PRODUCT OVERVIEW

Relays
iNELS RF Wireless electroinstallation
iNELS BUS Wired electroinstallation
Multimedia
iNELS Air – IoT devices
Switches and sockets

www.elkoep.com

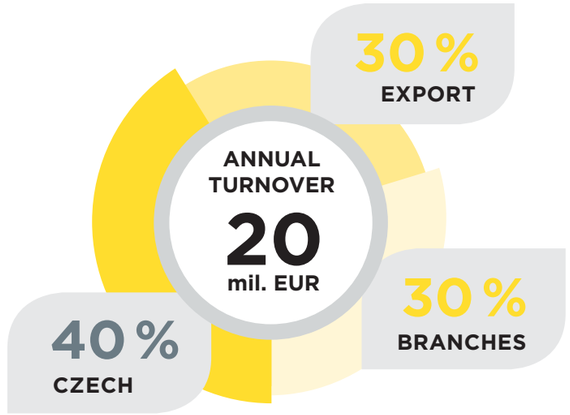
ELKO EP

We are traditional, innovative and purely Czech development manufacturer of electronic devices and we have been your partner in the field of electroinstallations for 26 years.

ELKO EP employs about 330 people, exports its products to more than seventy countries, and has representatives in thirteen foreign branches. Company of the Year of the Zlín Region, Visionary of the Year, Global Exporter of the Year, Participation in the Czech TOP 100, these are just some of the awards received. Still, we are not finnished. We are constantly striving to move forward in the field of innovation and development. That's our primary concern.

Millions of relays, thousands of satisfied customers, hundreds of our own employees, twenty six years of research, development and production, thirteen foreign branches, one company. ELKO EP, innovative- a purely Czech company based in Holešov, where development, production, logistics, service and support go hand in hand. We primarily focus on developing and manufacturing systems for building automation in the residential, commercial and industrial sector, a wide range of Smart city facilities and the so-called Internet of Things (IoT).

Facts and stats



330
EMPLOYEES

10 000
iNELS INSTALLATION

12 000 000
MANUFACTURED PRODUCTS

13
BRANCHES OVER THE WORLDS

70
EXPORTING COUNTRIES

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.

Product lines ELKO EP

Timers/Relays www.elkoep.com/relay-modular-electronic-devices
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, dimmers, thermostats, power supplies units, control and signalling devices, GSM gates, etc.

Protection relays for industry www.elkoep.com/protection-monitor-relay
Every household, every object and every machine needs a monitoring relay. There are several reasons why, overvoltage, under voltage, phase failure, asymmetry, frequency, or power factor.

iNELS Air – IoT devices www.elkoep.com/iot-products
The new iNELS Air product line responds to the dynamically developing network IoT (Internet of Things). These networks enable devices to communicate safely, over long distances and are optimized to minimize power consumption. The product group includes sensors for communication on the Sigfox, LoRa and NB-IoT protocol.

Wireless electroinstallation (RF) www.elkoep.com/wireless-rf-control
A unique wireless control system providing you perfect control over your home! The RF Control system enables you to control functions such as heating, lighting, electrical appliances and window shutters, all with a single touch. No wall cutting, fast and easy installation, exclusive design of wireless wall switch buttons and other components.

Wired electroinstallation (BUS) **www.elkoep.com/inels-bus-system**
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 www.elkoep.com/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.

Wireless Retrofit Hotel (HRESK) **www.elkoep.com/hotel-hresk**
Hotel Room Energy Saving Kit - Solutions for hotel rooms based on wireless technology is designed to function in existing hotels. It is possible to simply elevate the existing electrical installation to a higher level without long-lasting construction modifications.

Hospitality Hotel (GRMS) **www.elkoep.com/inels-hospitality**
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 **www.elkoep.com/bms**
Building Management System is a comprehensive solution for monitoring, and controlling even the most complex of building systems. You can monitor everything on your computer monitor or tablet in the comfort of reception or office.

Lighting control **www.elkoep.com/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 www.elkoep.com/av-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 www.elkoep.com/logus90-products
We offer you exclusive switches, sockets and accessories in a standard plastic or metallic design. However, there are also charming luxury frames from purely natural materials such as genuine wood, metal, granite or hardened glass. Be especial!

Lighting sources www.elkoep.com/lighting-sources
Are you looking for a bulb in your chandelier? In this section you will find among the most common types of bulbs also LED strips and other LED sources, power transformers and installation accessories such as ALU profiles, diffusers.

Product overview

CRM-100

The brand new CRM-100 **digital multi-function time relay** is used, for example, to control lighting in your home, but it can also be used to control motors or pumps. Thanks to the digital setting and display time, the need for mechanical adjustment of the devices is avoided, resulting in maximum accuracy. This versatile power relay includes the 17 most used functions for each application. If you have it at your fingertips, it will replace many other types which you needn't look for or buy.

SHT-7

Near Field Communication is the way of wireless communication of two devices within a short distance of a few centimeters. A typical example of NFC is credit card payment, but now our ability to control your timing clock is also an option. You can also conveniently set it up using a smartphone and transfer these set modes to other devices, clone them or back them up.

NEW

Protection relays for industry

New types feature the ability to measure with accuracy of approximately 2%, which distinguishes them from cheap competitors and increases reliability. The relay boasts a lower power output of only 2.5 watts and the ability to monitor both alternating voltage and non-sinusoidal waveforms. They are suitable for 50 Hz and 60 Hz, which is especially appreciated by customers, whose products travels overseas. Thanks to the AT Mega 48P processor we can customize the parameters of the product. Inside the product there are no plug connections, so they are mechanically very resistant to shocks as well.

LARA configurator

At each step of the configurator, you choose, for example, the installation method, the size or design of the frame (e.g. glass, wood, metal), the wall colour/type and the type of speakers (wall, ceiling, ceiling ...). The result delivers an overview and estimated total cost. Here you can send it by e-mail or order directly.

