Highlights
Autumn 2019

News from iNELS & ELKO EP World

ELKO ep ®

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NEWS

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Content

a selection of topics you shouldn't miss

Improved and new relays

... see pages **6-11**

Control iNELS via TV

... see page **18-19**
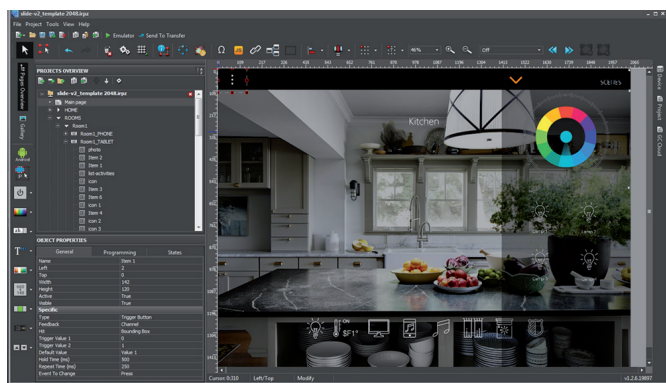
iNELS BUS for iRidium Mobile

... see page **35**

In-glass switch with integrated dimmer and wireless control

Energy gateway application
Improved app for RFPM-2

iNELS Air
**Our NB-IoT sensors in networks of other operators
Collaboration with Clever Farm**

Building management system
**iDM v.3.3.34 | Promotic | Flowbox |
Niagara Frameworks**

Demonstrating the possibilities of iNELS RF Control

Come to see our innovations
ELEC EXPO | VSK | LIGHT + BUILDING

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

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

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

Wired home automation

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.
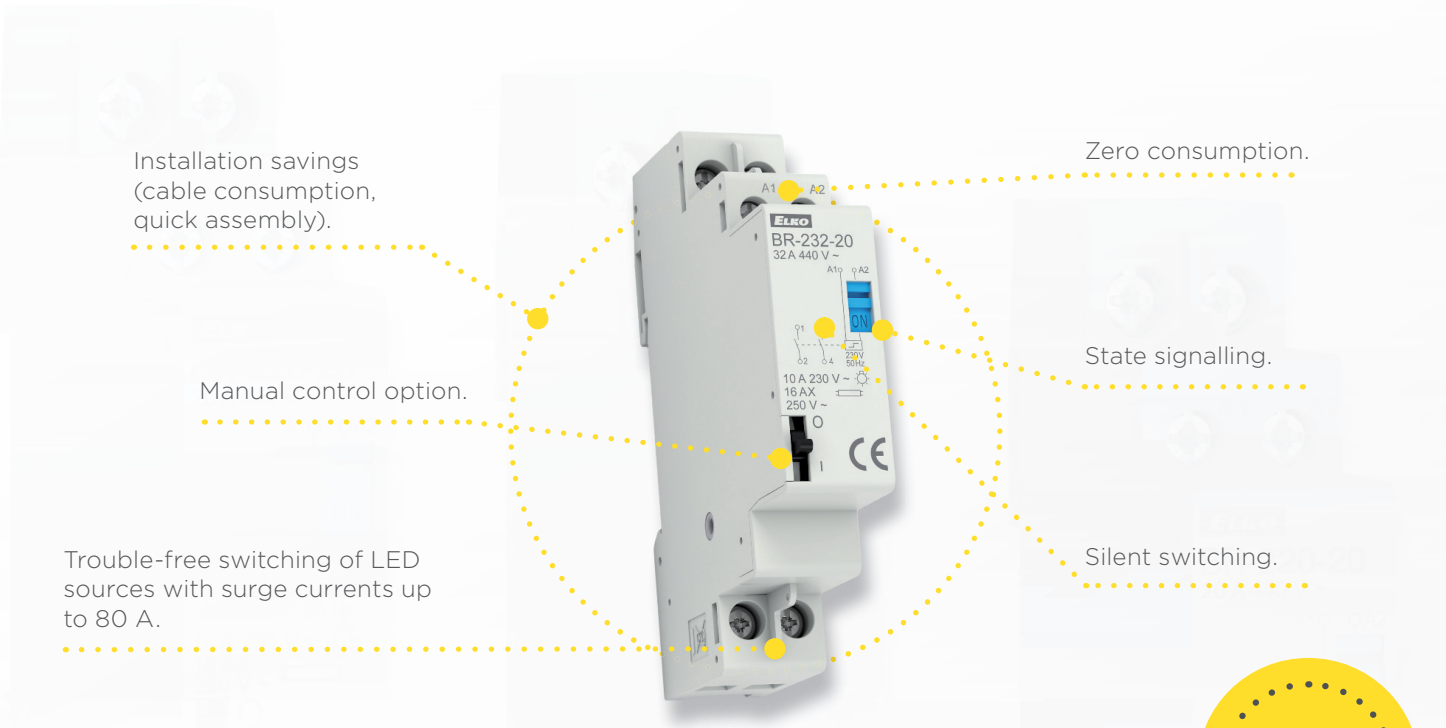
Switches and sockets

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.

Bistable relay

- Often referred to as "impulse".
- Bistable relays are used mainly for remote lighting control from multiple places, heating ...
- The advantage of these devices is silent switching and zero consumption energy in closed state.
- Manual control for BR-220-20 and BR-232-20.
- Due to surge current (up to 80 A for BR-232-20), LED lamps are more suitable for switching drivers.

- Bistable relays have a load of 6-10 A higher than conventional contactors due to the switching of LED lamps.
- In a conventional lighting control installation, a large amount of cables is used but for bistable relays they are used for signal control only 2 wires. As a result, the bistable relay provides savings during installation (cable consumption, installation time ...)

Installation savings (cable consumption, quick assembly).

Zero consumption.

Manual control option.

State signalling.

Trouble-free switching of LED sources with surge currents up to 80 A.

Silent switching.

New

Maximum number of LED lamps per pole at 230 V, 50 Hz		
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-216-11

BR-216-20

BR-220-20

BR-232-20
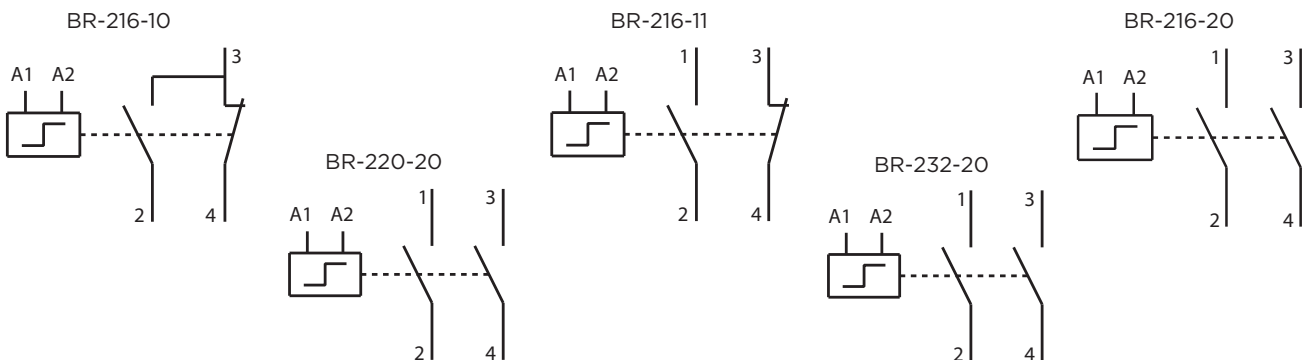
Innovation
of function and design

Staircase switch
CRM-4

innovation

Programmable staircase switch
CRM-46

New

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

glow lamps / LED
up to 100 mA => 100 pcs

LED timing signalling on the device.

Switch time programming function by number of button presses.

U

S

2s

18

tt   t   t   t   t

red LED

Possibility to set the signalling flashing light before switching off.

U

S

t   2s   t

18

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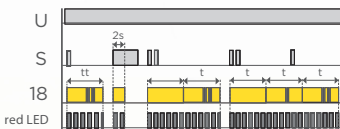
The function Turns off the lights before the time runs out.

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

S

t

New design

- 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.

Dimming of LED light sources

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 en-

ergy 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 φ. The power factor of dimmable LED lamps ranges from: cos φ = 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.

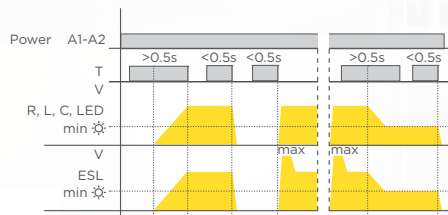## LED dimmers ELKO EP excel in parameters:

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
LED		dimmable LED bulbs

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

Load 160 W.

Integrated electronic thermal fuse. In case of reaction no exchange is necessary.
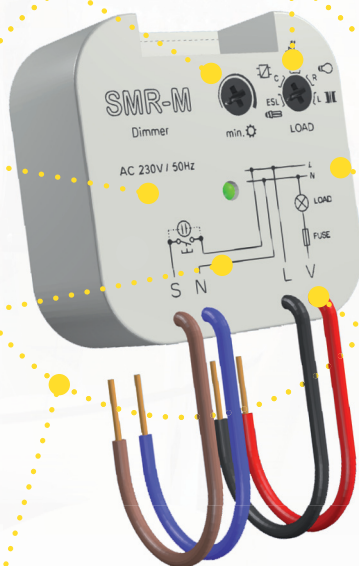
Brightness level will be saved to dimmer memory when powered off and restored when powered on again.

Possibility to connect up to 20 buttons with LED lamp (0.7 mA).

Universal dimmer
SMR-M

Button control dimmer.

Dimmers

New range of monitoring relays

Lower power consumption of 1.5 W compared to normal competition (> 3 W).

Thanks to the **galvanically isolated auxiliary power supply** (AUX), the relay function is maintained even in the event of a failure of the monitored voltage. This keeps the status of the monitored circuit continuously maintained.

Ability to measure with an **accuracy** of 2% (normal competition ≧ 5%).

With 24-240 V AC / DC power supply, **no additional power supplies are required.**

Up to **6 finely adjustable voltage** monitoring ranges per device.

New

Protection/Monitoring relays

The monitoring voltage relay ranges cover the nominal values of 1-phase and 3-phase voltages in various countries of the world – America | Europe | Asia | Australia | Africa.

V_{LN} [V]	58,7	63,5	69,3	100	110	115	120	127	139	220	230	240	254	265	277

V_n [V]
Nominal range

V_{LL} [V]	100	110	120	173	190	200	208	220	240	380	400	415	440	460	480

40 V_{LN} 360 V_{LN}

70 V_{LL} 624 V_{LL}
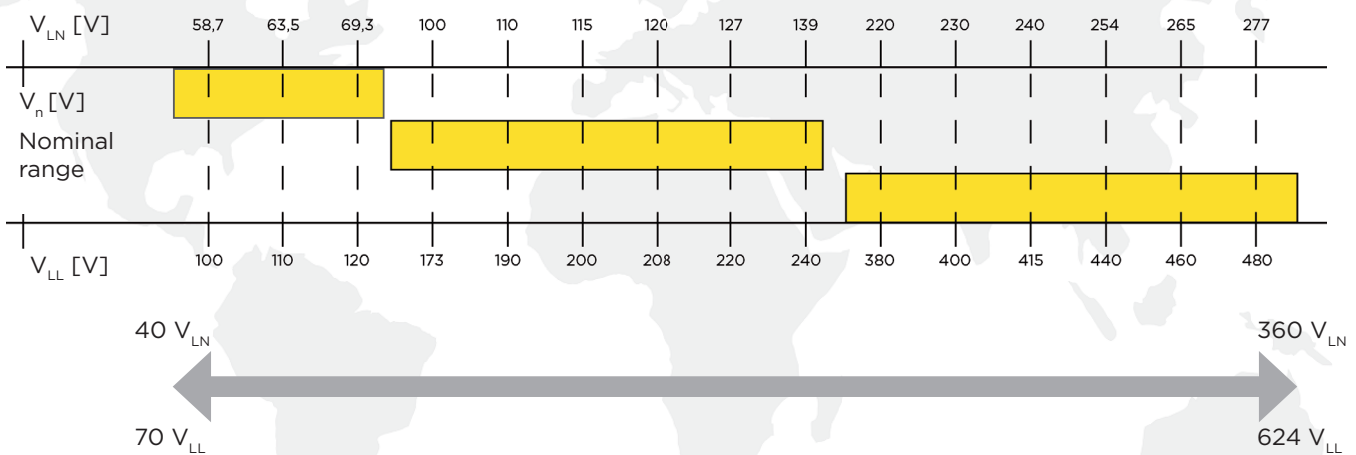
LEGEND: V_{LN} Voltage between phase and neutral
               V_{LL} Voltage between phases

