Highlights 2019



News from iNELS & ELKO EP World.

www.elkoep.com



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Smart City

Effective combination of elements into one unit

We offer not only the products but also the technology that are the basis of every Smart City. Whether smart buildings, urban furniture, air condition monitoring or weather monitoring and environmental aspects (landslides, water levels, shocks). Part of the Smart City platform is the effective management and permanent supervision of all elements in the SC location.

... see page **6-7**



iRidium mobile

Create app as you wish

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).

... see page 16



Smart Pole

as the basic pillar of a smart city

The poles of public lighting, of which there are a lot in every city, can also carry the necessary technology that are required in the city: chargers, communicators, air quality, emergency button, touch panel, WiFi.

... see page **10-13**



iNELS Digital key

Unlock your room via mobile

Inels Digital Key app provide you now possibility of open your door via your smartphone with NFC. App emulate RFID card – then you can use for door unlocking both way: card and/or phone. Main feature is entrance your room without reception check-in (on-line checked and go to the room directly).

... see page 18-19









iNELS Air as different IoT ways

Responding to the dynamically developing IoT network

The Internet of Things, or "IoT", represents a concept of connecting appliances, machines, scanners, etc., into an existing Internet structure. This structure uses specially designed networks for transferring small volumes of data with low energy consumption over great distances.

... see page **8-9**



New products

iNELS BUS, iNELS Air, iNELS RF Control, Relays

Releasing of new products increase functionality, simplicity and effectivity of your installations. Time clocks set via app, compatibility with Google or Amazanon, compact central unit for BUS installation or Smart pole as a highlight for smart city is proof of our progress in the technological product development.

... see page **20-22**

Products Portfolio

Wireless electroinstallation



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

Wired electroinstallation



The BUS system offers a unique solution for new installations (refurbishment) 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.

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 - loT 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.

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.

Smart Pole



The poles of public lighting, of which there are a lot in every city, can also carry the necessary technology that are required in the city: chargers, communicators, air quality, info-panels, radio, WiFi.

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.