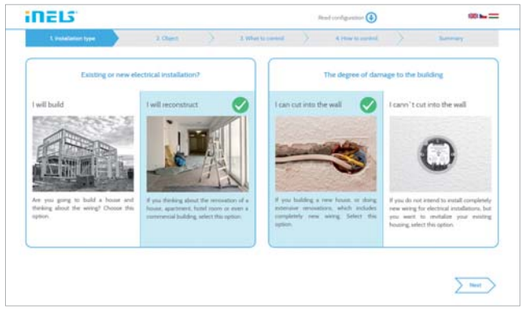
lara.inels.com

Interactive quote

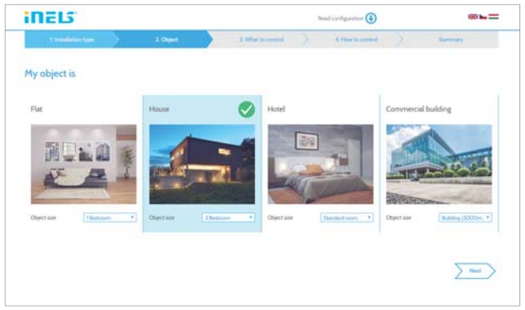
Just 4 steps in the configurator:

elkoep.inels.com

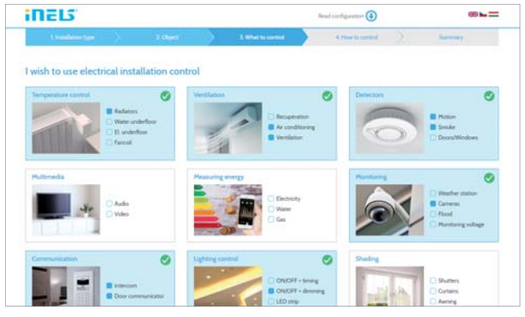
1. Installation type



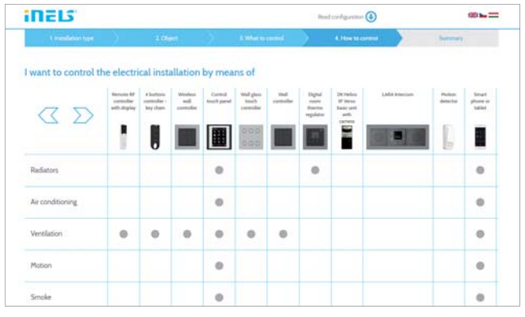
2. Object



3. What to control



4. How to control



Modular electronic devices

For modern electrical installations

www.elkoep.com

relay

TIME RELAYS

Single-function time relay

Single-function time relay

Delay OFF without supply voltage

Doublestage delay unit

Delay ON star/delta

Asymmetric cycler

Technical parameters	CRM-81J	CRM-83J	CRM-82TO	SJR-2	CRM-2T	CRM-2H
Number of functions	1	1	2	1	1	2
Time range	0.1 s - 10 h	0.1 s - 10 h	0.1 s - 10 min. (4 ranges)	0.1 s - 10 days (10 ranges)	0.1 s - 100 days (10 ranges)	0.1 s - 100 days (10 ranges)
Number of contacts	1x chang. (AgNi)	3x chang. (AgNi)	2x changeover (AgNi)	2x changeover (AgNi)	2x changeover (AgNi)	1x changeover (AgNi)
Rated current	16 A / AC1	8 A / AC1	8 A / AC1	16 A / AC1	16 A / AC1	16 A / AC1
Power supply	AC 230 V, AC/DC 12-240V (AC 50-60 Hz)	AC 230 V, AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC 230 V, AC/DC 12-240V (AC 50-60 Hz)	AC 230 V, AC/DC 12-240V (AC 50-60 Hz)	AC 230 V, AC/DC 12-240V (AC 50-60 Hz)
	Single-function and single-time relay. Suitable for applications with beforehand known requirements for function and time. **ZR** - delayed start **ZN** - delayed return **BL** - cycler 1:1.	Single-function and single-time relay. Suitable for applications with beforehand known requirements for function and time. **ZR** - delayed start **ZN** - delayed return **BL** - cycler 1:1.	Relay is timing without power supply voltage and is switched off after set period. Two time functions selectable by using a rotary switch: a-delayed return after power supply is switched off e - delayed start.	Serves for sequent switching of high power (for example electrical heating). 2 time functions: 2x delayed start. Adjustable time from 0.1 s to 10 days.	Designated for delayed star/ delta motor start. Time t1 ⅄(star) – adjustable time from 0.1 s to 100 days. Time t2 (delay) between ⅄/▲ - time range from 0.1 s to 1 s.	Asymmetric cycler with independently adjustable output closing and opening time. 2 time functions: 1) cycler starting with impulse. 2) cycler starting with gap.

MULTIFUNCTION TIME RELAYS

NEW

Multifunction time relay

Multifunction time relay

Multifunction time relay with triac output

Digital multifunction time relay

Multifunction time relay with external potentiometer

Asymmetric cycler with external potentiometer

Technical parameters	CRM-61	CRM-91H	CRM-93H	CRM-9S	CRM-100	CRM-91HE	CRM-2HE
Number of functions	6	10			17	10	2
Time range	0.1 s - 10 h (6 ranges)	0.1 s - 10 days (10 ranges)			0.1 s - 999 hrs	0.1 s - 10 days (10 ranges)	0.1 s - 100 days (10 ranges)
Number of contacts	1x changeover (AgNi)	1x chang.(AgNi)	3x chang.(AgNi)	1x triak	1x changeover (AgNi)	1x changeover (AgNi)	1x changeover (AgNi)
Rated current	8 A / AC1	16 A / AC1	8 A / AC1	0.7 A	8 A / AC1	16 A / AC1	16 A / AC1
Power supply	AC 24 - 240 V (50-60 Hz), DC 24 V	AC 230 V, AC/DC 12-240V (AC 50-60 Hz)		AC 12-240V (AC 50-60 Hz)	AC/DC 24-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)
	Use for electric appliances, control of lighting, heating, motors, pumps etc... 6 functions. Comfort and transparent setting of functions and time ranges is carried out with function rotary switches.	Multifunctional time relay for universal use in automation, management and control or in house installations. Thanks to its abundant equipment (10 functions, 10 time ranges, universal power supply, 16A or 3x8A contact), it covers all requirements. Comfort and transparent setting of functions and time ranges is carried out with function rotary switches. **CRM-9S**: absolutely noiseless switching.			Digital multifunction relay can be used for controling lights, heating, motor, pumps machines and apliances where you need set time functions. Thanks to digital display and settings you exact set reguired time (without any mechanical tolerance).	Multifunction time relay with possibility of time control with external control component - potentiometer. Time adjustable from 0.1 s to 10 days.	Asymmetric cycler with possibility of time control with external control component - potentiometer. Time adjustable from 0.1 s to 100 days.