Quick overview of monitoring relays

	Type	Connection	Power voltage	Phase	Adjustable range (min - max)	AC undervoltage	AC overvoltage	DC undervoltage	DC overvoltage	Phase failure	Phase order	Asymmetry
						Monitored quantities						
	HRN-33 / HRN-35 / HRN-37 / HRN-63 / HRN-67	1-M	from the monitored voltage	~	AC 48 - 276 V / AC 48 - 276 V / AC 24 - 150 V / AC 48 - 276 V / AC 24 - 150 V	✓	✓	X	X	X	X	X
	HRN-34 / HRN-64	1-M	from the monitored voltage	~	DC 6 - 30 V / DC 6 - 30 V	X	X	✓	✓	X	X	X
	HRN-41/230V / HRN-41/110V / HRN-41/400V / HRN-41/24V	3-M	AC 230 V / AC 110 V / AC 400 V / AC/DC 24 V	~	AC/DC 3 - 50 V / AC/DC 10 - 160 V / AC/DC 30 - 500 V	✓	✓	✓	✓	X	X	X
	HRN-42/230V / HRN-42/110V / HRN-42/400V / HRN-42/24V	3-M	AC 230 V / AC 110 V / AC 400 V / AC/DC 24 V	~	AC/DC 10 - 50 V / AC/DC 32 - 160 V / AC/DC 100 - 500 V	✓	✓	✓	✓	X	X	X
NEW	VROU1-28/69 / VROU1-28/139 / VROU1-28/277	3-M	AC/DC 24 .. 240 V	~	AC 43 - 86 V / AC 75 - 173 V / AC 165 - 346 V	✓	✓	X	X	X	X	X
	VRU1-28/69 / VRU1-28/139 / VRU1-28/277	3-M	AC/DC 24 .. 240 V	~	AC 43 - 69 V / AC 75 - 139 V / AC 165 - 277 V	✓	X	X	X	X	X	X
	VRO1-28/69 / VRO1-28/139 / VRO1-28/277	3-M	AC/DC 24 .. 240 V	~	AC 57 - 86 V / AC 100 - 173 V / AC 220 - 346 V	X	✓	X	X	X	X	X
NEW	VRMV1-28/240 / VRMV1-28/24	3-M	AC/DC 24 .. 240 V / DC 12 .. 24 V	~	DC 0 - 60 mV / DC 0 - 90 mV / DC 0 - 120 mV	X	X	✓	✓	X	X	X
	HRN-43/230V / HRN-43/110V / HRN-43/400V / HRN-43/24V	3-M	AC 230 V / AC 110 V / AC 400 V / AC/DC 24 V	(3-wired)	AC 3 x 84 - 480 V	✓	✓	X	X	✓	✓	✓
	HRN-43N/230V / HRN-43N/110V / HRN-43N/400V / HRN-43N/24V	3-M	AC 230 V / AC 110 V / AC 400 V / AC/DC 24 V	(4-wired)	AC 3 x 48 - 276 V	✓	✓	X	X	✓	✓	✓
	HRN-55	1-M	from the monitored voltage	(3-wired)	undervoltage: AC 3 x 300 V / overvoltage: AC 3 x 500 V	✓	✓	X	X	✓	✓	X
	HRN-55N	1-M	from the monitored voltage	(4-wired)	undervoltage: AC 3x 173 V / overvoltage: AC 3x 288 V	✓	✓	X	X	✓	✓	X
	HRN-57	1-M	from the monitored voltage	(3-wired)	AC 3 x 300 - 500 V	✓	✓	X	X	✓	X	X
	HRN-57N	1-M	from the monitored voltage	(4-wired)	AC 3 x 173 - 288 V	✓	✓	X	X	✓	X	X
	HRN-54	1-M	from the monitored voltage	(3-wired)	AC 3 x 300 - 500 V	✓	✓	X	X	✓	✓	X
	HRN-54N	1-M	from the monitored voltage	(4-wired)	AC 3 x 173 - 288 V	✓	✓	X	X	✓	✓	X
	HRN-56/120 / HRN-56/208 / HRN-56/240 / HRN-56/400	1-M	from the monitored voltage	(3-wired)	AC 3 x 84 - 114 V / AC 3 x 146 - 198 V / AC 3 x 168 - 228 V / AC 3 x 280 - 380 V	✓	X	X	X	✓	✓	X
	HRN-56/480 / HRN-56/575	3-M	from the monitored voltage	(3-wired)	AC 3 x 336 - 456 V / AC 3 x 403 - 546 V	✓	X	X	X	✓	✓	X
NEW	VROU3-28/120 / VROU3-28/240 / VROU3-28/480	3-M	AC/DC 24 .. 240 V	(3-wired)	AC 3 x 75 - 150 V / AC 3 x 130 - 300 V / AC 3 x 285 - 600 V	✓	✓	X	X	X	X	X
	VRU3-28/120 / VRU3-28/240 / VRU3-28/480	3-M	AC/DC 24 .. 240 V	(3-wired)	AC 3 x 75 - 120 V / AC 3 x 130 - 240 V / AC 3 x 285 - 480 V	✓	X	X	X	X	X	X
	VRO3-28/120 / VRO3-28/240 / VRO3-28/480	3-M	AC/DC 24 .. 240 V	(3-wired)	AC 3 x 100 - 150 V / AC 3 x 173 - 300 V / AC 3 x 380 - 600 V	X	✓	X	X	X	X	X
NEW	VROU3N-28/120 / VROU3N-28/240 / VROU3N-28/480	3-M	AC/DC 24 .. 240 V	(4-wired)	AC 3 x 40 - 90 V / AC 3 x 70 - 180 V / AC 3 x 154 - 360 V	✓	✓	X	X	X	X	X
	VRU3N-28/120 / VRU3N-28/240 / VRU3N-28/480	3-M	AC/DC 24 .. 240 V	(4-wired)	AC 3 x 40 - 69 V / AC 3 x 70 - 139 V / AC 3 x 154 - 277 V	✓	X	X	X	X	X	X
	VRO3N-28/120 / VRO3N-28/240 / VRO3N-28/480	3-M	AC/DC 24 .. 240 V	(4-wired)	AC 3 x 57 - 86 V / AC 3 x 100 - 173 V / AC 3 x 220 - 346 V	X	✓	X	X	X	X	X
NEW	VRSF3-18/120 / VRSF3-18/240 / VRSF3-28/480	1-M / 1-M / 3-M	from the monitored voltage	(3-wired)	AC 3 x 85 - 102 V / AC 3 x 147 - 204 V / AC 3 x 323 - 408 V	✓	X	X	X	✓	✓	X
	VRSF3N-18/120 / VRSF3N-18/240 / VRSF3N-28/480	1-M / 1-M / 3-M	from the monitored voltage	(4-wired)	AC 3 x 49 - 58 V / AC 3 x 85 - 118 V / AC 3 x 187 - 235 V	✓	X	X	X	✓	✓	X
NEW	VRBU3-18/120 / VRBU3-18/240 / VRBU3-28/480	1-M / 1-M / 3-M	from the monitored voltage	(3-wired)	AC 3 x 50 - 102 V / AC 3 x 86 - 204 V / AC 3 x 190 - 408 V	✓	X	X	X	✓	✓	✓
	VRBU3N-18/120 / VRBU3N-18/240 / VRBU3N-28/480	1-M / 1-M / 3-M	from the monitored voltage	(4-wired)	AC 3 x 29 - 58 V / AC 3 x 50 - 118 V / AC 3 x 110 - 235 V	✓	X	X	X	✓	✓	✓

Signaling relays

Type	Connection	Power voltage	Phase	Signaled range (min - max)	AC undervoltage	AC overvoltage	DC undervoltage	DC overvoltage	Phase failure	Phase order	Asymmetry
				Monitored quantities							
MPS-1	1-M	from the signaled voltage	(4-wired)	AC 3 x 50 - 276 V	✓	✓	X	X	X	X	X

Current relays

Type	Connection	Power voltage	Phase	Adjustable range (min - max)	AC undercurrent	AC overcurrent	DC undercurrent	DC overcurrent
				Monitored quantities				
PRI-32	1-M	AC 24 .. 240 V DC 24 V	⏦	AC 1 - 20 A	X	✓	X	X
PRI-41/230V PRI-41/110V PRI-41/400V PRI-41/24V	3-M	AC 230 V AC 110 V AC 400 V AC/DC 24 V	⏦	AC/DC 0.1 - 1.6 A AC/DC 0.3 - 5 A AC/DC 1 - 16 A	✓	✓	✓	✓
PRI-41/230V PRI-41/110V PRI-41/400V PRI-41/24V	3-M	AC 230 V AC 110 V AC 400 V AC/DC 24 V	⏦	AC/DC 0.32 - 1.6 A AC/DC 1 - 5 A AC/DC 3.2 - 16 A	✓	✓	✓	✓
PRI-51/0.5 PRI-51/1 PRI-51/2 PRI-51/5 PRI-51/8 PRI-51/10 PRI-51/16	1-M	AC 24 .. 240 V DC 24 V	⏦	AC 0.05 - 0.5 A AC 0.1 - 1 A AC 0.2 - 2 A AC 0.5 - 5 A AC 0.8 - 8 A AC 1 - 10 A AC 1.6 - 16 A	X	✓	X	X
PRI-52	1-M	AC 24 .. 240 V DC 24 V	⏦	AC 0.5 - 25 A	X	✓	X	X
PRI-53/1 PRI-53/5	6-M	AC/DC 24 .. 240 V	⎓	AC 3 x 0.4 - 1.2 A AC 3 x 2 - 6 A	✓	✓	X	X
NEW CROU1-28/1 CROU1-28/5	3-M	AC/DC 24 .. 240 V	⏦	AC 0.4 - 1.2 A AC 2 - 6 A	✓	✓	X	X
CRU1-18/1 CRU1-18/5	1-M	AC/DC 24 .. 240 V	⏦	AC 0.4 - 1.2 A AC 2 - 6 A	✓	X	X	X
CRO1-18/1 CRO1-18/5	1-M	AC/DC 24 .. 240 V	⏦	AC 0.4 - 1.2 A AC 2 - 6 A	X	✓	X	X
NEW CRMA1-28/240 CRMA1-28/24	3-M	AC/DC 24 .. 240 V DC 12 .. 24 V	X	DC 0 - 1.2 mA DC 0 - 12 mA DC 0 - 24 mA	X	X	✓	✓

Other monitoring relays

Type	Connection	Power voltage	Phase	Adjustable range	Ground fault	Revers power	Synchronization	Speed sensing	Frequency monitoring	Power factor monitoring
					Monitored quantities					
NEW CRGF1-18/240 CRGF1-18/24	3-M	AC/DC 24 .. 240 V DC 12 .. 24 V	X	current: 100; 150; 200; 250; 300; 450; 600; 750; 800; 1200 A	✓	X	X	X	X	X
NEW CRRP1-28/120 CRRP1-28/240 CRRP1-28/480	6-M	U_{LN} = 57 .. 69 V U_{LN} = 100 .. 139 V U_{LN} = 220 .. 277 V	⏦ (2-wired) ⎓ (4-wired)	of rated current: In = 2, 3, 4, 5, 8, 10 A	X	✓	X	X	X	X
NEW CRRP3-28/120 CRRP3-28/240 CRRP3-28/480	6-M	U_{LL} = 3 - 100 .. 120 V U_{LL} = 3 - 173 .. 240 V U_{LL} = 3 - 380 .. 480 V	⎓ (3-wired)	of rated current: In = 2, 3, 4, 5, 8, 10 A	X	✓	X	X	X	X
NEW VRSC1-28/69 VRSC1-28/139 VRSC1-28/277	6-M	U_{LN} = 57 .. 69 V U_{LN} = 100 .. 139 V U_{LN} = 220 .. 277 V	⏦ (2-wired) ⎓ (4-wired)	synchronization: 10-30 %	X	X	✓	X	X	X
NEW FRSS1-38/130	3-M	DC 12 .. 24 V	X	of rated speed: (calibration) 1-10 kHz	X	X	X	✓	X	X
HRF-10	3-M	AC 161 .. 346 V	⏦	frequency: 40 - 60 Hz 48 - 72 Hz 320 - 480 Hz	X	X	X	X	✓	X
COS-2/230V COS-2/110V COS-2/400V COS-2/24V	3-M	AC 230 V AC 110 V AC 400 V AC/DC 24 V	⏦ (2-wired) ⎓ (3-wired)	power factor: 0.1 - 0.99	X	X	X	X	X	✓

Ground fault relays
Revers power relays
Synchro-check relays
Speed sensing relays
Frequency relays
Power factor relays

Automatic lighting control of hotel rooms

The guests in the hotel rooms do not care about the energy costs: "it is not their consumption and they don't have to pay for it." Therefore, they leave the lights, TV and other appliances switched on even in the absence (e.g. breakfast). The card switches tried to prevent this, but it turned out to be inefficient because of the replacement of cards in the switch with business cards, or in the case of RFID by simply asking for a replacement card at the reception. This problem is not only for hotel guests, but also for the hotel's own cleaning services, which may not be targeted: "they just forget to turn off."