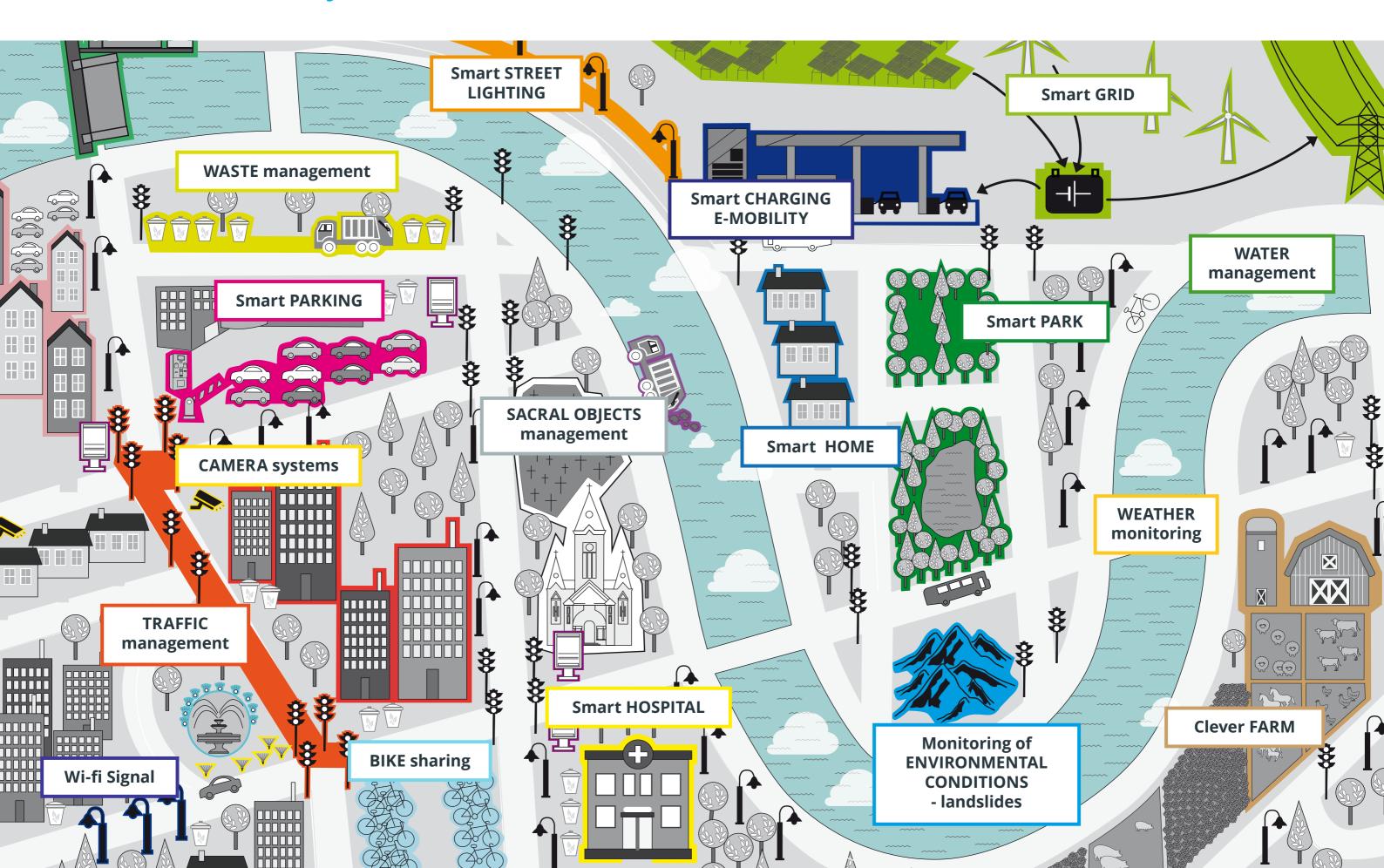
Building management system



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.

iNELS Smart City





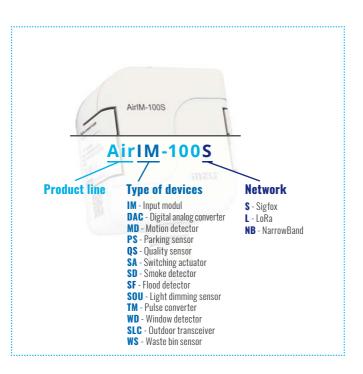


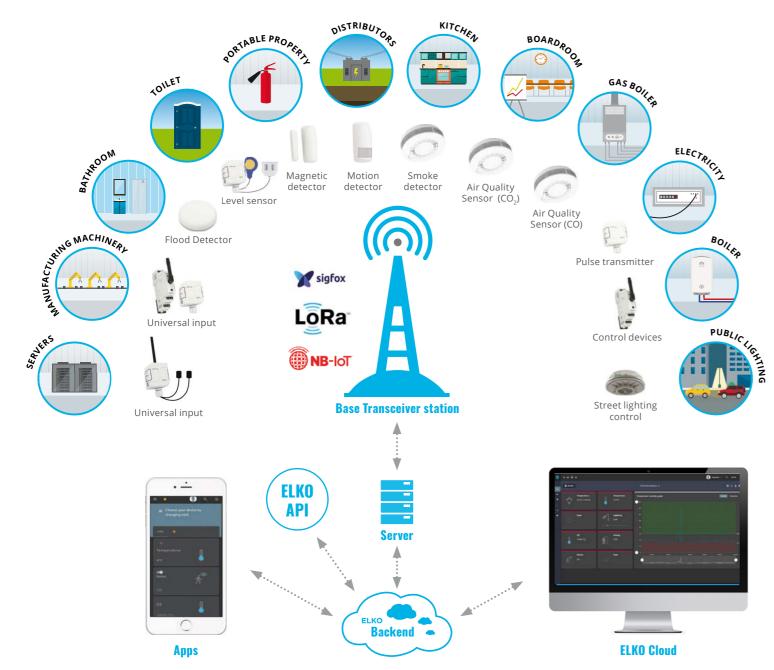
8

iNELS Air was designed in response to the dynamically developing network for IoT (Internet of Things). The IoT wireless communications category describes the Low Power Wide Area (LPWA). This technology is designed to provide full coverage even inside buildings, with energy-saving and low-cost operation of individual devices.

The product group includes sensors for communication on the Sigfox, LoRa and NB-IoT protocol. Linking sensors with ELKO Cloud and IFTTT (If This Then That) is ideal for a wide range of applications.













	Universal input	AirIM-100S	AirlM-100L	AirIM-100NB
	Universal input (for DIN rail)	AirIM-100S/M	AirlM-100L/M	AirIM-100NB/M
	Pulse converter	AirTM-100S	AirTM-100L	AirTM-100NB
	Motion detector	AirMD-100S	AirMD-100L	AirMD-100NB
	Magnetic detector (indoor)	AirWD-100S	AirWD-100L	AirWD-100NB
	Magnetic detector (outdoor)	AirWD-101S	AirSF-101L	AirWD-101NB
	Flood detector	AirSF-100S	AirSF-100L	AirSF-100NB
0	Smoke detector	AirSD-100S	AirSD-100L	AirSD-100NB
0	Air quality sensor (CO2)	AirQS-100S	AirQS-100L	AirQS-100NB
0	Air quality sensor (CO)	AirQS-101S	AirQS-101L	AirQS-101NB
7-1	Twilight sensor	AirSOU-100S	AirSOU-100L	AirSOU-100NB
1	Street light controller (DALI)	-	AirSLC-100L/DALI	AirSLC-100NB/DALI
Sullip (00)	Street light controller (DALI) - LUMAWISE plug	-	AirSLC-100L/LWES/DALI	AirSLC-100NB/LWES/DALI
Sulfar (00)	Street light controller (0-10V) - LUMAWISE plug	-	AirSLC-100L/LWES/0-10	AirSLC-100NB/LWES/0-10
	Street light controller (DALI) - NEMA socket	-	AirSLC-100L/NEMA/DALI	AirSLC-100NB/NEMA/DALI
17/10	Street light controller (0-10V) - NEMA socket	-	AirSLC-100L/NEMA/0-10	AirSLC-100NB/NEMA/0-10
	Parking sensor	AirPS-100S	AirPS-100L	AirPS-100NB
	Waste bin sensor	AirWS-100S	AirWS-100L	AirWS-100NB
	OEM module	-	LoRa Modul OEM	-

