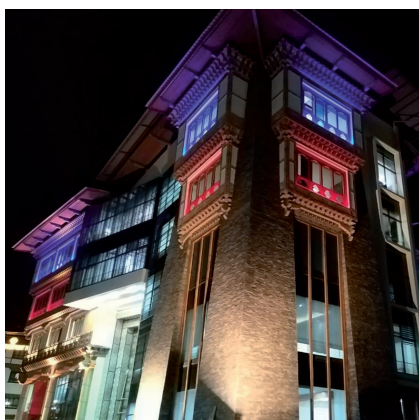
Bhutan National bank
Timphu, Bhutan

- 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

Inter Power Ltd.
Sofia, Bulgary

- 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%

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
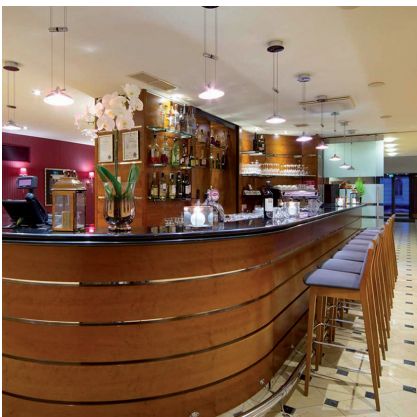
Radisson Ridzen Hotel
Riga, Latvia

- 7 lighting zones integrated in iNELS RF system
- sockets near beds for comfortable staying
- switches with laser-printed icons
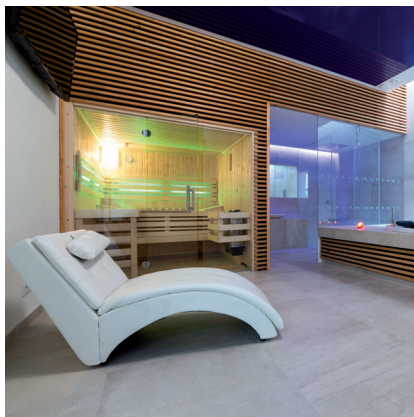
Arigone Hotel
Olomouc, Czech republic

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

ELKO EP Holding

Russia

Ukraine

Poland

Baltic

Czech Republic

Germany

Hungary

Spain

Slovakia

Bulgaria

Saudi Arabia

UAE

Vietnam

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