DIGITAL TIME RELAYS

Time switch with weekly program

Time switch with weekly program

Astronomical time switch

Time switch with DCF control

NEW

Digital switching timer with NFC programming capability

Programmable digital relay

Technical parameters	SHT-1 SHT-3	SHT-1/2 SHT-3/2	SHT-4	SHT-6 (DCFR-1)	SHT-7	PDR-2A	PDR-2B
Number of functions	1-channel	2-channel	2-channel	1-channel with external DCF receiver	2-channel	16	10
Time range	min. step 1s	min. step 1s	min. step 1s	min. step 1s	min. step 1s	0.01 s - 100 h	
Number of contacts	1x chang. ($AgSnO_2$)	2x chang. ($AgSnO_2$)	2x chang. ($AgSnO_2$)	1x changeover ($AgSnO_2$)	2x chang. ($AgSnO_2$)	2x changeover (AgNi)	
Rated current	16 A / AC1	16 A / AC1	16 A / AC1	16 A / AC1	16 A / AC1	16 A / AC1	
Power supply	AC 230 V, AC/DC 12-240V (AC 50-60 Hz)	AC 230 V, AC/DC 12-240 V (AC 50-60 Hz)	AC 230 V / 50-60 Hz	AC 230 V / 50-60 Hz	AC 230 V / 50-60 Hz	AC 230 V, AC/DC 12-240 V (AC 50-60 Hz)	

SHT-1, SHT-1/2: Time switch clock with weekly program
SHT-3, SHT-3/2: Time switch clock with annual program
SHT-4: Digital time switch with an astronomical program
Serves for control of various appliances in dependence on real time, in daily, weekly and annual mode.
Automatic transfer between summer and winter time.
Sealable transparent front panel cover. 100 memory places, back-lighted LCD display.
Reserve real time backup - up to 3 years.

Used for controlling appliances depending on real time, that is synchronized by a DCF 77 signal, thanks to the automatic time settings (with DCF 77 signal) it eliminates inaccuracies and errors by time running.

Digital switching timer with weekly program and setting via smart-phone supporting NFC transfer.
2-MODULE

PDR-2A: 30 memory places for most frequently used times.
PDR-2B: 2 time relays in one device.
Used for installations where it is necessary to set the exact time a visual inspection).

SUPER MULTIFUNCTION RELAY

Super-multifunction relay

STAIRCASE SWITCHES

Super-multifunction relay

Staircase automat

Programmable staircase automat

Staircase automat with dimming

Technical parameters	SMR-K SMR-T SMR-H	SMR-B	CRM-4	CRM-42 CRM-42F	DIM-2 DIM-2-1h
Number of functions	9	10	3	3	4
Time range	0.1 s - 10 days (10 ranges)	0.1 s -10 days (10 ranges)	0.5 s -10 min	0.5 s -10 min	0 s - 20 min.
Number of contacts	1x triak	1x NO ($AgSnO_2$)	1x changeover ($AgSnO_2$)	1x NO-SPST($AgSnO_2$), switches potencial A1	1 x triak
Rated current	-	16 A 125 / 250 V AC1	16 A / AC1	16 A / AC1	**Load**: R :10-500 VA; L: 10-250 VA
Power supply	AC 230 V / 50-60Hz	AC 230 V/50-60Hz	AC 230 V / 50-60Hz	AC 230 V / 50-60Hz	AC 230 V / 50Hz

Relay designated for mounting into an installation box, under pushbutton or switch into existing electro-installation.
SMR-K: 3-wire connection, it operates without "NEUTRAL" connection.
SMR-T: 3-wire connection, it operates without "NEUTRAL" connection, output power: 10-160 VA, it cannot be used for fluorescent and saving lamps.
SMR-H: 4-wire connection, output power: 0-200 VA, it cannot be used for fluorescent and saving lamps.
SMR-B: 4-wire connection, it allows switching of fluorescent and saving lamps.

Serves for delayed lighting turning off in staircase, corridor or entrance. It is controlled with pushbutton or several pushbuttons from more places (parallel connected).

Intelligent staircase automat for same application as CRM-4, however, with extended possibility of control in "PROG" mode, it is possible to select delayed switching off time with the number of depressions of control pushbutton. **CRM-42F:** Staircase switch without warning flashes.

Regulation:
- dimming up time -1-40s
- dimming down time - 1-40s
- time for which light should have the set brightness - 0s-20min
- brightness to which lighting should be activated - 10-100%

DIM-2-1h: start/ finish duration 1s - 1h.

POWER RELAYS

Power relay

PLUG-IN RELAY

Multifunction time relay into socket

Asymmetric cycler into socket

Technical parameters	VS116B/230	VS116K	VS116U	VS308K	VS308U	VS316/24	VS316/230	PRM-91H	PRM-92H	PRM-2H
Power terminals	L - N	A1 - A2		A1 - A2		A1 - A2		number of functions: 10		number of functions: 2
Power supply	AC 230 V / 50-60 Hz	AC 230 V / 50-60 Hz	AC/DC 12-240 V (AC 50-60 Hz)	AC 230 V / 50-60 Hz	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 24 V (AC 50-60 Hz)	AC 230 V / 50-60 Hz	AC/DC 12-240 V (AC 50-60 Hz)		
Power terminals	-	A1 - A3	-	A1 - A3	-	-	-	time range:		
Power supply	-	AC/DC 24 V	-	AC/DC 24 V	-	-	-	0.1 s -10 days*		0.1 s - 100 days*
Number of contacts	1x changeover ($AgSnO_2$)			3x changeover (AgNi)		3x changeover ($AgSnO_2$)		1x chang. (AgNi)		2x chang. (AgNi)
Rated current	16 A / AC1			8 A / AC1		16 A / AC1		16 A / AC1		8 A / AC1

* 10 ranges

They are used as enhancement or extension for existing device contact numbers.
Possibility of LED color selection for output status indication: red, green, yellow, blue or white LED (except VS116B/230).
VS116B/230: MINI, mounting into an installation box.

Allows switching of different phases or 3-phase voltage.

Equivalents of modular types of relays, constructed for standardized round 11-pin or 8-pin sockets. Socket design allows easy replacement, substitution of older types of relays (pin compatible) or simple replacement of auxiliary relay by timer. PLUG-IN version, installation into socket.

DIMMERS

Controlled dimmer

Controlled dimmer

Universal dimmer

Universal dimmer

Controlled dimmer

Expanding power module

Controlled dimmer

Controlled dimmer

Technical parameters	DIM-5	DIM-14	SMR-M	DIM-15	DIM-6	DIM6-3M-P	SMR-S	SMR-U
Number of contacts	1 x triac	2x MOSFET	2x MOSFET	2x MOSFET	4x MOSFET	2x MOSFET	1 x triac	2x MOSFET
Rated current:	2 A	2 A	2 A	2 A	10 A	5 A	-	-
Power supply	AC 230V / 50 Hz	AC 230V / 50 Hz	AC 230V / 50 Hz	AC 230V / 50 Hz	AC 230 V /50 Hz	AC 230 V /50 Hz	230 V AC / 50 Hz	230 V AC / 50 Hz
Load	R: 10 - 500 VA L: 10 - 250 VA LED	R: 500 VA L: 500 VA C: 500 VA LED	R: 160 VA L: 160 VA C: 160 VA ESL; LED	R: 300 VA L: 300 VA C: 300 VA ESL; LED	R: 2000 VA L: 2000 VA C: 2000 VA LED	R: 1000 VA L: 1000 VA C: 1000 VA LED	R: 10 - 300 VA L: 10 - 150 VA LED	R: 500 VA L: 500 VA C: 500 VA LED

Button control (connected in parallel), short presses ON/ OFF, a long press regulates brightness, storing in the memory.