Smart pole





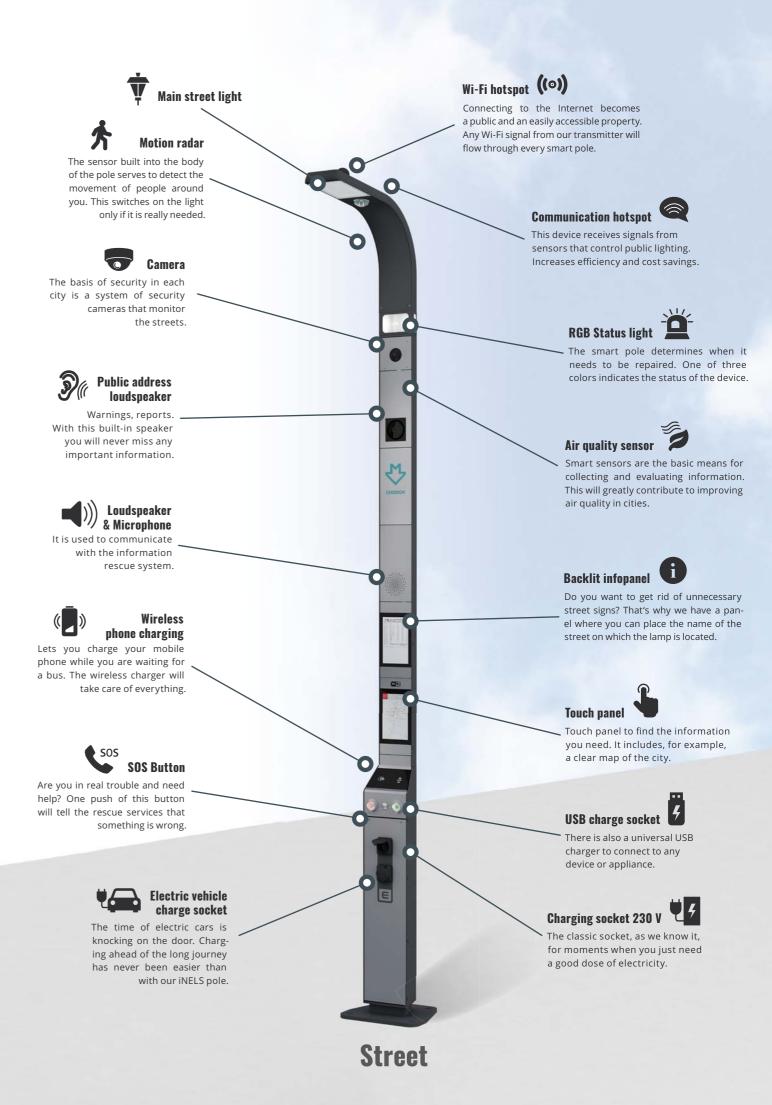


As the basic pillar of a smart city

In every big city we can find thousands today, sometimes even tens of thousands of public lighting poles. We can use this dense network to install sensors or security cameras, and thus increase security for the population. We gain information about the number of people or vehicles, we can eval- life in the city. uate the air quality or the noise level, inform the inhabitants

about the status of transport and parking places. Poles can also be used for Wi-Fi signals or recharging stations. So we have absolutely unlimited possibilities to work with smart lighting, and it's up to the investor to improve the quality of



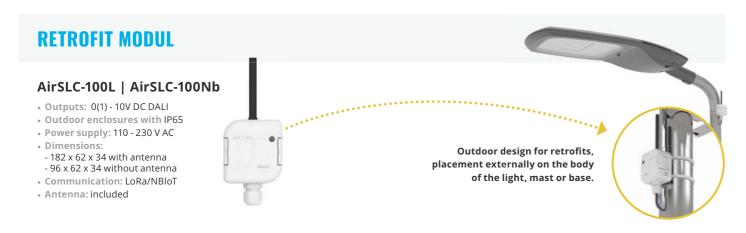


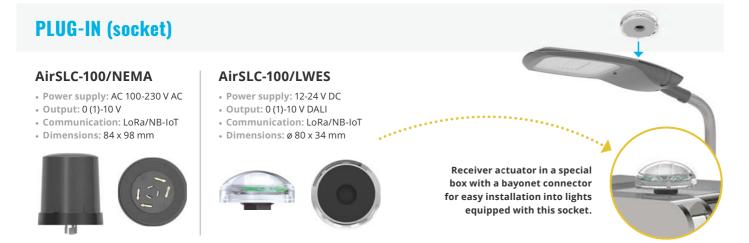
SSL controllers

To make smart lighting work properlly, the light fitting must be equipped with a communication module. Modules differ in design, installation, and communication network, but their function is always the same. For communication, wireless LPWAN networks, especially **LoRa** and **NB-IoT**, should be used. They allow **two-way** communication - they

• Antenna: external ULF or SMA connector, internal bent parts of the product

can not only control but also receive information from the light fittings. This is conditional on the availability of a given network with sufficient signal at the point where the light fittings are located. Signal quality can be determined by a special signal strength indicator.