The automatic lighting control system prevents unnecessary lighting in the absence of persons. This saves energy costs, significantly.

When entering a hotel room, the RFWD-100 wireless door detector detects the door opening and sends a command to the RFSA-161B switch to turn on the light for a set time (e.g. 3 minutes). The person entering the room is detected by the motion detector RFMD-100 and a command is sent to the RFSA-161B switching device to override the door detector command. In the room (and in the bathroom) movement is monitored continuously by means of motion detectors, and thus the light stays on. If the person leaves the hotel room = movement is not detected and at the same time, the door is closed by the door detector, a command to turn off the light is sent (in the case of no movement detected). When the guest goes to sleep, press the "Master OFF" button on the RFWB-40 wireless controller to turn off the illumination and deactivate the automatic lighting control function in the background. In the morning, pressing the button to turn on the illumination on the RFWB-40 wireless controller in the background activates this function.

Thanks to the integrated terminals, the RFSA-161B switchgear allows you to connect existing buttons in your installation, eliminating the need to remove the buttons during renovation.

In the hotel room there are other appliances such as lamps, sockets, curtains, which you control through other RFSA switching and dimming RFDEL components with RFWB-40 wireless buttons.

Cooling / heating control is an essential part of the hotel room renovation. The RFSA-166M switching component is a peripheral unit for controlling the fancoil type of temperature control. It is an integral part of the thermostat RFTC-150G, which thanks to the flat base allows quick assembly and is available in 36 colours. It is combined with an RFWD-100 door detector to turn off cooling / heating when a window or balcony door is opened. In addition to the temperature control, the RFSTI-11B temperature device monitors the maximum room temperature (e.g. 32 °C). Especially in warm countries and hot days, the room temperature may rise above 30 °C, resulting in the destruction of furniture by dry air. Conversely, nonstop air conditioning (if there is no person in the room for more than a day) causes unnecessary costs.

An essential advantage of the implementation of this system is not only savings in energy consumption, but also quick assembly (within two hours), and without the need to close the room, which would cause a financial loss to the hotelier.
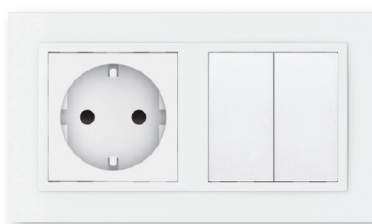
Bedside panel
Schuko, RFWB-40

Temperature control
RFTC-150/G

Window / Door detector
RFWD-100

Motion detector
RFMD-100

Automatic light control
RFSAI-161B

Wireless switch unit
RFSA-166M

In-glass switch
with integrated dimmer
and wireless control

Luxury glass switch design.

Built-in temperature sensor with 0-55 ° C range and application display.

Option to select icons for control buttons from library of icons.

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

Capacitive touch control.

White LED backlight for signalling.

LED light sources are generally prone to fade and beyond a certain boundary a blinking phenomenon can occur, this eliminates the possibility, maintaining the minimum set brightness when this level set above the blink and thereby continuously dimmed.
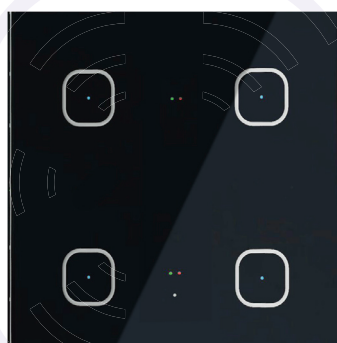
Built-in vibration sensor for feedback.

RFDW-71/B
8595188141789

Wireless switch unit
RFSA-61B

Switch unit for shutters
RFJA-12B

control of shutters

New
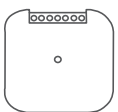
integrated switch

Universal dimmer
RFDEL-71B
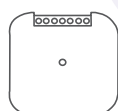
Wireless switch
RFDW-71B

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

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.
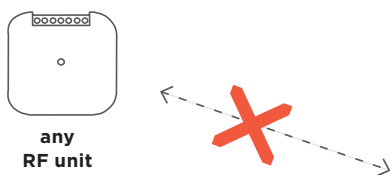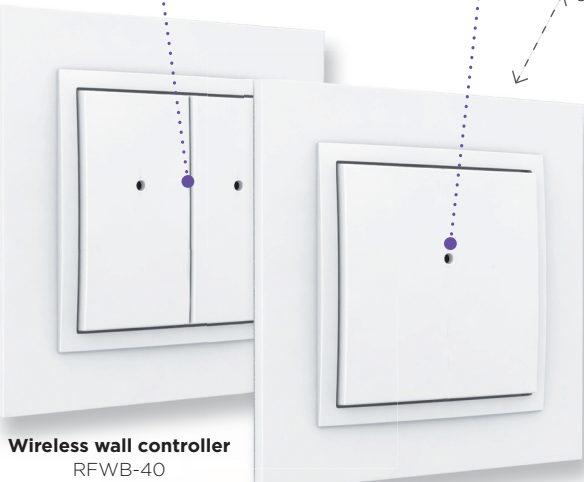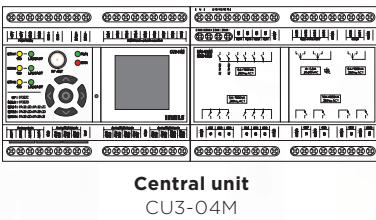
any RF unit

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

Wireless wall controller
RFWB-40

Central unit
CU3-04M

Wireless wall controller
RFWB-20

Smart RF box
eLAN-RF-003

RFWB | ROOM 1

GRANDMA NEEDS YOU

Labelling of iNELS RF elements with RFIO² protocol

RFSA-66M
110-230V AC / 50-60 Hz
868 MHz
RFIO2
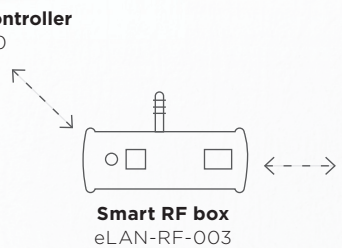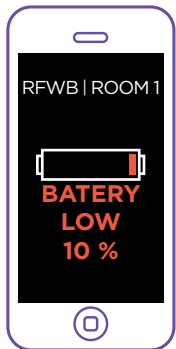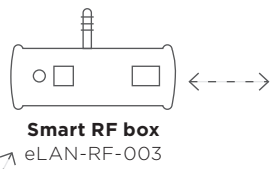
iNELS²
RF Control

Panic button

When the button is pressed, the information is sent to the smartphone via the eLAN-RF-003 smart box.
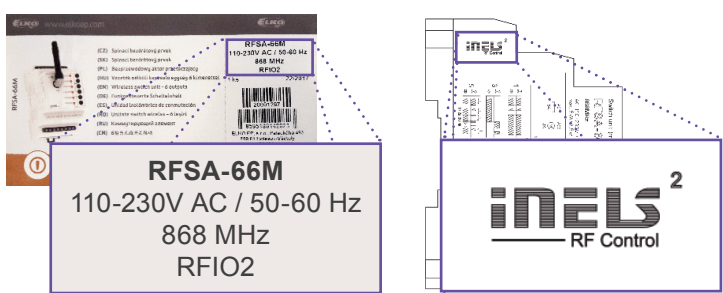
Service key RFAF/USB

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.

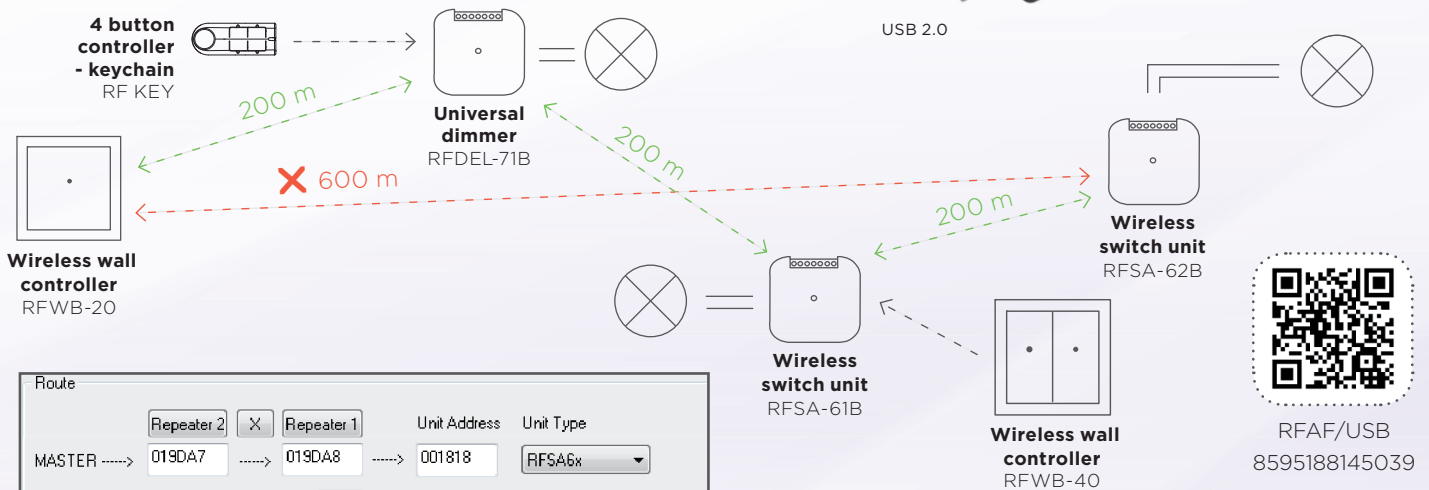**Available frequency for individual territories:**

866 MHz Indie
868 MHz EU, UA, RU, Middle east
916 MHz North / South America, Australia, New Zealand

USB 2.0

4 button controller - keychain RF KEY

200 m

Universal dimmer RFDEL-71B

200 m

✖ 600 m

Wireless wall controller RFWB-20

200 m

Wireless switch unit RFSA-62B

200 m

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
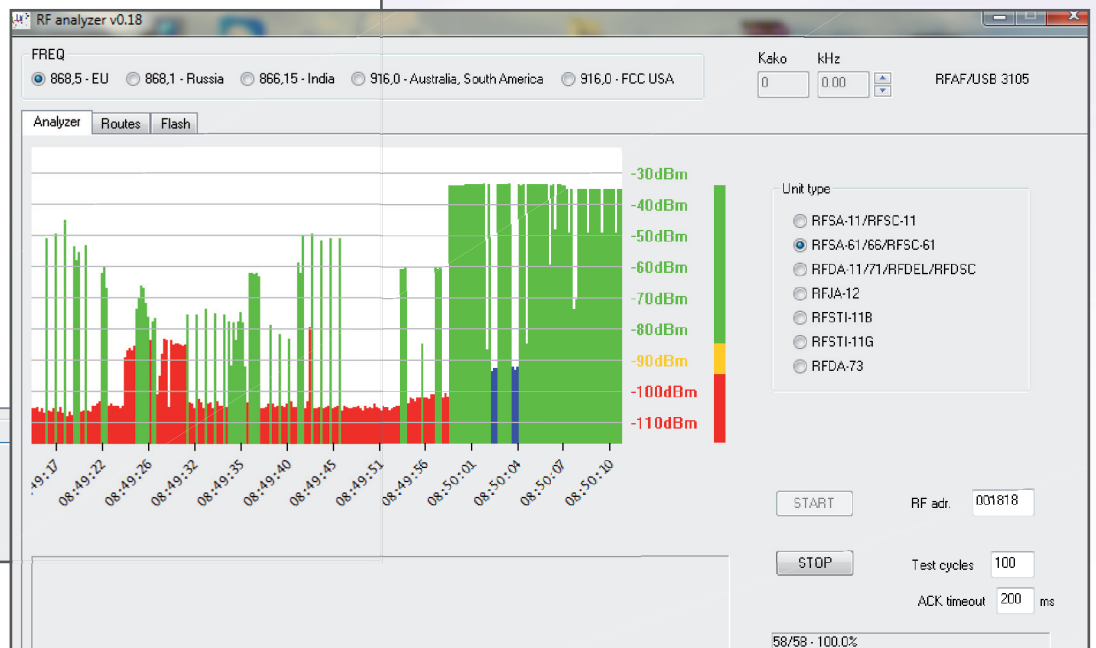
Route Test
Write Route to Repeater(s)
Delete Route from Repeater(s)
Select Route
Load Route List
Save Route List