DIM-14 as DIM-5, built-in protection against temperature and current overload, electronic fuse.

Universal dimmer is used to control light sources: R, L, C, ESL, LED. Enables gradual setting of luminance by push-button (non-detent) or parallel buttons. Type of light source is set by switch-over on the front panel of device. Min. luminance, set by potentiometer on the front panel, eliminates flashing of light sources.

Dimmer can be controlled by several methods: pushbutton, external potentiometer, analog signal 0-10V, INELS bus system. Possibility of modular extension up to 10 000 VA.

Expandable power module for DIM-6 cannot be operated separately.

Button-controlled dimmers designated for flush mounting into an installation box. Used to control lamp brightness, dimming, possible to control from more places.

SMR-U as DIM-14, but for mounting under the button into an installation box KU-68.

DIMMERS

Lighting intensity controller

Lighting intensity controller

POWER SUPPLIES

Power supplies of PS series (10 W)

Power supplies of PS series (30 W)

Power supplies of PS series (30 W)

Technical parameters	LIC-1	LIC-2	PS-10-12	PS-10-24	PS-30-12	PS-30-24	PS-30-R
Output voltage	2x MOSFET	0 - 10 V / 1 - 10 V	12 V DC	24 V DC	12 V DC	24 V DC	12-24 V DC
Max. load	-	10 mA	0.84 A / 10 W	0.42 A / 10 W	2.5 A / 30 W	1.25 A / 30 W	2.5-1.25 A / 30 W
Number of modules (size)	1	1	1		3		3
Output voltage tolerances	-	-	± 2%		± 2%		± 3%
Power supply	AC 230 V / 50-60 Hz	AC 100 - 250 V / 50-60 Hz	AC 184 - 250 V / 50-60 Hz		AC 100 - 250 V / 50-60 Hz		AC 100 - 250 V / 50-60 Hz
	Automatically regulates the intensity of light in a room. External sensor scans the intensity and based on the preset value it decreases or increases the brightness of light.	Serves as control unit for dimmers or electronic ballasts with analog control 0-10 V / 1-10 V.	Switching stabilized power supplies with fixed output voltage. Output current is limited by electronic fuse. Indication of output voltage by green LED on front panel. Temperature protection.		Switching stabilized power supplies with fixed output voltage. Output current is limited by electronic fuse. Indication of output voltage by green LED on front panel. Temperature protection.		Switching stabilized regulated power supplies. Output current is limited by electronic fuse. Indication of output voltage by green LED on front panel. Temperature protection.

POWER SUPPLIES

Power supplies of PS series (10 W)

Regulated power supply (100 W)

Nonstabilized power supply

Regulated stabilized power supply

Technical parameters	PSB-10-12	PSB-10-24	PS-100-12	PS-100-24	ZNP-10-24V	ZSR-30
Output voltage	12 V DC	24 V DC	12 V DC	24 V DC	24 V AC / DC	DC5-24V stab. / DC24V nonstab. / AC24V
Max. load	0.84 A /10 W	0.42 A /10 W	8.4 A /100 W	4.2 A /100 W	8 W	8 W
Number of modules (size)	box		6		3	3
Output voltage tolerances	± 2%		± 2%		-	± 5%
Power supply	AC 110 - 250 V / 50-60 Hz		AC 100 - 250 V / 50-60 Hz		AC 230 V / 50-60 Hz	AC 230 V / 50-60 Hz
	Switching stabilized power supplies with fixed output voltage Switching stabilized power supplies with fixed output voltage. Output current is limited by electronic fuse. Temperature protection.		Switching stabilized power supplies with fixed output voltage. Output current is limited by electronic fuse. Indication of output voltage by green LED on front panel. Temperature protection.		Power supply with fixed output voltage. Protection against short circuit and overloading with a melting fuse. Both AC and DC output voltage: 24 V / 8 W, non-stabilized.	Supply of various devices and appliances by safe voltage with fully galvanic separation from the main.

BELL TRANSFORMERS

Bell transformers

Bell transformer

USS MODULES

Controlling and signaling modules USS-ZM, USS-00 .. USS-15

"Do It Yourself"

Technical parameters	ZTR-8-8	ZTR-8-12	ZTR-15-12	USS	
Output voltage	AC 8 V	AC 12 V	AC 4 V, 8 V, 12 V	USS-00 - Blind flange USS-01 - Switch USS-02 - Switch over USS-03 - Switch with intermediate position USS-04 - Switch + pushbutton with intermediate position	USS-05 - Switching pushbutton with intermediate position USS-06 S/R - Pushbutton closing/opening USS-07-09 - Switch with glow lamp (red, green, yellow) USS-10-15 - Signalling LED (red, green, blue...)
Max. load	8 VA		4V 5 VA, 8 V 10 VA, 12 V 15 VA		
Number of modules (size)	2		3		
Power supply	AC 230 V / 50 Hz		AC 230 V / 50 Hz		
	Designated for general use - e.g. for door bell, door lock supplying. Universal power supply with alternating output voltage.			Designated for switching, control and signaling of auxiliary and power circuits. USS- "Do-it-yourself" = various types of switching and signaling units can be "snapped" in the basic module. Units are supplied separately, individual configurations are assembled by the user. It is possible to place up to two units into one MODULE (for example 2x switch, 2x signalling lights or combinations) = when compared with competitors it is saving place in a switch board. Operating temperature -20.. +55°C. 1-MODULE, DIN rail mounting.	

TWILIGHT SWITCHES

Twilight switch with external sensor

Twilight switch with digital time switch clock

Twilight light switch

MEMORY RELAYS

Memory & latching relay

Memory & latching relay

Technical parameters	SOU-1	SOU-2	SOU-3	MR-41	MR-42
Sensor	external	external	internal	-	-
Time delay	0 - 2 min	0 - 10 min	0/1min /2 min	-	-
Number of contacts	1x changeover ($AgSnO_2$)	1x changeover ($AgSnO_2$)	1x NO- SPST($AgSnO_2$)	1x changeover ($AgSnO_2$)	2x changeover ($AgSnO_2$)
Rated current	16 A / AC1	8 A / AC1	12 A / AC1	16 A / AC1	16 A / AC1
Power supply	AC 230 V, AC/DC 12-240 V (AC 50-60 Hz)	AC 230 V /50-60 Hz	AC 230 V /50-60 Hz	AC 230 V, AC/DC 12-240 V (AC 50-60 Hz)	AC 230 V, AC/DC 12-240 V (AC 50-60 Hz)
	It can be used for control of lighting on basis of ambient light intensity. Adjustable lighting level in two ranges: 1-100 Lx and 100 - 50000 Lx. Time delay 0-2 min.	Designated for control of lighting on basis of ambient light intensity and real time (combination of SOU-1 and SHT-3 time switch in one). Adjustable lighting intensity level 1-50000Lx.Innovation: Plug-in model for replacing backup battery.	It can be used for control of devices on basis of ambient light intensity level. Outdoor configuration with IP65 protection. Inbuilt light intensity sensor. 2 devices in one - twilight switch, light switch.	Memory (impulse) switches controlled with pushbuttons for lighting control from more places. Relays remember their condition even after power supply outage recover, so that relay is always turned off during power supply outage and after power supply recovers, relay returns in the same condition as before power supply outage. **MR-42:** options - 2x parallel contacts or the other relay is latching.	