OEM (built-in) - Embedded **LoRaWAN Modul OEM** • Connection: soldering pins 5-24VDC, after breaking source parts only stabilized 3V3 / 140mAh Communication: - SPI 1x - Analog pins 8x (12-bit) - USART 1x - I / O digital pins 29x PCB board for direct - 19.5 x 46.1 (33.8)* x 4 mm with ULF connector integration into the power - 119.5 x 57 (44.7)*x 7 mm with SMA connector supply board. - 19.5 x 46.1 (33,8)* x 21 mm with internal antenna * dimension after breaking the source section Gain: + 2.12 dB · Communication: LoRA 868Mhz

Smart street lighting platform

We believe that each Smart city should have only one control platform. It allows not only the collection and evaluation of data, but also the control of all the elements of the smart city. That's why with our smart lighting, you'll also get a light control module.

All smart street lights are connected to Smart city platform wirelessly. It gives you an easy way how to control and monitor all the lights in the city.

USER FRIENDLY PLATFORM

on your computer or laptop

• EFFECTIVE REPORTING TOOLS

Graphs, data and saving analysis

PREDEFINED SETTINGS

for easy and smart lighting and energy savings

ADVANCED DIMMING

scheduled dimming

SECURITY

with proper and safe authorization

GPS DETECTION

faster way how to find a defect on the lights

• COST REDUCTIONS

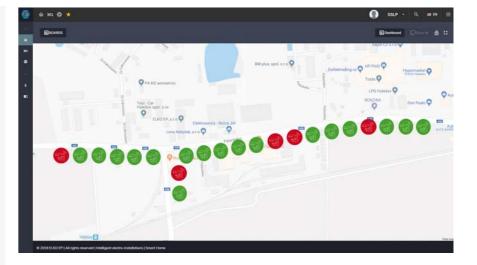
with new working management

READY FOR IoT

it is connectively ready

WIRELESS SOLUTION

easy to upgrade whenever you want





System cooperation:

- changes in intensity occurrences
- plan switching events occurrences
- adding / changing / removing the lamp occurrences
- emergency situations
- 3rd parties commands

G Reporting:

- consumption reporting
- operation reporting
- disorder reporting
- service state reporting

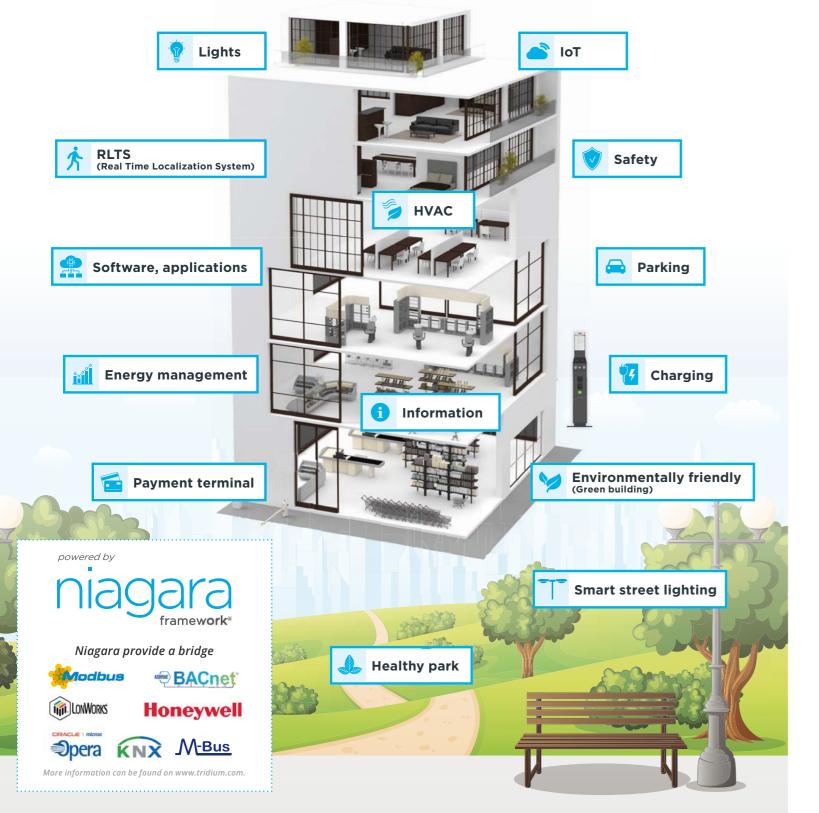
(+) Function:

- displayed on the map according to the light
- monitoring according to operating status
- individual and group control
- graphs and statistics according to lighting, consumption, lifetime