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.
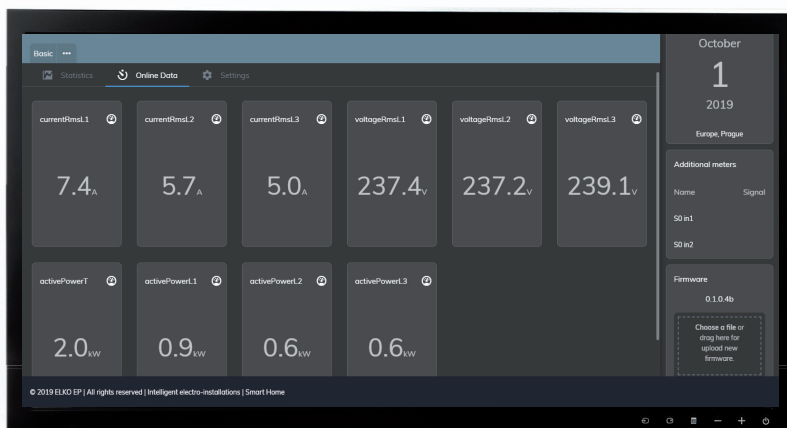
DEMO web interface

http://217.197.144.56:2130/

Login and password: **admin**

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
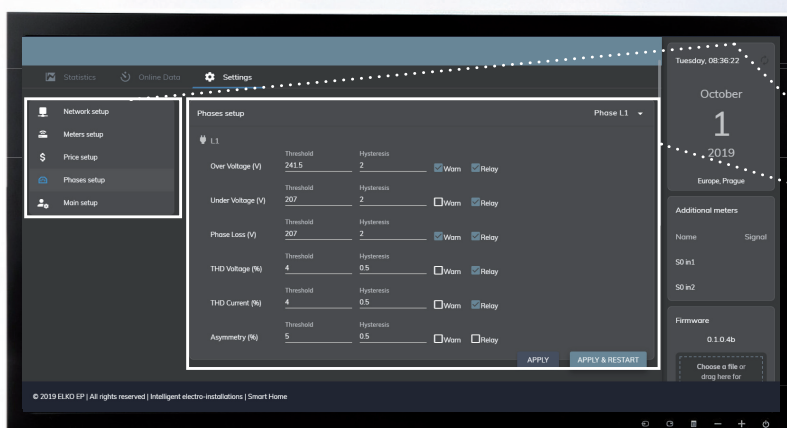
SETTINGS

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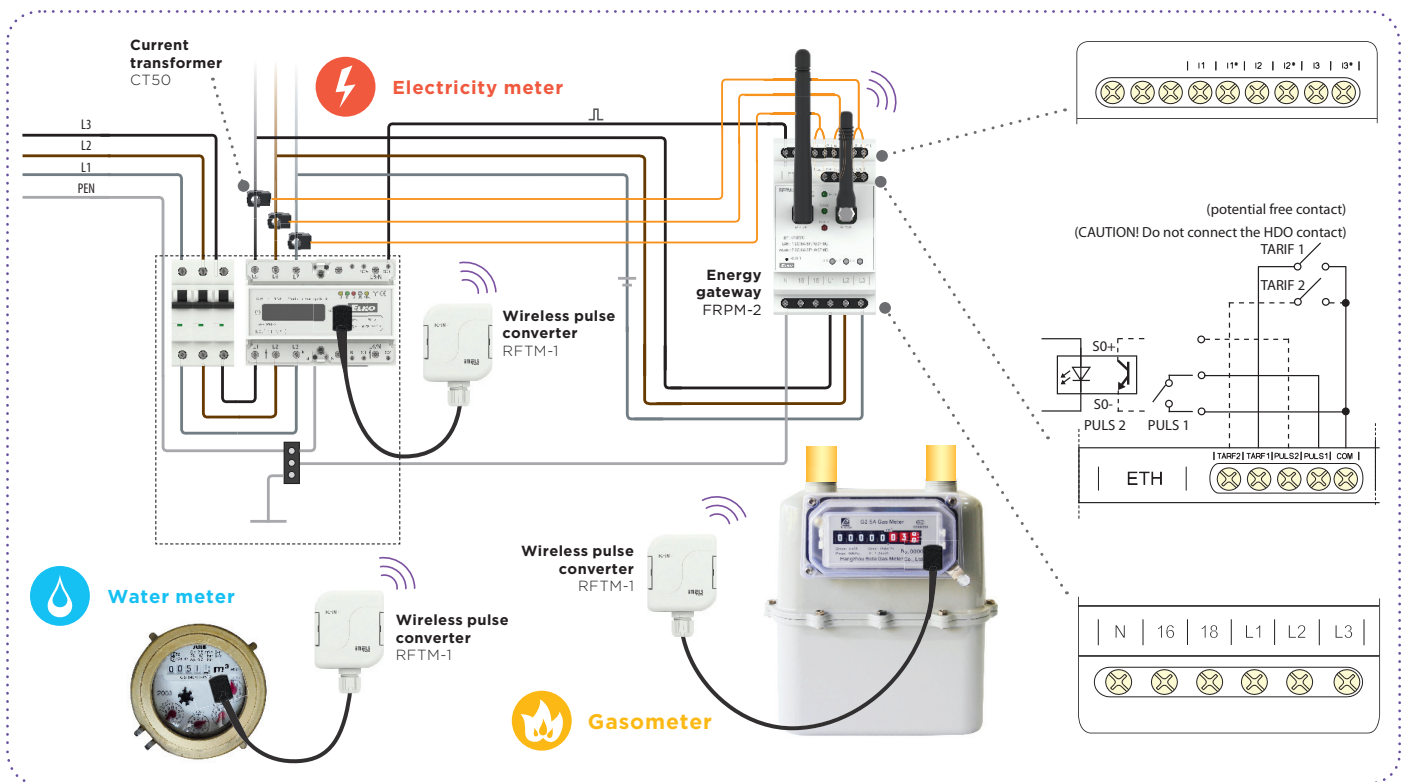
Measured data can be displayed not only through the web interface on the PC, but also in iNELS Home Control (iHC). The measured values of all quantities can be monitored, but above all archived and analysed in many selected time periods (daily, weekly, monthly and yearly). Consumption can be quantified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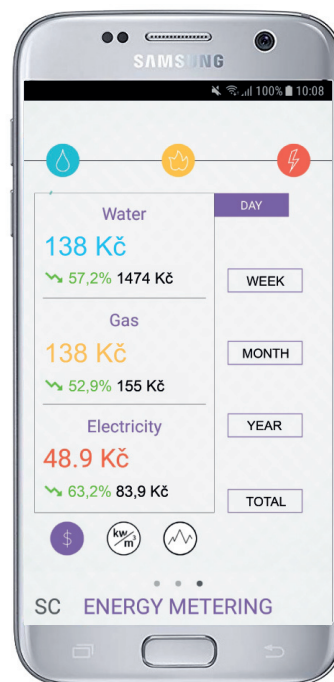
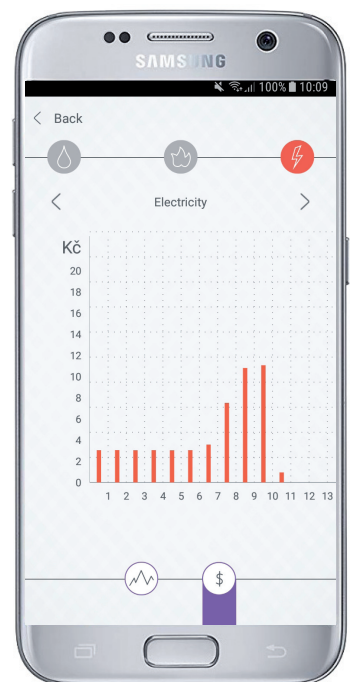PROMO APP available

Login and password: **admin**
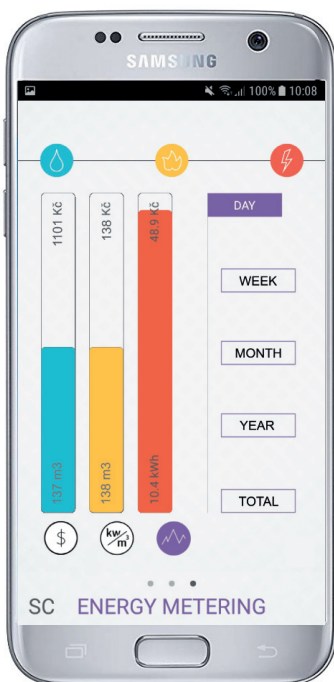
Current consumption can be displayed as a bar graph.
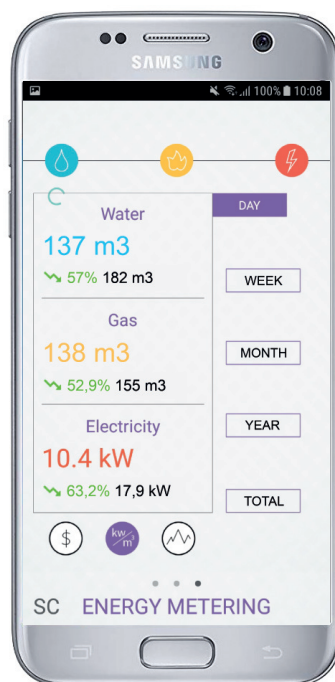
You can choose to display the consumption in units.

One click to switch to power consumption in your currency.

Significant savings can be achieved by analysing data.

Control iNELS via TV

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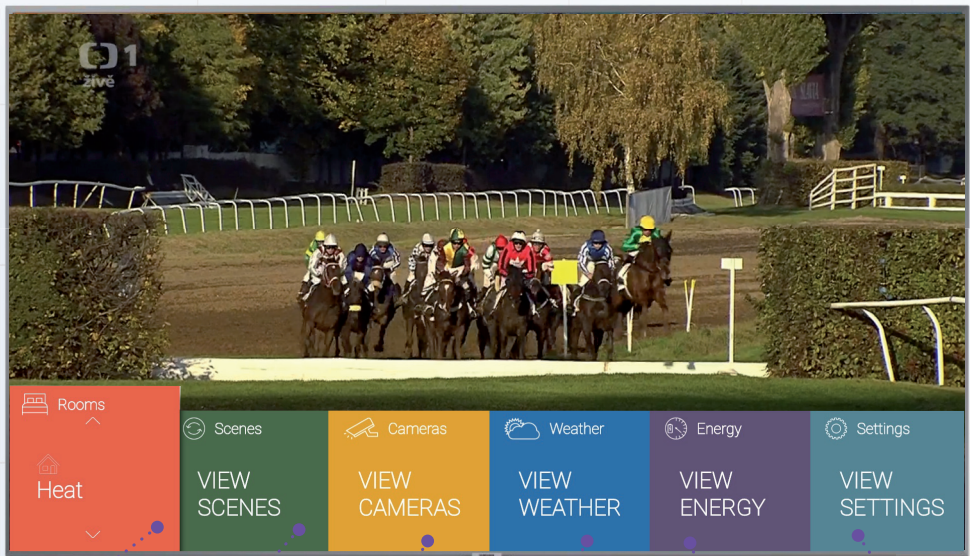
Room selection.

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 app 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

Evalua.: 4+ | Size: 26,71MB (available 144,61MB) | Developer: ELKO EP, s.r.o.