MONITORING RELAYS - 1 phase

Monitoring voltage relay, AC

Monitoring voltage relay, AC

Monitoring voltage relay, AC

Monitoring voltage relay, DC

Monitoring voltage relay, AC/DC

Technical parameters	HRN-33 HRN-63	HRN-35	HRN-37 HRN-67	HRN-34 HRN-64	HRN-41 HRN-42
Number of contacts	1x chang./SPDT (AgNi/Silver Alloy)	1x changeover for each level of voltage (AgNi)	1x chang./SPDT (AgNi/Silver Alloy)	1x chang./SPDT (AgNi/Silver Alloy)	2x chang./SPDT (AgNi/Silver Alloy)
Rated current	16 A / AC1	16 A / AC1	16 A / AC1	16 A / AC1	16 A / AC1
Circuits secure	1 phase	1 phase	1 phase	DC	AC / DC
Range of monitored voltage	AC 48 - 276 V / 50 - 60 Hz	AC 48 - 276 V / 50 - 60 Hz	AC 24 - 150 V / 50 - 60 Hz	DC 6 - 30 V	10-50 V; 32-160 V; 100-500 V
Power voltage	AC 48 - 276 V / 50 - 60 Hz	AC 48 - 276 V / 50 - 60 Hz	AC 24 - 150 V / 50 - 60 Hz	DC 6 - 30 V	AC 230 V; AC 400 V; AC 110 V; AC/DC 24 V (AC 50-60 Hz)

Serves for monitoring of power supply voltage for appliance sensitive with respect to power supply tolerances, device protection against undervoltage / overvoltage. It monitors undervoltage and overvoltage level separately. Adjustable delay 0-10 s.

Serves for monitoring of power supply voltage for appliance sensitive with respect to power supply tolerances, device protection against undervoltage / overvoltage. It has independent output relay for each voltage level.

Serves for monitoring of power supply voltage for appliance sensitive with respect to power supply tolerances, device protection against undervoltage / overvoltage. It monitors undervoltage and overvoltage level separately. Adjustable delay 0-10 s.

Serves for monitoring of power supply voltage for appliance sensitive with respect to power supply tolerances, device protection against undervoltage / overvoltage. With its range, it is predestined for monitoring of battery circuits.

Relay designed for monitoring DC and AC voltage in three ranges. The relay controls the size of the voltage in two independent levels (Umin, Umax). Function of second relay (independently / in parallel).

MONITORING RELAYS - 3 phases

Relay for sequence and phase outage monitoring

Voltage relay for overvoltage / undervoltage monitoring

Voltage relay for overvoltage / undervoltage monitoring

Relay for sequence and phase outage monitoring

Relay for complete monitoring of 3-phase networks

Technical parameters	HRN-55 HRN-55N	HRN-57 HRN-57N	HRN-54 HRN-54N	HRN-56	HRN-43 HRN-43N
Number of contacts	1x chang./SPDT (AgNi/Silver Alloy)	1x chang./SPDT(AgNi/Silver Alloy)	1x chang./SPDT (AgNi/Silver Alloy)	1x chang./SPDT (AgNi/Silver Alloy)	2x chang./SPDT(AgNi/Silver Alloy)
Rated current	8 A / AC1	8 A / AC1	8 A / AC1	8 A / AC1	16 A / AC1
Circuits secure	3 phases	3 phases	3 phases	3 phases	3 phases
Monitored ranges	Umax 125 % Un / Umin 75 % Un	Umax 105-125 % Un / Umin 75-95 % Un	Umax 105 - 125 % Un / Umin 75-95 % Un	Umin 70 - 95 % Un / Uoff 60 % Un	Umin 35 - 99 % Umax
Power supply	from monitored voltage	from monitored voltage	from monitored voltage	from monitored voltage	AC 230 V; AC 400 V; AC 110 V; AC/DC 24 V (AC 50-60 Hz)

HRN-55: Supplied from all phases, i.e. relay function is retained even one phase outage.
HRN-55N: L1-N supplying, i.e. the relay monitors also neutral wire breaking.

Serves for monitoring of voltage in switchboard, protection of devices and equipment. Possibility of setting of top and bottom voltage limits at which the output relay contact opens.

Serves for monitoring of voltage, sequence and phase outage in switchboard, protection of devices and equipment. It is possible to set the top and bottom voltage limits at which the output relay contact opens.
Delay of 0.1-10 s.

Relay monitors sequence and outage of phases in circuits:
3 x 120V - 1M
3 x 208V - 1M
3 x 240V - 1M
3 x 400V - 1M
3 x 480V - 3M
3 x 575V - 3M

Relay monitors and controls in 3-phase networks:
- voltage in two levels (overvoltage and under voltage)
- phase asymmetry
- phase sequence
- phase outage

MONITORING CURRENT RELAYS - 1 phase - 3 phases

Monitoring current relay, (1-20 A)

Monitoring current relay

Monitoring current relay

Monitoring current relay AC/DC

Three-phase current monitoring relay

Technical parameters	PRI-32	PRI-51	PRI-52	PRI-41 PRI-42	PRI-53/1 PRI-53/5
Number of contacts	1x chang./SPDT (AgNi/Silver Alloy)	1x chang./SPDT (AgNi/Silver Alloy)	1x chang./SPDT (AgNi/Silver Alloy)	2x chang./SPDT (AgNi/Silver Alloy)	2x chang. / DPDT (AgNi) gilded
Rated current	8 A / AC1	8 A / AC1	8 A / AC1	16 A / AC1	0 - 5 A
Circuit monitoring	1 phase	1 phase	1 phase	1 phase	3 phases
Monitored ranges	1-20 A (AC 50 Hz)	0.05 -16 A (AC 50 Hz)	AC 0.5-25 A / 50 Hz	AC/DC 3.2-16A, AC/DC 1-5A, AC/DC 0.32-1.6 A (AC 50-60 Hz)	**Current level - I:** adjustable 40-120 %In
Power supply	AC 24-240 V, DC 24 V (AC 50-60 Hz)	AC 24-240 V, DC 24 V (AC 50-60 Hz)	AC 230 V (AC 50-60 Hz)	AC 230 V; AC 400 V; AC 110 V; AC/DC 24 V (AC 50-60 Hz)	24 - 240 V AC/DC

Monitoring relay is used to monitor current level in single-phase AC circuits. The product includes also current transformer; if a conductor is put in it, the transformer detects the size of passing current.