Building management system

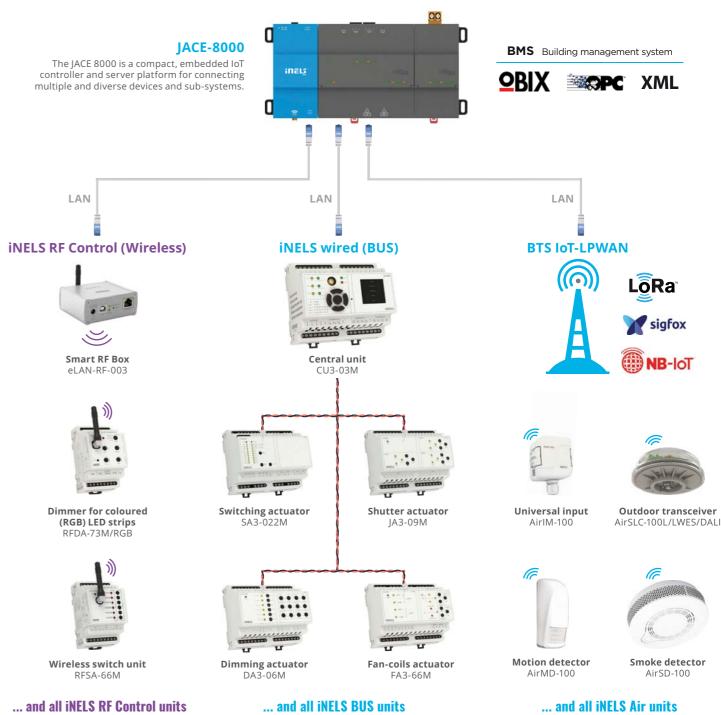
BMS is a software environment in which it is possible to create mutual relations, visualize the activity of buildings technologies, collect statistical data and evaluate them. In this way you can find optimal building settings to ensure user comfort while increasing the energy performance of the building. It integrates all the technologies in the building and visualizes them for the operators and administrators.

iNELS is fully compatible with BMS (Building Management System) Niagara platform, which provides a convenient and efficient user interface. There are controllers for the actual control of all processes in the building. Supervisor licenses for the deployment on the operator's computer are used to supervise the operation of the system, receiving alarms and notifications and evaluation of historical data and graphs.









iNELS BUS for iRidium mobile

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 protocol. 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.



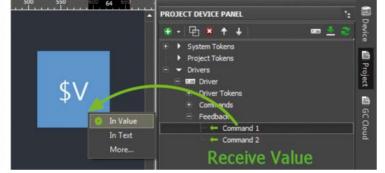


Commands & Feedbacks

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.





ELKO Cloud

Smart Farm

The overview map (on Google Maps) is ideal for farmers to view the sensors in the desired locations. The colour determines the current status (as a traffic light: red, orange, green) so that the critical state and location can be detected at a glance. After you place a device in a pop-up, the status window appears, and a side widget is displayed after the click, which displays the detailed parameters. Zoom-out/in maps group devices into groups; the number specifies the number of hidden sensors in the group.



More in the catalogue: **Agriculture**



Energy management

The Cloud can display measured values in a given interval in dynamic charts. The chart axes can be set as needed. Instantaneous power consumption is displayed in tiles, measured units and converted to currency. Directly on the chart a threshold can be set for each measured value and the action to be taken in the case of excess (overvalue) or shortfall (undervalue). You can send an SMS notification, email or directly instruct the switch actuator (on the same network or backend supported iNELS RF & BUS actuators).



More in the catalogue: **Energy management**



Weather

On the Weather tab you can get the weather forecast for a given location (from the OpenWeather portal) as well as the currently measured values from the multiweather station AirMETEO (temperature, humidity, UV sensor, light sensor, wind speed and vane, rain collector). These values are transferred using the converter to the backend of the server. Above each value, you can once again set the threshhold and call for a notification or action. This is ideally usable in the various fields of Agriculture.



Hospitality Solution

Catalogue Hospitality solution: elkoep.com/**download**

Control your LARA by side wireless controller

Integrated wireless modul allows you control LARA by wireless iNELS RF Control - RFWB-20/40 or Keychain. Its usefull while you are in the bath, swiming pool, unable people on the bed or only if you need "bigger buttons" even you don't like APP or touch pads on LARA is too small for you...

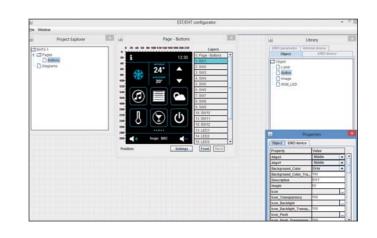




RFWB-20/40

Customize your EHT screen

Customize ELKO Hotel Touch unit directly in iDM3 software. New EHT3 configurator allows optional settings of all the screens on the device. For each touch panel is possible to set the screen, key matrix, types of controlled devices and the icon for as you want. Everything at customer's request.





Unlock your Hotel or AIRBNB room via mobile

Inels Digital Key app provide you now possibility of open your door via your smartphone with NFC. App emulate RFID card - then you can use for door unlocking both way: card and/or phone. Main feature is entrance your room without reception check-in (on-line checked and go to the room directly).