Price: Free | Actualiz.: 12/6/2019 | Latest version: 1.0.007 | 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 you can control:

Weather station

Blinds, shutters

Cameras

Lighting

Intercom

Multimedia

Heating

Energy management

Switching
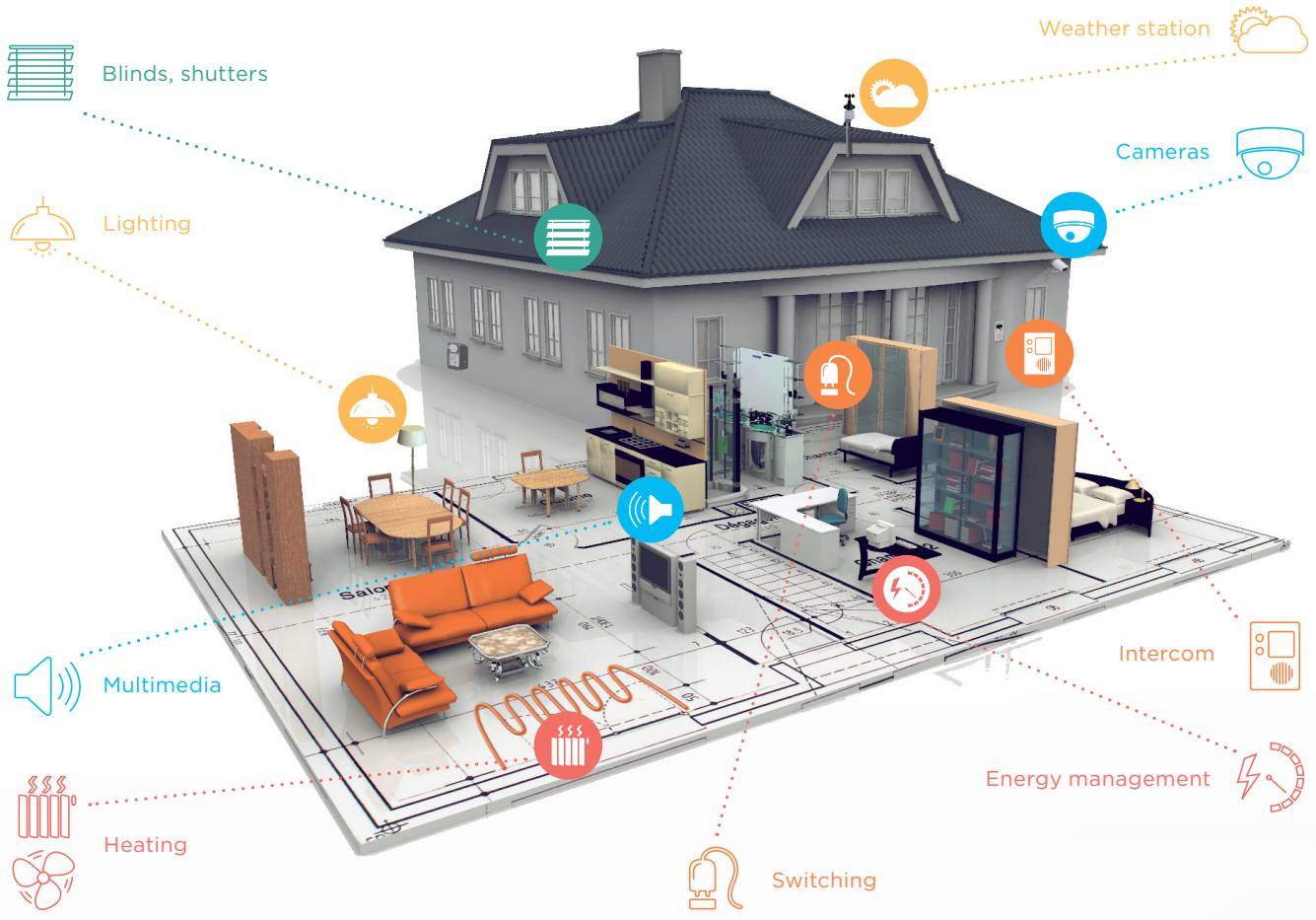
ATV

Set temp

21.0 °C

Open window sensitivity

0

Open window off time

0

Light

On/Off

TURN OFF

Brightness

Automat

TURN ON

Increase

0:02

Increase

Decrease

0:02

Decrease

Camera

SCENES   CAMERAS   WEATHER   ENERGY   SETTINGS

Our NB-IoT sensors
in networks of other operators

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.

iNELS Air catalogue
elkoep.com/catalogs-and-brochures

Our IoT devices are working in those NB-IoT operator networks now:

STC
Saudi Arabia

Mobily
Saudi Arabia

MTS
Russia

etisalat
United Arabian Emirates

vodafone
Czech Republic, United Kingdom, Malta

SFR
France

T··Mobile·
Slovakia, Netherlands

lmt
Latvia

Telia
Sweden

NB-IoT
asociated operators

iNELS Air
powered by ELKO ep

Collaboration with Clever Farm

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.
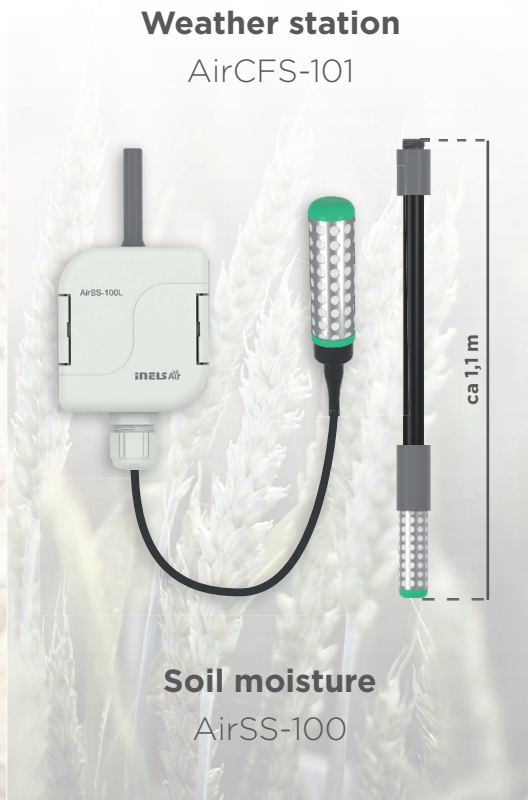
CLEVER° FARM'

Official site
cleverfarm.org

LoRa™

sigfox

NB-IoT

Wind speed (m/s)

Wind direction

Precipitation (mm)

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

Weather station
AirCFS-101

ca 4 m

ca 1,1 m

**Temperature
of stored harvest**
AirSS-100

Soil moisture
AirSS-100

**Humidity, temperature
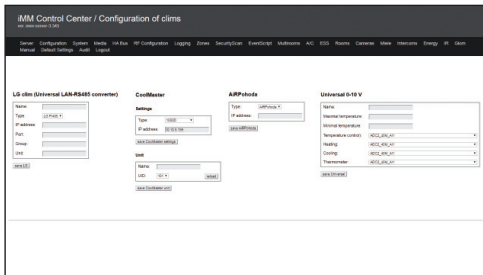and atmospheric presure**
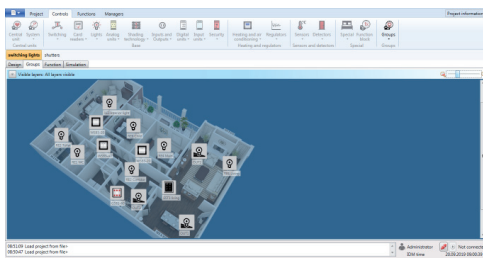AirCFS-100

How to control A/C by iNELS?
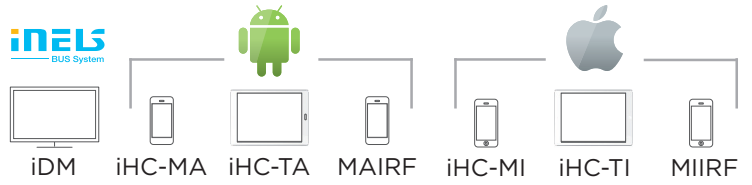

Smartphone app view (iHC-MA/MI)

Tablet app view (iHC-TA/TI)

iMM Control Center setup screen

iMM Control Center setup screen

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

Daikin
RTD-NET

LGPI-485

eLAN-RS
485/232

Mitsubishi
MELCOBEMS

Coolmaster
Net

Daikin
DK-AC-WMP-1

LG
LG-RC-WMP-1

Intesis
Box-WMP1
series

Samsung
SM-ACN-MBS-4

Midea
MD-AC-MBS-1

IR

infrared
control

eLAN-IR-003

0-10
ci

0-10
ci

0-10
ci

0-10
ci
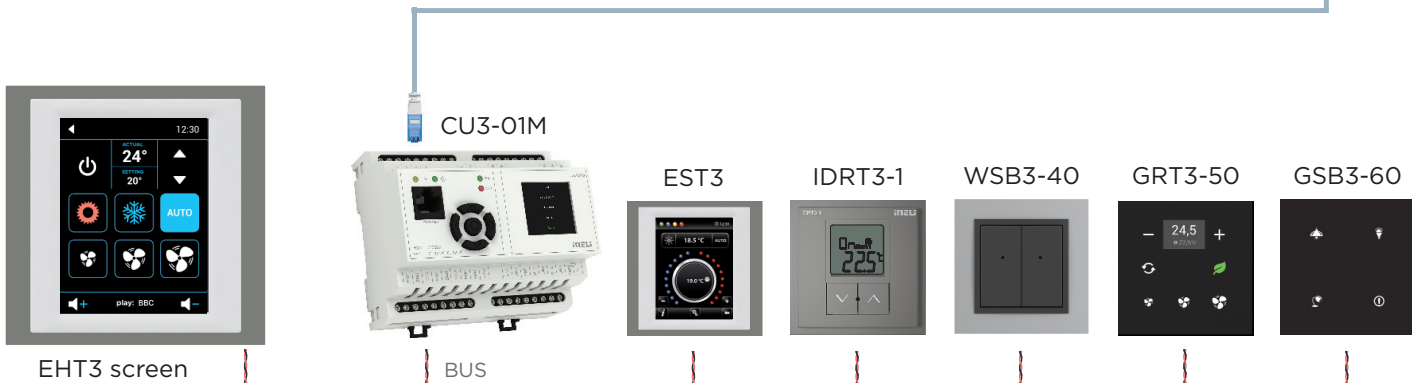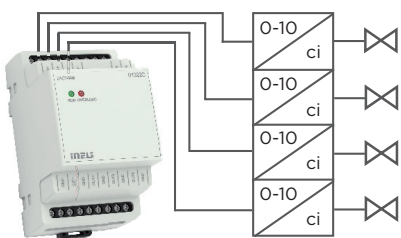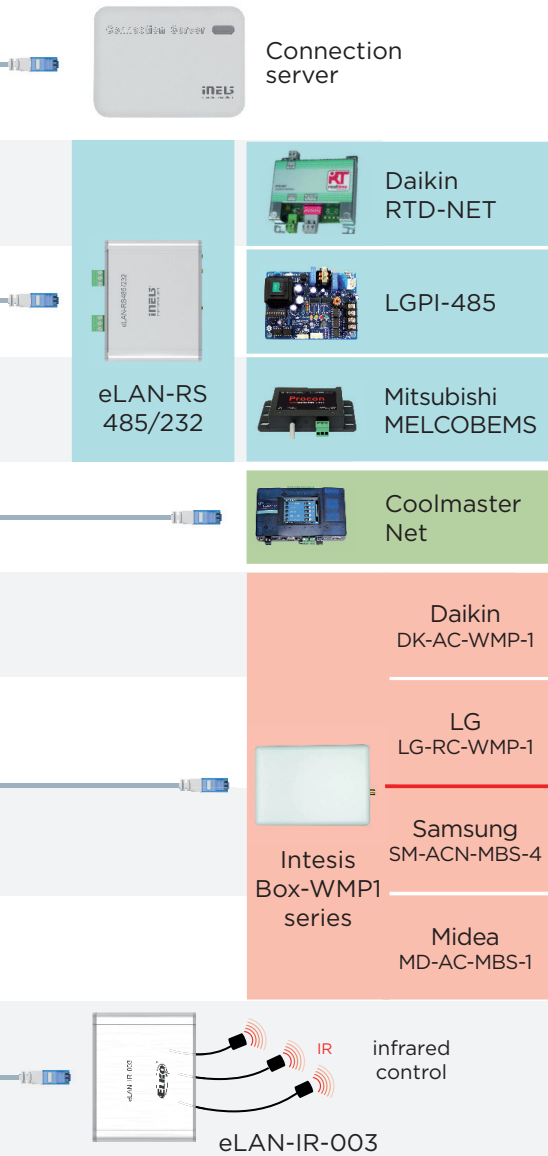
IM3-20B

conrol via
Digital/analog converter
DAC3-04M

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
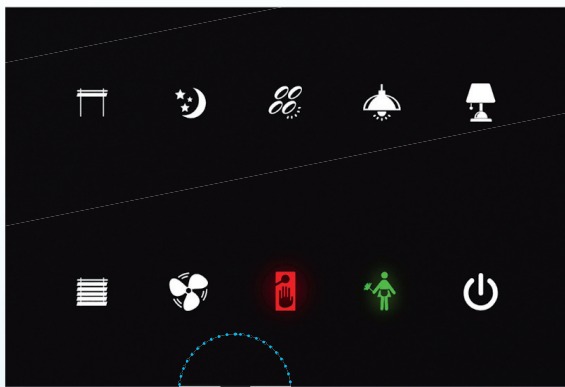
hisense

iDM v.3.3.34

The latest 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.
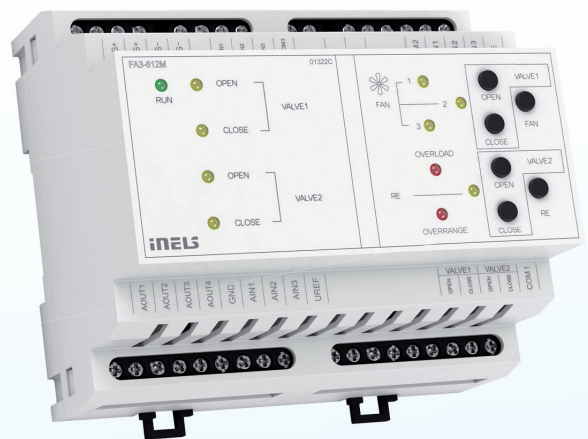
An interesting new feature is the support of proximity sensors in glass wall units, which allows the detection of a passing or approaching person and depending on the action set can, for example, turn on the backlight of the device or trigger various devices (in the form of a scene).