Monitoring relay is used to monitor current level in single-phase AC circuits. Adjusting of actualing current via potentiometer, choice from 7 ranges:
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.

Used to indicate the current flow, e.g. to monitor wire heating cables, rod heating elements, to monitor the consumption of engines… Hole for threaded conductor passes through the body of device.

Relay designed for monitoring DC and AC currents in three ranges. The relay controls the current size in two independent levels (Imax, Imin). Function of second relay (independently / in parallel).

24-240 V AC/DC power supply galvanically separated from the circuit of the monitored current. Adjustable function: UNDER, OVER.
2 types according to the rated current In (1A, 5A).

MONITORING - voltage - COS φ - frequency HYGROSTATS

INNOVATION

Optical signalization for 3-phase network

Relays for monitoring of COS power factor

Frequency monitoring relay

Hygro-thermostat

Hygrostat

Technical parameters	MPS-1	COS-2	HRF-10	RHT-1	RHV-1
Number of contacts	-	2x chang./DPDT (AgNi/Silver Alloy)	1x chang./ SPDT (AgNi) gilded	1x NO/SPDT ($AgSnO_2$)	1 x NO/SPST ($AgSnO_2$)
Rated current (supply)	-	16 A / AC1	16 A	16 A / AC1, 10 A /24 V DC	12 A / AC1
Power supply	AC 3x 400 / 230 V / 50 - 60 Hz	AC 230 V; AC 400 V; AC 110 V AC/DC 24 V (AC 50-60 Hz)	161 - 346 V	24 - 240 V AC/DC (AC 50-60 Hz)	AC 230 V / 50-60 Hz
Circuit monitoring	fused for optical signaling of the voltage	1 phases, 3 phases	-	-	-
Ranges	50 - 276 V	cos-φ 0.1 - 0.99	adjustable 80 - 120 % Fn	-	-

Used for optical signaling of the voltage level in three phases. Four-wire connection - L1, L2, L3, N.
Monitors phase voltages against neutral wire.
LED indicator - for every phase 1 LED.

Relay monitors phase off -set between current and voltage in 3-phase or also 1-phase networks - it evaluates cos-φ. The relay is predestined for motor overloading /relief monitoring.

The relay is designed for monitoring frequency of AC voltage, e.g. in photovoltaic power stations, generators. Two adjustable levels of frequency (Fmin, Fmax) in the range of 80 - 120 % Fn

Hygro-thermostat for temperature monitoring and control - range 0..+60 °C and relative humidity - range 50..90 %. Sensor is part of device - designated for measuring in switchboard.

A basic hydrostat to monitor and control the relative humidity 0-90 %. Outdoor version IP65, box for wall mounting, removable lid without screws.

MODULAR THERMOSTATS

Thermostats

Thermostats

Double thermostat

Multifunction digital thermostat

Motor winding temperature monitoring

Technical parameters	TER-3 / A,B,C,D,G,H	TER-3E	TER-F	TER-4	TER-9	TER-7
Monitored ranges	-22..50; 32..104; 86..158; 32..140; 5..113°F -30..10; 0..40; 30..70; 0..60; -15..45°C	32 ..140 °F (0..60°C)		adjustable: -40..230 °F (-40..110°C)	-40..110°C	1.8 - 3.3 kΩ
Sensor / Type	external, therm. NTC, except for TER-3G (Pt100)	external, NTC	in-built	external, thermistor NTC	external, thermistor NTC	external, PTC
Number of contacts	1x NO ($AgSnO_2$)	1x NO- SPST ($AgSnO_2$)		2x chang./DPDT (AgNi/Silver Alloy)	1x chang. for each output/ SPDT, (AgNi)	2x chang./DPDT(AgNi/Silver Alloy)
Rated current	16A/AC1 10A / 24 V DC	16A/AC1 10A/24 V DC		16 A / AC1	8 A / AC1	8 A / AC1
Power supply	AC/DC 24-240 V (AC 50-60 Hz)	AC/DC 24-240 V (AC 50-60 Hz)		AC 230, AC/DC 24 V (AC 50-60 Hz)	AC 230, AC/DC 24 V (AC 50-60 Hz)	AC/DC 24 V - 240 V (AC 50-60 Hz)
	Simple thermostat for temperature monitoring and control within range -30..+70°C. Possibility of "heating"/"cooling" function setting (realized with DIP switch). Adjustable hysteresis (sensitivity).	Simple thermostat for temperature monitoring and control within range 0+60°C. **TER-3E:**- selection from external temperature sensors. **TER-3F:** - sensor is a part of device.		Double thermostat for temperature monitoring and control within wide range -4 .. +110 °C. 2 temperature outputs for NTC sensor. 2 independent switching output contacts 16 A.	Digital thermostat with 6 functions and in-built time switch. 2 thermostats in 1, 2 temperature inputs, 2 outputs. Functions: 2 independent single-stage thermostat, dependent functions of 2 thermostats, differential thermostat, 2-stage thermostat, thermostat with "WINDOW", thermostat with dead zone. Innovation: Plug-in model for replacing backup atterym.	It monitors motor winding temperature. PTC sensor in-built in motor winding is used as a sensing element. Error condition RESET: a) with pushbutton on front panel b) with external contact.

ROOM AND OUT SIDE THERMOSTATS

Digital room thermostat

Two-level thermostat
One-level thermostat

Thermostat

THERMO-VALVE

Energy-saving digital radiator thermo-VALVE

Technical parameters	21232 21233	TEV-1 TEV-2 TEV-3	TEV-4	ATV-1
Number of contacts	1x changeover	1x chang./SPDT (AgNi/Silver Alloy)	1x NO/SPDT ($AgSnO_2$)	This energy-saving digital radiator thermo-valve is a programmable regulation device for various heaters, but mainly radiators. Intervals of heating and energy-saving operation can be set using a freely adjustable time program. 8 individually programmable switching times per day: - 4 heating intervals - 4 energy-saving intervals. The device features very quiet operation and long battery life (up 5 years). Quick and easy installation.
Rated current	16 A	16A/250 V	12 A / AC1	
Power supply	230 V / 50 Hz	AC 230 V / 50-60 Hz	230 V AC / 50-60Hz	
	21232: Allows you to manually or automatically control heating or air conditioning in relation to the daily or weekly program and the set temperature. **21233:** Controls heating or air-conditioning systems depending on the selected temperature. It is possible to connect a floor temperature sensor to automatically detect and connect to it.	**TEV-1:** Thermostat with "WINDOW" function; i.e. output is closed if is measured temperature between set temperature values. Monitoring ranges 2x-20..+20 °C, hysteresis 3°C (± 1.5 °C). Thermostat with possibility of temperature control in adjustable range. **TEV-2:** Monitoring ranges -20..+20 °C, hysteresis 3°C (± 1.5 °C). **TEV-3:** Monitoring ranges +5..+35 °C, hysteresis 3°C (± 1.5 °C).	Simple thermostat for monitoring and control of temperature in outdoor spaces and demanding environments. Two functions that can be set with a link: heating and cooling. Monitoring ranges: -30..+60 °C, hysteresis: 0.5 / 1.5 / 4 °C.	