Glass Swith Button with two options

You can choose from the 2 options of glass panels: 2, 4 and 6 buttons with illuminated symbols and optional text or 4, 6 or 8 buttons without symbols. Both are available in Black and White glass colour with accoustic and vibration feedback while pressing.





6 buttons with symbols

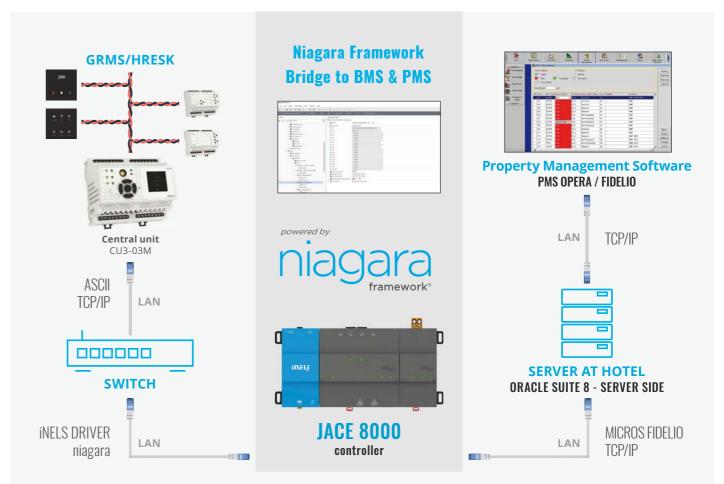
Niagara Framework = bridge to BMS & PMS

Building management system Niagara (to which iNELS GRMS & HRESK can be integrated) provides you a possibility to be controlled using Property Management software solution provided by Oracle (Opera or Fidelio) as other communication protocols such as BACnet, M-Bus, ModBus, LONWORKS, KNX, etc. All the control including history ((graphical visualization), alarms, access to database and other features can be visualized by HTML5 or you can use Microsf Fidelio IP driver to stream data directly to PMS Opera/Fidelio server communicating with client running at reception. All the configuration and programming can be handled in Niagara 4 Developer (Workbench).

8 buttons

Control your room via TV

App for Samsung Hospitality TV allow you control main features of room: lights, shutters, temperature, make up room, don't disturb - direct way on flooplan or dedicated button of TV remote controller.





INELS Air **NEW PRODUCTS**







Hotel Guest Room Controller Bundle

CU3-04M

· Control unit is designed to enable management of all technology that may be in guest rooms, it is designed to provide efficiency comfort while running with maximum effi ciency throughout the building.

By connecting to BMS, you can:

- Monitor all states of all system elements from one location.
- · Connect iNELS with other protocols.
- · Create logic functions between individual control units.
- Optimize the performance of HVAC systems



External Master

Master MI3-02M / ETH

- External master MI3-02M / ETH allows expansion of the number of connected peripheral units to the central unit iNELS3 CU3-01M, CU3-02M CU3-03M or two further branches of installation BUS (i.e. about 2 x 32 peripheral units).
- Part of the External Master MI3-02M / ETH is also a bus separator (BPS3), which supplies the two BUS connected to this master with 2x1A current.
- The unit can communicate via the EBM system bus with the CU3-01M, CU3-02M or CU3-03M (FTH) Ethernet connection.



Shutter actuator (18 channels)

JA3-018M

- Is an unit designed for control of roller shutters, blinds, awnings, garage doors, entrance gates, etc.
- · Controls electric motors that operate in two directions and have a built-in limit switch.
- Output: 9x switch 4 A / AC15.
- Voltage 250 V AC, 24 V DC.



LoRa Gateway with LoRa Network Server

GTW-LNS

- Device for creating your own LoRa network.
- The LoRa Gateway Server can be assigned to thousands of IoT terminal devices communicating on this network.
- The LoRa Gateway has the LoRa receiver / transmitter function and the server, receives / transmits messages Lora and processes it on your own server.
- The antenna provides radiation in all directions.

INELS RF Control

· The gateway is also designed for outdoor use.



Waste bin senzor

AirWS-100S/100L/100NB

- . The detector informs about the fill volume condition of the container, the waste container, may trigger a requirement to empty it. It also informs you of the actual temperature in the scanning area.
- It has a built-in sensor for opening the lid or for tipping over the waste container.
- · With wireless technology and its compactness, the device can be used in a variety of applications.
- The front panel LEDs indicate the status of each output.



Flood detector

AirSF-100S/100L/100NB

- Is an expansion module for the CU3-04M central unit, designed primarily for controlling hotel rooms.
- Equipped with 22 relay outputs (of which 1x changeover contact - roller blinds, blinds).
- Switching lighting and socket circuits (6A and 10A relay) with common potential at the "COMx" terminal.
- The front panel LEDs indicate the status of each output.

elkoep.com/**download**

Catalogue wireless electroinstallation:



Dimming actuator (6 channels)

DA3-06M

- Is a universal dimmer six-channel actuator to control the brightness of dimmable ESL, LED and RLC light sources with 230V supply.
- Maximum possible load is 150 VA for each channel.
- The actuator is equipped with an electronic overcurrent and thermal protection that shuts off the output during overload, short circuit, overheating
- · You can manually control the output by using the front panel control buttons.