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.

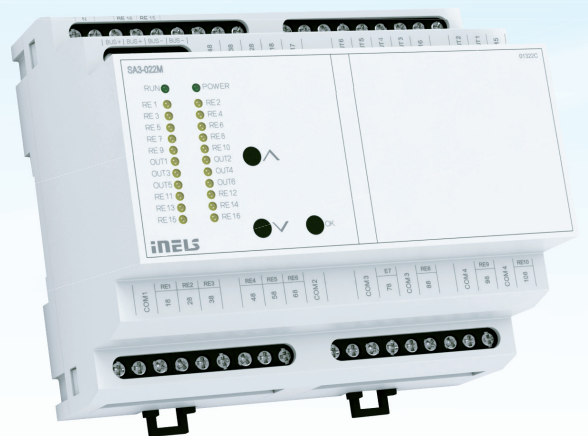**Fan Coil Control Actuator**
FA3-612M

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).

Switching actuator
SA3-022M

Device manager

01AA

CU3-02M (019B8E)
Centrální jednotka - CU3, 4x digitální vstup, 2x analogový vstup, 1x digitální output, instalace na DIN lištu, 6-MODUL.
Internal-Master/BUS1 (0100F1)

SA3-06M (01AAA9)
SA3-06M

New unit | Delete unit | Change central unit | Wire transfer | Search struct

☐ **Module filter**

- ☑ Internal-Master/BUS1 (0100F1)
- ☑ Internal-Master/BUS2 (0100F2)
- ☑ Internal-In-Out-Master-CU3-01M-CU3-02M (0100F3)
- ☑ Internal-RF-Master (0100F6)
- ☑ HC-Circuit-Module (010050)
- ☑ Regulators-Module (010051)

☐ **Unit filter**

- ☑ Controller
- ☑ Cool-Regulator
- ☑ DA3-22M
- ☑ DAC3-04B
- ☑ DMD3-1
- ☑ EST3
- ☑ Fan-Coil-Regulator
- ☑ GCH3-31
- ☑ GRT3-50
- ☑ GSB3-60
- ☑ Heat-Regulator
- ☑ In-Out-CU3-01M-CU3-02M
- ☑ SA3-02M
- ☑ SA3-06M
- ☑ WSB3-20
- ☑ WSB3-40-Hum

Units limit

8/32

Bus separator type | BPS3-02M

410/1000[mA]

Search filter.

Function block manager

Blocks | Block templates

Function block wire detail

OFF	nput/output sw	-- ✏	✏	OFF
Button Up	Digital input/output switch ON		Digital - switch OFF	DOUT Up
OFF	nput/output sw	OK ✏	✏	OFF
			pulse ON	DOUT Down

Digital - impulse ON
Delay (hour:min:sec.milsec): 00:00:00.000
Impulse time (hour:min:sec.milsec): 00:00:00.500

| OFF ✏ | OFF ✏ | OFF ✏ | OFF ✏ |
| Bit Move Up | Bit Move Down | Bit Tilt Up | Bit Tilt Down |

| OFF ✏ | OFF ✏ |
| Bit Tear | Bit Sub Tear |

Function block detail.

iNELS

Bridge

iMM Control Center / HA Bus
ver. connection-server-3.352

iNELS RF Control | Miele | Onvif

SIP   TCP/IP

Connection Server

PROMOTIC

SCADA

M-Bus   DALI   BACnet

Modbus   MQTT   LonWorks

S-BUS / S-BUS+   FINS
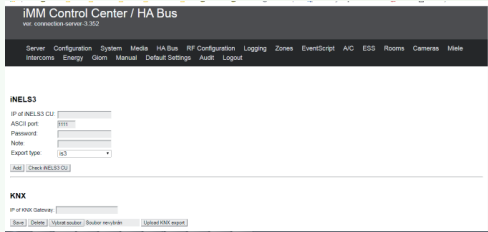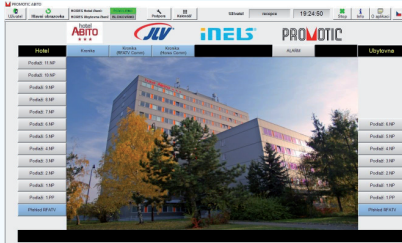
Server

BMS – Building management system

powered by

niagara
framework

Modbus   LonWorks   KNX

M-Bus   BACnet   Z-WAVE

MQTT   REST API

JACE 9000

FLOWBOX

BACnet   DALI   LonWorks

Modbus   MQTT   sigfox
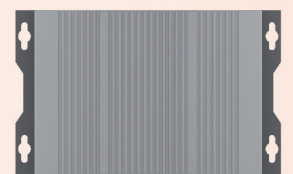
Flowbox Server

iNELS

Wired (BUS)
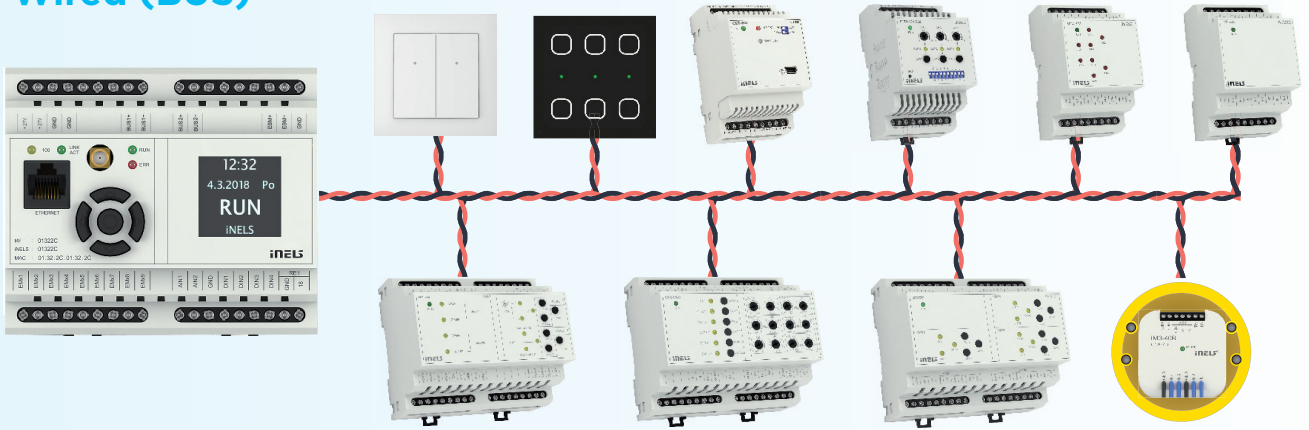
Wireless (RF)

Smoke detector	Wireless switch unit	4-button controller	Wireless contact converter
Window / Door detector	Dimming Actuator for LED strips	Wireless dimmer switch	Switching unit for shutters

iNELS Air (IoT)

LoRa

sigfox

NB-IoT

Smoke detector	LWES / NEMA Outdoor street light controller	Soil moisture	Energy monitoring Water
Motion detector	Waste container fill level detector	Humidity, temperature and atmospheric presure	Energy monitoring Gas

27

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.
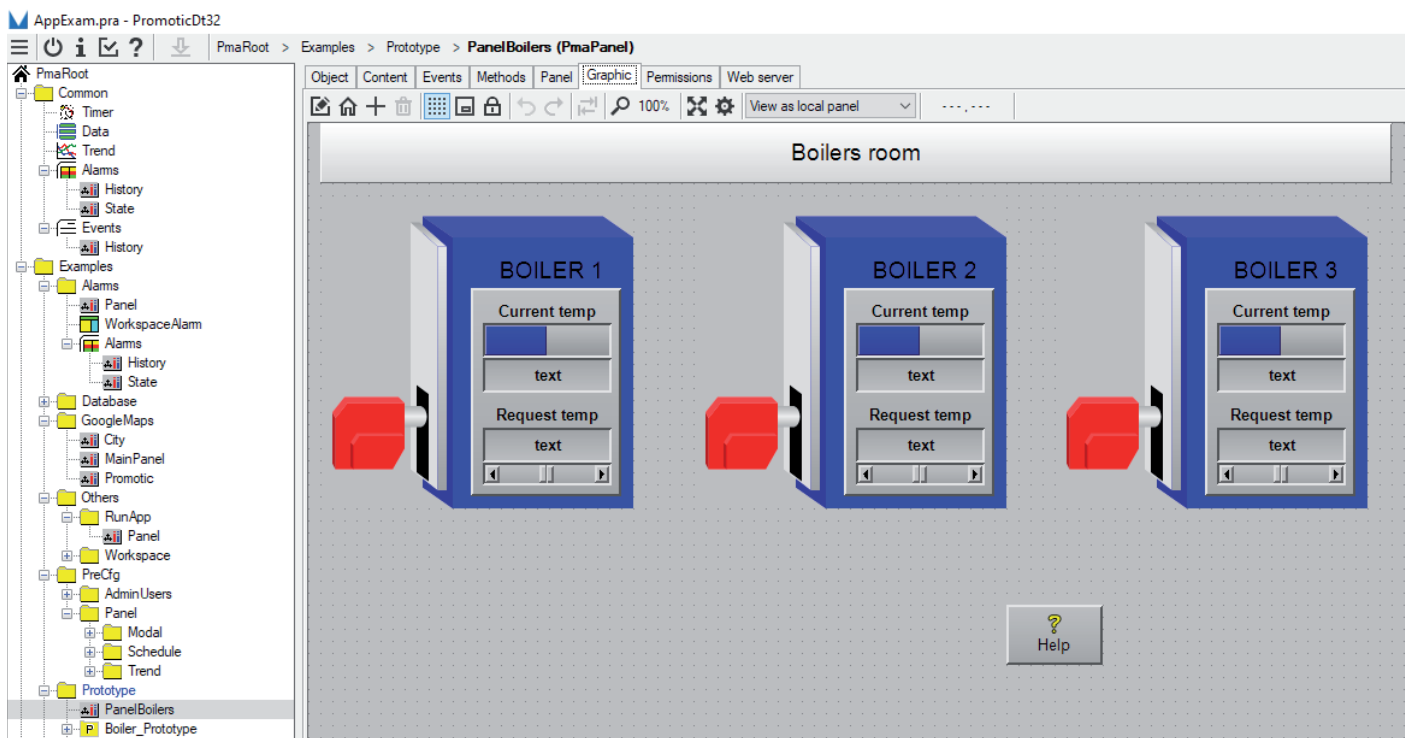
The user interface.

Various iNELS units can be connected to the Promotic 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.**
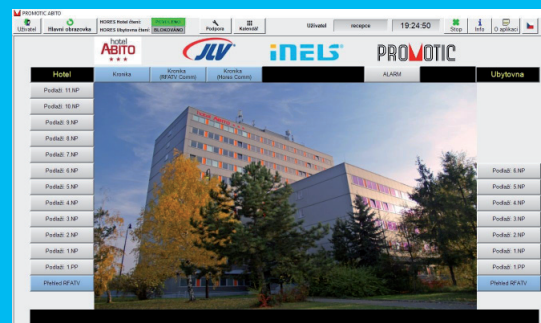
Find out more about the solution:

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

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

- Programmable web interface / dashboards and JavaScript or HTML5 control logic for both desktop and phone. The user can also program by drag and drop.

- Connectivity to various interfaces and repositories, e.g. XML, OPC, ActiveX, MySQL, oBix.

- Ability to add custom software drivers written in Java for additional communication protocols.

- Integration of alarms and notifications - alerting the user to defined events with a link to history and communication means (telephone or e-mail server).

- Cooperation with Oracle hotel systems - API connectivity.

- Surveillance can be extended with IP cameras or entire DVRs.

- Support for diverse systems, including voice assistants.

- All software is OS independent - works reliably on both Microsoft Windows and Linux distributions.