LEVEL SWITCHES

INNOVATION

Level switch

Level switch

Level switch

Level switch

Level set

Technical parameters	HRH-8	HRH-7	HRH-5	HRH-6/DC HRH-6/AC	HRH-4
Function	8	2	2	2	2
Number of contacts	2x chang./DPDT (AgNi/Silver Alloy)	1x chang.($AgSnO_2$)	1x chang.(AgNi)	1x NO-SPST (AgNi/Silver Alloy)	4x NO
Current rating	16 A / AC1	15-18: 16 A / AC3; 15-16: 3 A / AC3	8 A / AC1	10 A / AC1	25 A
Sensitivity	5 - 100 kΩ	5 - 100 kΩ	5 - 100 kΩ	10 - 200 kΩ	5 - 100 kΩ
Power supply	AC 230 V; AC 400 V; AC 110 V; AC/DC 24 V (AC 50-60 Hz)	24-240 V AC / DC (AC 50-60 Hz)	24-240 V AC/ DC (AC 50-60 Hz)	DC 12-24 V, AC 230 V (AC 50-60 Hz)	AC/DC 230 V, AC/DC 24 V (AC 50-60 Hz)
	The relay is designed to control the level of conductive liquids in wells, wells, tanks, pools, tankers, reservoirs ... Within one device, the following configurations can be selected: - 2x one-level monitoring (in separate tanks) - 1x two-level monitoring (in one tank) - pumping from one tank to another.	Suitable to operate/work in harsh conditions due to the high degree of protection IP65. The same functions as for HRH-5.	The relay is designed for monitoring the level of conductive fluids with the option of selecting functions: pumping in and pumping out. Optionally set configurations: single-level or double-level switch.	Device monitors 5 levels by using six probes (one probe is common). Level indication by six LED's on the front panel of the device. **HRH-6/S:** additional signalling to HRH-6 with 6 indicators on the front panel.	It is a complete unit consisting of HRH-5 level relay and VS425 contactor. Set has IP55 protection. Designated for an automatic operation in 1-phased and 3-phased pumps.

LEVEL SETS

Level sets

ACCESSORIES

Thermo sensors for thermostats

Level sensors

Thermo-valve

LEVEL SWITCH SETS FOR LEVEL MONITORING	TC, TZ, Pt100	SHR-x	CABLE	TELVA
There are Level sets placed in switchboard with IP65 protection (protected against dust and against water jets). **HRH-VS:** level switch HRH-5 with installation contactor VS425-40 (25A contact). **HRH-MS-VS-2.5A:** level switch HRH-5 with installation contactor VS425-40 (25A contact) and with motor starter MS18 1.6-2.5 A. **HRH-MS-VS-4A:** level switch HRH-5 with installation contactor VS425-40 (25A contact) and with motor starter MS18 2.5-4 A. **HRH-MS-VS-6.3A:** level switch HRH-5 with installation contactor VS425-40 (25A contact) and with motor starter MS18 4-6.3 A.	**TC:** Types of thermo sensors for range 0..+70°C. Cable CYSY is used, 2Dx0.5mm, PVC insulation **TZ:** Types of thermo sensors for range -40..+125°C. Cable with silicone insulation. **Pt100:** Types of thermo sensors for range -30..+200°C. shielded cable with silicon insulation 2x0.22 mm^2. Temperature sensors are produced from thermistor NTC. TC, TZ, Pt - offered length is 10 cm, 3, 6 or 12m.	**SHR-1:** for guarding flooding. SHR-1-M brass sensor. SHR-1-N stainless steel sensor. **SHR-2:** is used to detect levels as in wells, boreholes, tanks. Stainless steel sensor in PVC housing. **SHR-3**: for use in harsh and industrial environments. Stainless steel sensor. Accessories for level switches: **D03VV-F 3x0.75/3.2:** cable to probes SHR-1 and SHR-2, 3x 0.75 mm^2 with a certifi cation for drinking water, 1m. **D05V-K 0.75/3.2**: cable to probes SHR-1 and SHR-2, 3x 0.75 mm^2 with a certification for drinking water, 1m.		Thermodriver Telva is a suitable control unit for a wide range of thermostatic valves. Visual indicator of valve position. Design: NO - without voltage open NC - without voltage closed Types of thermo actuators: - TELVA 230V, NO - TELVA 230V, NC - TELVA 24V, NO - TELVA 24V, NC.

INSTALLATION CONTACTORS

Installation contactors 1-MODUL

Installation contactors 1-MODUL

Installation contactors 2-MODUL

Installation contactors 3-MODUL

Miniature installation contactor

Technical parameters	VS120	VS220	VS425	VS440	VS463	VS420
Number of poles	1	2	4	4		4
Load	20 A	20 A	25 A	40 A	63 A	20 A
Configuration of contacts NO/NC	10, 01	20, 11, 02	40, 31, 22, 04	40, 31, 22, 04	40, 31, 22	40, 31
Coil power supply	AC/DC 24 V, 230 V	AC/DC 24 V, 48 V, 110V, 230 V	AC/DC 24 V, 48 V, 110 V, 230 V	AC/DC 24 V, 110 V, 230 V	AC/DC 24 V, 48 V, 110 V, 230 V	AC 12 V, 24 V, 48 V, 110 V, 230 V

These contactors are characterized by soft-switching operation, with DC coil and rectifier, what ensures a quiet operation and running.
Used to switch electrical circuits, in particular resistive loads and three-phase asynchronous motors.
IP 20 protection - guards providing IP 40 protection of all contactor terminals are available upon request.
It is possible to connect auxiliary contact VSK-11 and VSK-20 to the contactors VS220, 425,440, 463.
Installation on DIN rail or on panel.