Fan-Coils Control actuator

FA3-612M

- Is a unit (actuator) designed to control fan coil units using analogue / digital inputs and analog / relay outputs.
- · Analog inputs for temperature, voltage or current measurement.
- · Buttons for closing / opening the valve, fan and relay for heating.
- The front panel LEDs indicate the status of each output.



Switching actuator (22 fold)

SA3-022M

- Is an expansion module for the CU3-04M central unit, designed primarily for controlling hotel rooms.
- · Equipped with 22 relay outputs (of which 1x changeover contact – roller blinds, blinds).
- Switching lighting and socket circuits (6A and 10A relay) with common potential at the "COMx" terminal.
- The front panel LEDs indicate the status of each output.



NEW PRODUCTS

Switch unit for shutters RFIA-32B

- · Advantage is connection with existing shutter switch in installation. You can combine traditional control with wirelles.
- · Wireless switching element for blinds, barriers, gates, curtains
- Short press of controller enables blind slats tilting, long press - pull up (or let down) the shutters to the end position.
- Switching unit can be controlled by up to 25 channels (1 channel represents one button on the controller).



Wireless switch unit RFSAI-62B

- Switching unit with 2 output channels serves to control home appliances and lighting circuits.
- Switching unit can be controlled by up to 25 channels (1 channel represents one button on the controller).
- It is possible to combine with Controllers or System units iNELS RF Control.
- Function: Button, pulsion relay, time function delayed start and return with time settings 2s - 60 min.



Wireless dimmer switch RFWD-71

LED – LED light sources (230 V)

- · Wireless glass designed switch with integrated universal dimming component which serves to regulate light sources:
- R classic lamps
- L halogen lamps with wound transformer
- **C** halogen lamps with electronic transformer **ESL** – dimmable energy efficient fluorescent lamps
- 4 channel switch version allows you to control the integrated dimmer as well as other components of the installation



APPS FOR ALL... iNELS Home Control

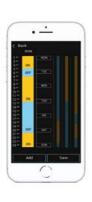


Digital relay

CRM-100

- The brand new multifunction digital relay CRM-100, which belongs to the time relays category, finds its use in controlling the diverse devices of your household.
- 17 functions 4 time functions controlled by the supply voltage and 13 functions controlled by the control contact.
- Thanks to the digital display and settings you have the time set without any mechanical tolerance.
- Time range 0.1 s 999 hours.





Digital switch timer

SHT-7

- Digital switch timer with day and year program and setting via smartphone supporting NFC transfer.
- Timer switch switching based on real time in day and week mode.
- Offline setting of programs in the application.
- Backup / insertion into the phone memory for transfer to the next timer switch.
- Two-channel design, both channels are programmable independently of the other



Multifunction time relay

CRM-91H

- Multifunction time relay can be used for electrical appliances, control of lights, heating, motors, pumps and fans
- 10 functions, 10 time ranges, 1x output 16A changeover/SPDT, multivoltage or 230V supply
- 5 time functions controlled by supply voltage
- 4 time functions controlled by control input
- 1 function of latching relay

New range of monitoring relays

You cannot simply stop progress, so even we in ELKO EP have to move forward constantly with our products. We are now proud to introduce to you more than 30 new types of monitoring relays. These are an indispensable part of each industrial or commercial project and even in every household.

7 reasons, why you should chose monitoring relays from ELKO EP:

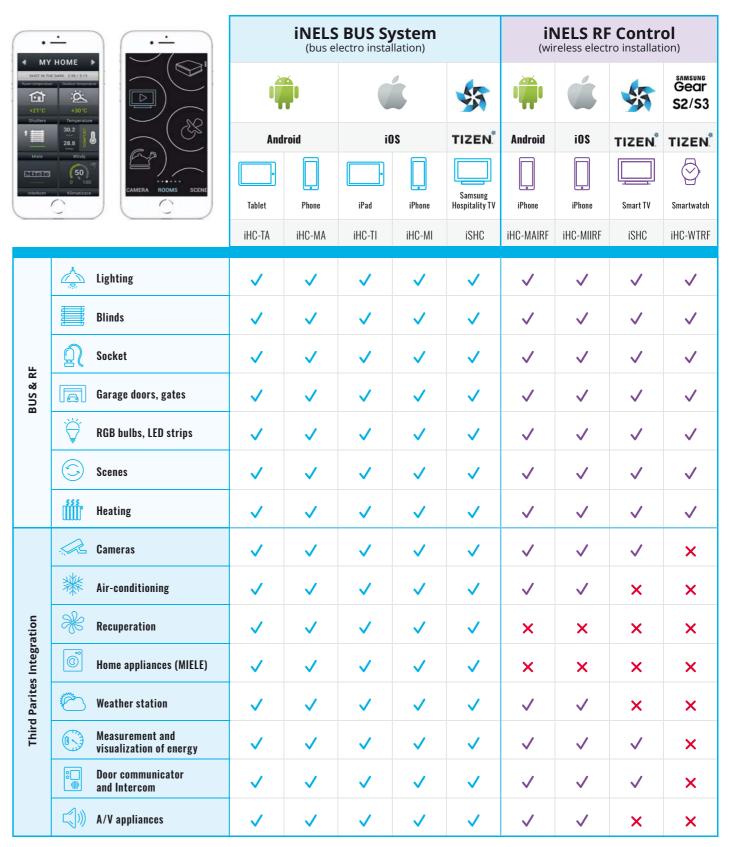
- Brand new improved design
- Focus on industrial applications
- Bigger range of monitored current / voltage relays
- Increased measurement accuracy thanks to the newest components. 2%
- Suitable for 50 / 60 Hz networks
- Extended power supply 24-240V AC / DC
- Auxiliary power supply