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

The entire solution architecture is built on a virtual Java machine whose operating system is written to run either on Tridium hardware - JACE 8000: http://bit.ly/Niagara_JACE8000 - or on any workstation if Workbench software is installed carrying all important system components. The whole licensing model is based on the number of data points charged regardless of the communication protocol used.
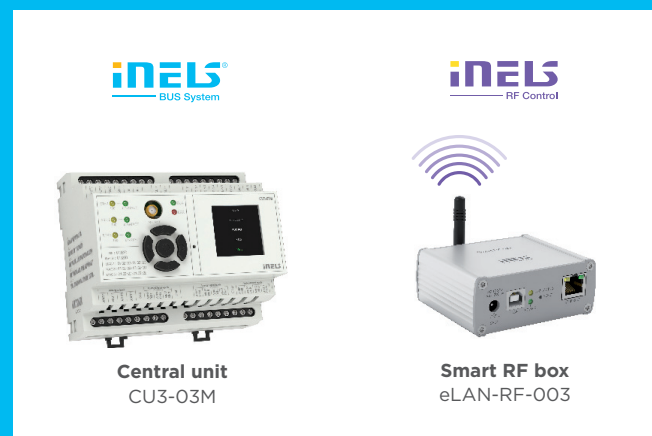
Integrators use the tool called Workbench to create and edit projects, which allows you to create both network diagrams and graphical interfaces for the web or user dashboards. The software can handle drag and drop commands, but also serves as an interpreter for JavaScript or HTML5.

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

iNELS and Niagara Framework

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

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

Central unit
CU3-03M

Smart RF box
eLAN-RF-003

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

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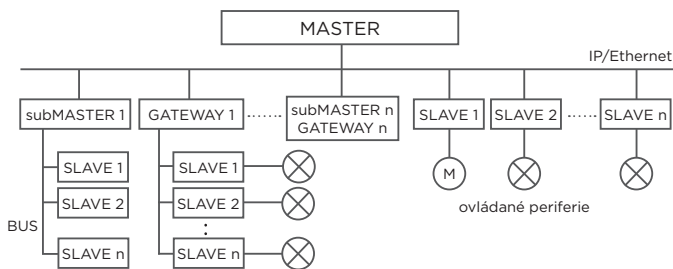
The architecture of the system is based on so-called realms (platform environment) aggregating all monitored or controllable elements.

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.
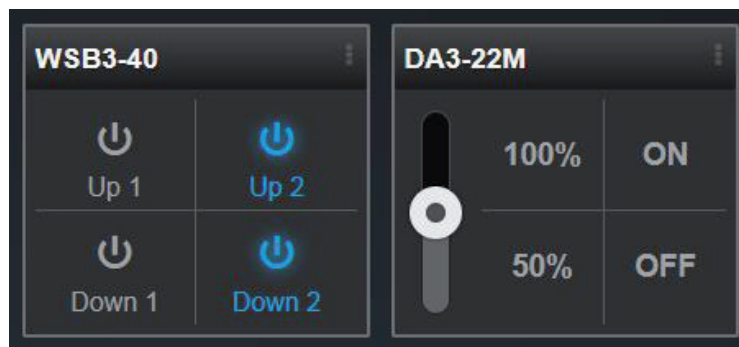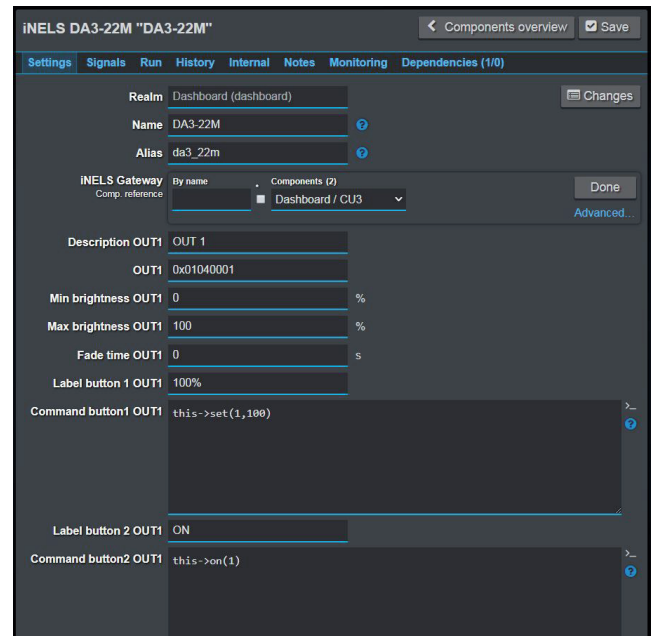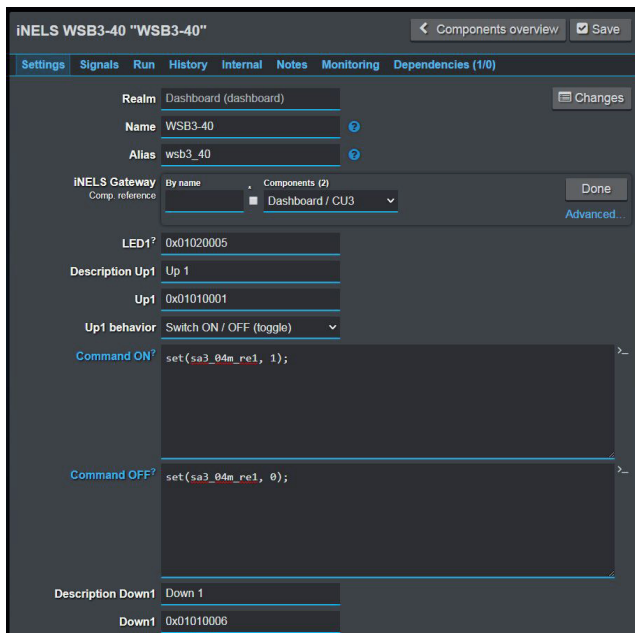
iNELS and Flowbox

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.

Wall switch button
WSB3-40

Universal dimming actuator
DA3-22M

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.

Overview table

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	niagara framework	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

iNELS BUS for iRidium Mobile

The customizable interface area is represented by an iRidium Mobile solution that offers customized GUIs for mobile platforms (independent of the operating system) and allows the integration of different protocols using various software drivers.

iRidium software solution enables controling of the iNELS home automation system as well as other 3rd parties devices (audio/video devices, media servers with full two way communication). iRidium offers a set of tools, scripts and customizable interfaces which enables the end user to create their own unique face of the aplication which is able to send and receive variabe status data vie EPSNET proto-

col. It is possible to control and monitor the status of individual luminaires, blinds, heating, etc. on devices such as iPad, iPhone, Mac, Android or Windows.

Your end customer gets a complete solution for controlling all devices in one application.

Commands & Feedbacks

Commands and feedback channels have to be assigned to graphic items to control equipment:

- A command is assigned to a graphic item.
- Feedback channel is assigned to a graphic item to display the variable state.
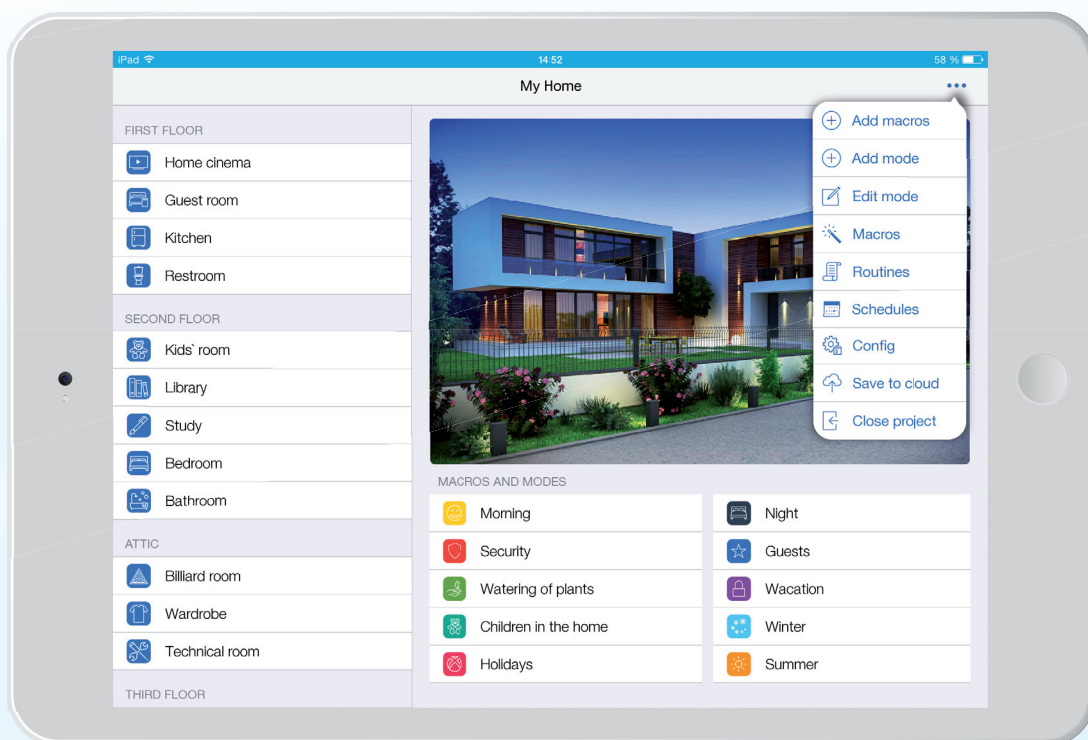
Find out more about the solution:

iRidium
Official site

iRidium
E-courses

iRidium
iNELS driver

Watch the VIDEO:

Official site: https://iridi.com/
E-courses: https://iridi.com/academy/
iNELS driver: https://dev.iridi.com/ElkoEp/en

Demonstrating the possibilities of iNELS RF Control

ATTACK®

Homester is packed with a state-of-the-art intelligent system where you can control all the features at a distance, from the comfort of the caravan seat, or from outside, just by using your smart phone and unique A1 Application. The application communicates through a special RF-WiFi SmartBox installed in the vehicle that receives the wifi command from your handy (PDA, tablet), converts the signal to a radio command, and through a special actuator turns on, or disables any selected function.

Using A1 App, you can unlock camper, tilt and close the entrance door with integrated stairs, control the lights throughout the vehicle, lift or lower the top floor, push or slide the washbasin with the table on the top floor, open the kitchen wall with extra desktop, or level your motorhome position using four Independently controlled stabilizing leg-supports. Other additional systems such as heating, air conditioning, power stations or various multimedia devices can be controlled by the application as well.

A1 App will monitor your wifi cameras, so you can watch the events around your camper on the screen of your mobile, tablet, or TV, as well as the interior of the top floor, during the roof launch, or even parking maneuvering. The application checks and informs your weather prediction, the indoor and outdoor sensors are sending the actual temperature datas several times per minute, various warning sensors monitors the gas leakage, water, or violent disturbance of the vehicle from outside. The A1 SmartBox is synchronized with the satelite wifi router (no local SIM card is needed), which provides a worldwide internet connection for the whole crew.

In case you do not use a smart phone, PDA, tablet, etc. or you own an older model without a touch screen, the A1 App provides the Pilot remote control with a color display. If you do not even have a mobile phone, and your Pilot remote control is lost or unavailable, every actuator controlling each devive in camper can be equipped with a separate wireless wall switch, that sticks wherever you want and can be used as a classic mechanical switch. Whatever the number of switches and their features are used, the A1 App still provides you with a status check on the display whether it is OFF or ON and its simultaneous remote controling.

Find out more about the solution:

A1 ATTACK
Official site

Official site: http://www.a1attack.com/homester/index-en.html

Come to see our innovations

ELEC EXPO 2019

Date: October 30 to November 02, 2019
Place: Casablanca, Morocco

The 13th edition of ELEC expo Electricity, Lighting, Electrical Engineering and Industrial Automation. ELEC EXPO is the largest electrical and energy exhibition in Morocco. ELKO EP will be one of the few Czech companies in Morocco to present its range of modular electronic devices and smart solutions, which we offer under our own brand iNELS.

VSK 2020

Date: February 04 to 07, 2020
Place: Utrecht, Nederland

Better, smarter, energy-efficient houses, buildings and industrial environments. This requires the know-how of professional installers. And they visit VSK. And since ELKO EP is one of the world leaders in the field of Building Management System (BMS), which includes comprehensive lighting, heating and energy management systems, we cannot miss this fair.