Catalogue monitoring: elkoep.com/**download**

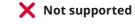


New range of monitoring relays covers control of:

- Voltage relays
- Current relays
- Power factor relays
- Frequency relays
- Reverse power relays
- Speed sensing
- Synchro-check relays
- Synchro check.
- Ground fault relays
- Level switches







iNELS Home Control applications are FREE to download at and are supported by Android OS 4.2 or later and iOS8 or later.

References







Kempinski Hotel Almaty / Kazakhstan

- 5-star hotel in Almaty Kazakhstan
- lights are controlled in public areas
- more than 15 000 lighting are control through the DALI protocol
- setup scenes



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



Jamie's Italian Restaurant

Budapest / Hungary

- iNELS BUS System is contolling lighting and terrace-cooling/heating in the restaurant
- additional switched lighting circuits are controlled by 5 actuators



Meydan Dubai/UAE

- · lighting control
- · crystal chandelier
- starry night sky control
- · audio/video system



Alexandrovskiy Odessa / Ukraine

- 25 rooms with fully automation and dispetching
- integration with Samsung central conditioning



Building XENEX Žilina / Slovakia

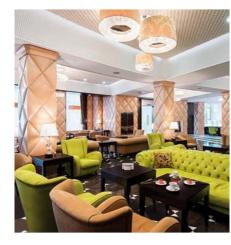
- · lighting control
- heating control, HVAC
- · access control system, cameras, alarm



Best Western Premier

Brno/Czech Republic

- 4-star Hotel Internacional in Brno
- lighting scenes in the restaurant, reception, wine shop and exterior
- · app available for any guest



Three sons and daughter

Skhidnicya / Ukraine

- 5-star hotel
- 179 fully automated rooms powered by iNELS
- · automation of lighting, heating, cardreaders
- there are SA3-012M, IM3-140M and WSB3-40 in every room



Living Showroom

Prague / Czech Republic

- · designed residential showroom
- · control units are part of the interior
- stage connection with projection and visitor needs



Magyar State Opera

Budapest / Hungary

- Every additional lighting source is also controlled by iNELS system. The devices here are controlled by RF Touch.
- For switching the RFSA-11B and RFSA-66M is used.



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



Lord's Palace

Kyrenia / Cyprus

- 5-star hotel
- lightig control in the restaurant, conference hall, parking, wellness and corridors

www.inels.com www.inels.com

References



FACTS AND STATS & ELKO EP Holding







Buddha Palace

Bhutan, India

- lighting control of historical interior sections
- scenes light according to visitor presence
- security system

Hyundai

Nošovice, Czech Republic

- 736 pcs LED High Bay within retrofitted lighting
- central control DALI ballast via EDMC
- control of each zone from the touch panel via app

Cinema Corvin

Budapest / Hungary

- 6 movie theaters
- DALI control LED matrix (800 lighting fi xtures)
- projection scenes
- heating and A/C control







Hotel Merit Premium

Kyrenia, Cyprus

- all rooms are equipped with smart electro-installation
- this is controlled by RFSA units that switch set modes
- when designing a system, the emphasis was placed on the central function (MASTER switch)

Showroom Smart Light

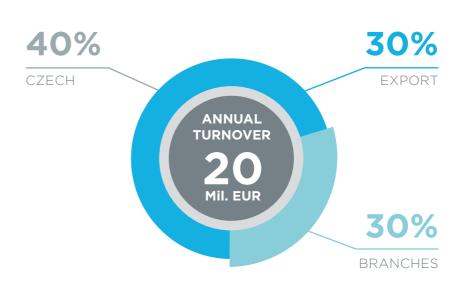
Bratislava, Slovakia

- the entire building, including ware house and exterior spaces, is controlled by iNELS intelligent electro-installation
- iNELS system controls:
- 15 switching light circuits,
- 5 dimmable light circuits,
- LED RGB light circuits, etc.

Shop Dior

Prague / Czech Republic

- hardware: RF Control
- channel multifunction dimming actuator RFDA-71B
- single channel actuator with analog output RFDAC-71B
- RF remote control Pilot





BRANCHES
OVER THE WORLD

70 EXPORTING COUNTRIES

240 EMPLOYEES

5000 inels installation

12 000 000
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