IN THE MIDDLE OF THE FUTURE

YOU CAN SEE IT ON VSK

LIGHT + BUILDING

Date: March 08 to 13 2020
Place: Frankfurt am Main, Germany

The world's leading trade fair for lighting and building services technology. Frankfurt am Main is the place where premieres are celebrated and trends are set. Experts can look forward to a wide range of ELKO EP components for bus and wireless electrical installations, IoT solutions for smart cities or agriculture, a comprehensive solution for existing and newly built hotels, or constantly improving software applications.
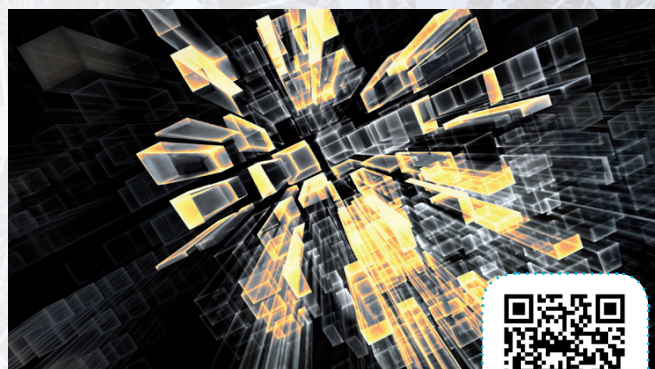
New references

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
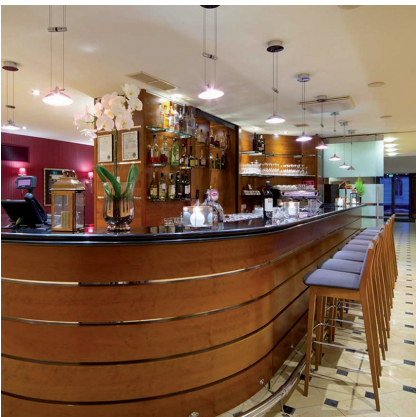
Radisson Ridzen Hotel
Riga, Latvia

- 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

Family house
Gabrovo, Bulgary

- fully equipped with iNELS Smart Home Control
- lighting, blinds, heating and ventilation control
- automatic garden lighting, irrigation, gutter and driveway defrosting

Residence Riverside Limassol
Germasogeia, Cyprus

- luxury residence uses iNELS Smart Home System
- built according to the AAA standard
- Smart Energy Management System

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

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
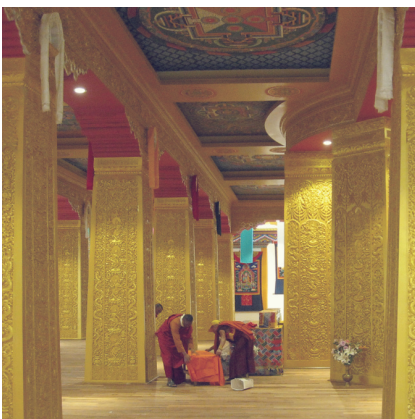
Buddha Palace
Thimphu, Bhutan

- lighting control of historical interior sections
- scenes light according to visitor presence
- security system
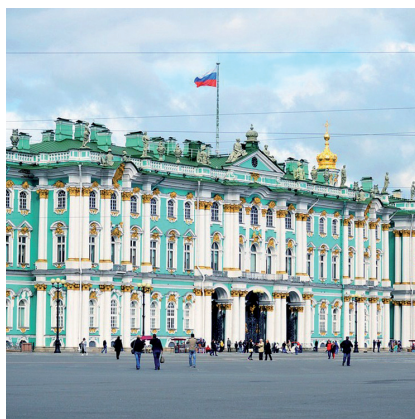
Museum Hermitage
St. Petersburg, Russia

- 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

New references

Mass Transit Railway
Hong Kong, China

- aplication of monitoring relays
- type of used relays: HRN-43N
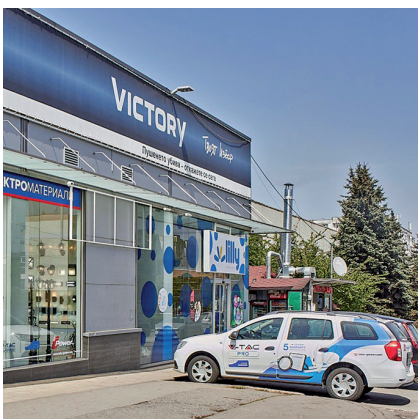- winning contract due to quality, accuracy and durability

Building XENEX
Žilina, Slovakia

- lighting control
- heating control, HVAC
- access control system, cameras, alarm

The center of living
Brno, Czech Republic

- 14 showrooms, 40 offices
- 200 dimming lights circuits
- DALI control of 45 circuits in the training room
- iNELS Multimedia

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
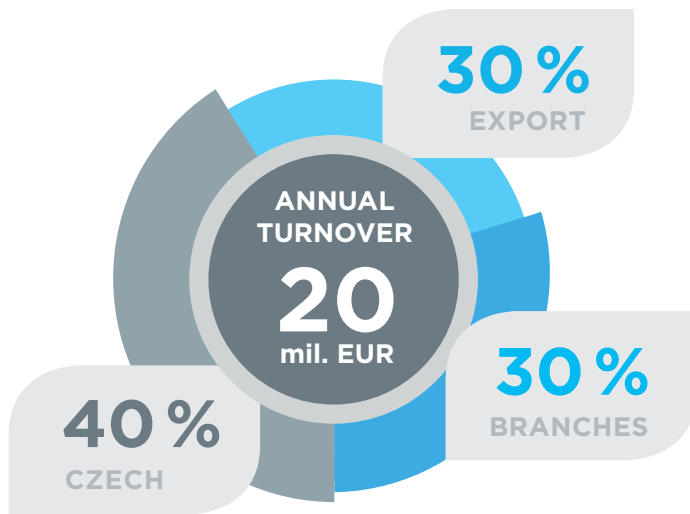- controlled via sensors and programmed scenarios

Pet shop
Slušovice, 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%

Notes

Facts and stats

30 %
EXPORT

ANNUAL TURNOVER
20
mil. EUR

40 %
CZECH

30 %
BRANCHES

13
BRANCHES OVER THE WORLDS

70
EXPORTING COUNTRIES

274
EMPLOYEES

10 000
iNELS INSTALLATION

12 000 000
MANUFACTURED PRODUCTS

2nd position
in Europe

WE ARE

DEVELOPERS

In the new R&D center, more than 30 engineers develop new products and extend the functionality of existing products

PRODUCERS

modern antistatic spaces, 2x fully automated SMD production lines, 2 shift operations.

SUPPORT

24 hours / 7 days / 360 days we not only provide technical support but also logistics.

SELLERS

personal access to more than 70 sales representatives in ELKO EP Holding provides impeccable services and superior products at an affordable price.
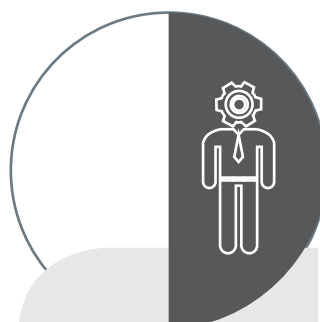
Others just resell

HOWEVER, WE DEVELOP AND MANUFACTURE PRODUCTS OURSELVES!

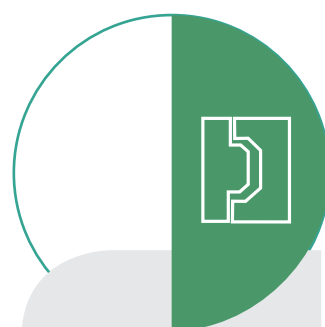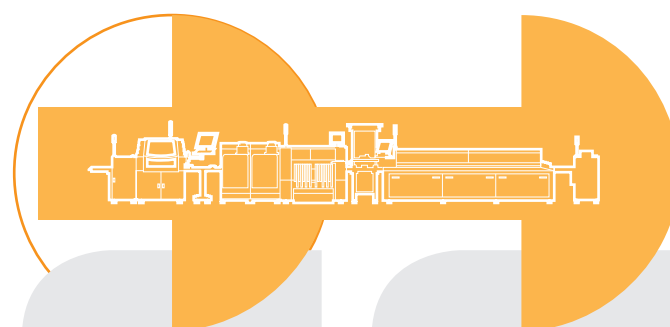**26 years**
on the market

15 years
ISO certification

40
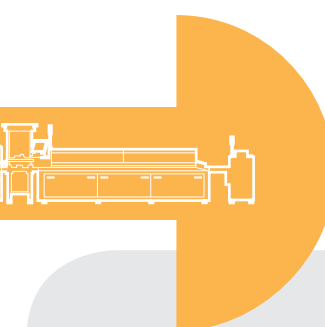developers

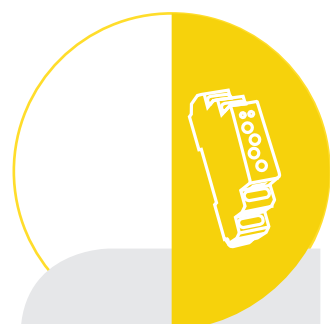**274**
employees

2000 m²
manufacturing space

200
proprietary plastic mods

2
SMD lines

1 mil.
components per day
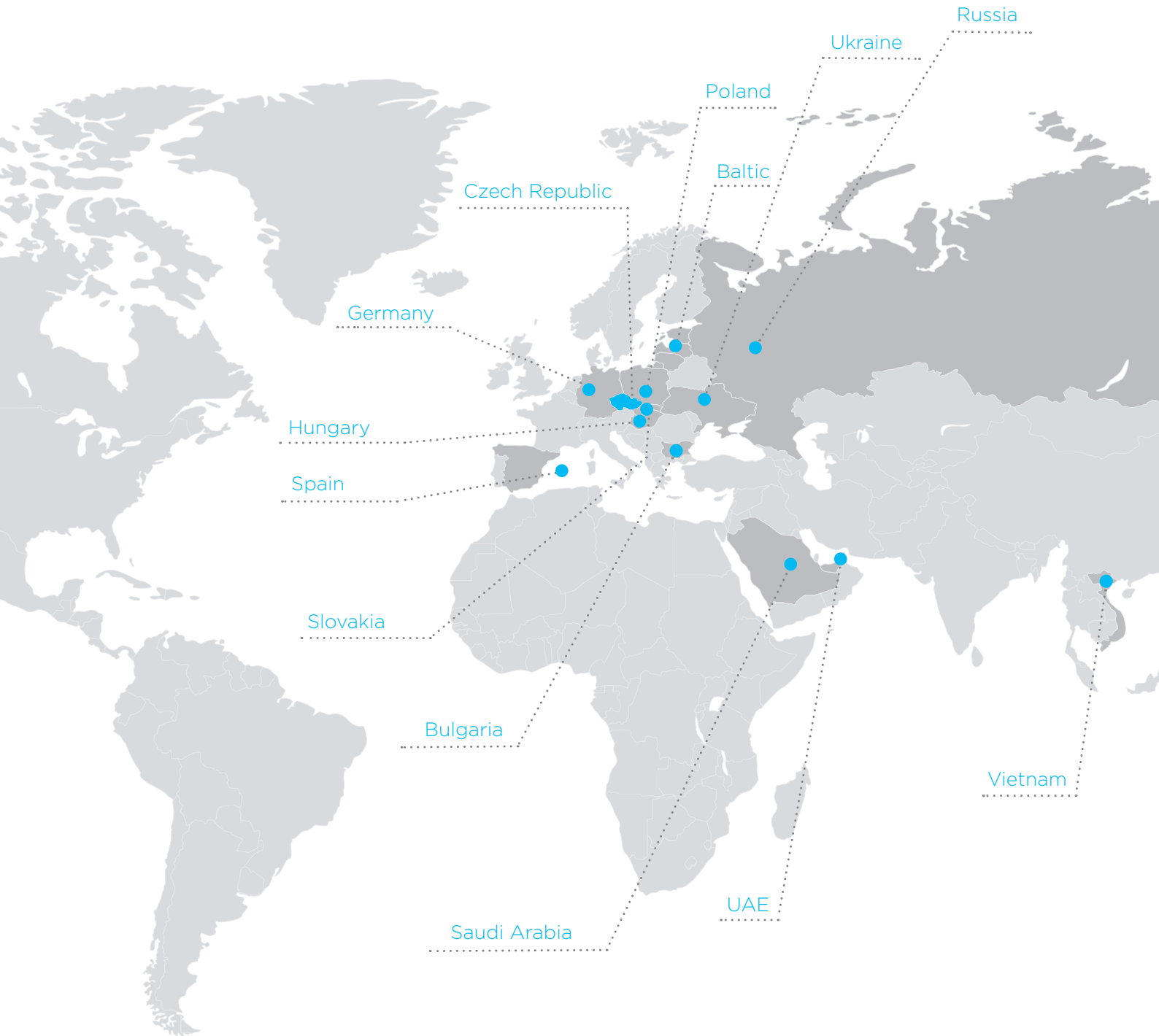
600 000
products per year

2 000 m²
finalization and dispatch

2000
warehousing spaces

2
printing lasers

ELKO EP Holding

Russia

Ukraine

Poland

Baltic

Czech Republic

Germany

Hungary

Spain

Slovakia

Bulgaria

Vietnam

UAE

Saudi Arabia

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