INSTALLATION CONTACTORS with manual control

Installation contactor with manual control

Installation contactor with manual control

Technical parameters	VSM220	VSM425
Number of poles	2	4
Load	20 A	25 A
Configuration of contacts NO/NC	20, 11, 02	40, 31, 22, 04
Coil power supply	AC 12 V, 24 V, 110 V, 230 V	AC 12 V, 24 V, 42 V, 230 V

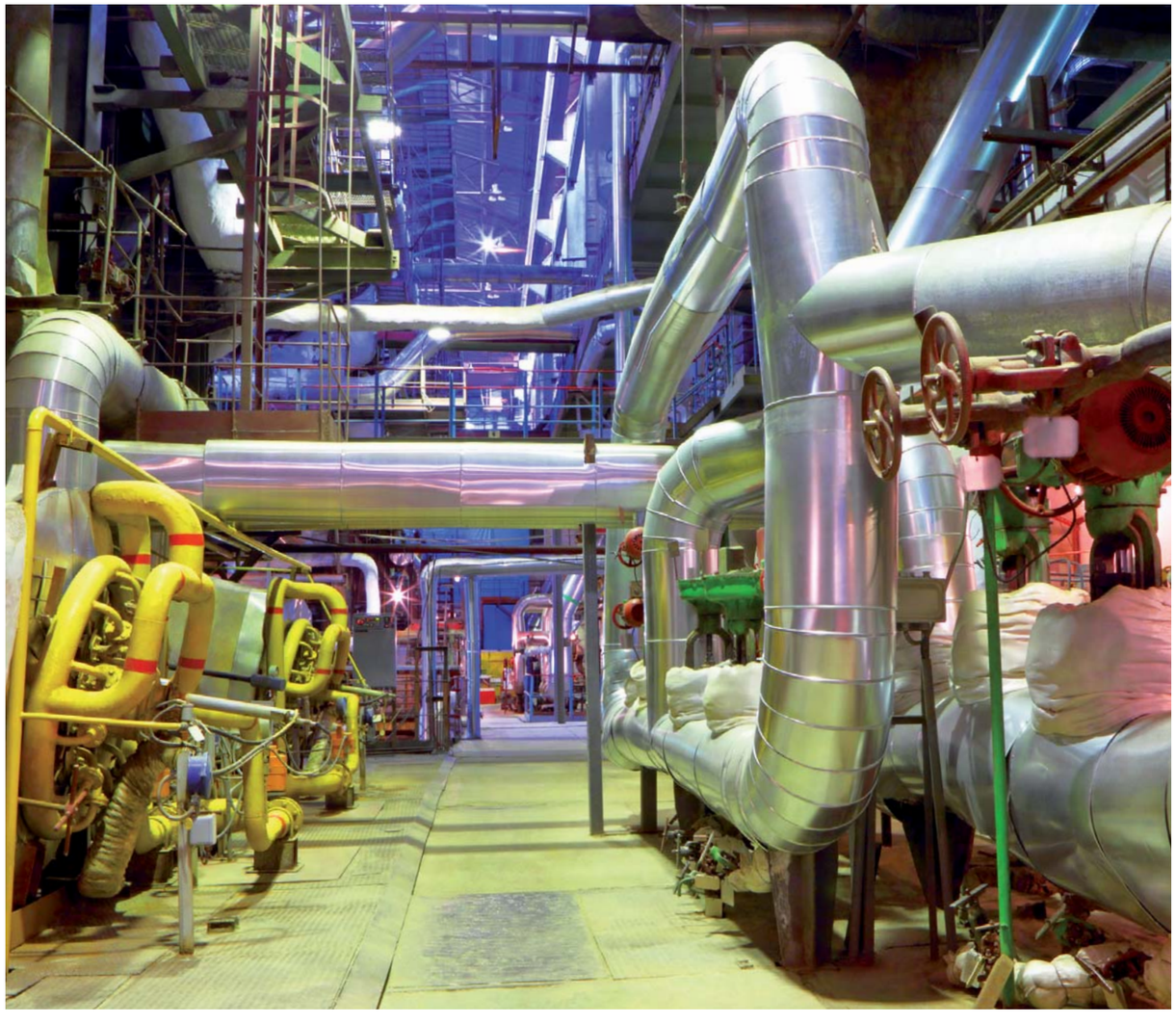
It is a special version of installation contactors providing not only basic functions but also manual control.
They are used to switch accumulation appliances for heating and service hot water heating.
Optical indicator of on - off status.
VSK- 11 and VSK-20 auxiliary contacts can be connected to VSM220 and VSM425 contactors.

1: by sliding the switch from AUTO to position 1, the switching contacts are closed and the NC contacts are open. This lasts until the following impulse to the contactor coil.

AUTO: normal function of the contactor as an installation contactor without manual control.

O: contacts are constantly disconnected (switching contact) or are constantly switched on (NC contact) regardless of voltage. Optical status indicator switched on/off.

Protection relays for industry



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VOLTAGE MONITORING RELAY - 1 phase

Under and over voltage monitoring relays

Under voltage monitoring relays

Over voltage monitoring relays

Synchro-check monitoring relays

DC Low voltage monitoring relays

Technical parameters	VROU1-28/69 VROU1-28/139 VROU1-28/277	VRU1-28/69 VRU1-28/139 VRU1-28/277	VRO1-28/69 VRO1-28/139 VRO1-28/277	VRSC1-28/69 VRSC1-28/139 VRSC1-28/277	VRMV1-28/240 VRMV1-28/24
Relay contacts	2x changeover	2 x changeover	2 x changeover	2 x changeover	2 x changeover
Load capacity - AC	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA
Load capacity - DC	30 V 8A	30 V 8A	30 V 8A	30 V 8A	30 V 8A
Supervised range	57.7-69.3 V, 100-139 V, 220-277 V / 45-65 Hz	57.7-69.3 V, 100-139 V, 220-277 V / 45-65 Hz	57.7-69.3 V, 100-139 V, 220-277 V / 45-65 Hz	57-69 V, 100-139 V, 220-277 V / 45-65 Hz	50 mV, 75 mV, 100 mV
Supply Voltage	24 V - 240 V AC/DC	24 V - 240 V AC/DC	24 V - 240 V AC/DC	from monitored voltage	24V-240 V AC/DC or 12-24 V DC
	These units monitor a single phase supply and operate relays if the phase voltage goes below or above set levels.	These units monitor a single phase supply and operate relays if the phase voltage goes below or above set levels.	These units monitor a single phase supply and operate relays if the phase voltage goes below or above set levels.	This unit compares the voltage, frequency and phase angle of two supplies and operates a relay according to the synchronicity of the supplies. If the two supplies cease to match, the relay operates to provide a control output. The relay output can be used for alarm or control purposes.	These units monitor a voltage of 50, 75 or 150 mV, e.g. from a standard current shunt, and operates one of two relays if the voltage goes above or below set levels.

VOLTAGE MONITORING RELAY - 3 phases

Under and over voltage monitoring relays

Under voltage monitoring relays

Over voltage monitoring relays

Under and over voltage monitoring relays

Under voltage monitoring relays

Technical parameters	VROU3-28/120 VROU3-28/240 VROU3-28/480	VRU3-28/120 VRU3-28/240 VRU3-28/480	VRO3-28/120 VRO3-28/240 VRO3-28/480	VROU3N-28/120 VROU3N-28/240 VROU3N-28/480	VRU3N-28/120 VRU3N-28/240 VRU3N-28/480
Relay contacts	2x changeover	2 x changeover	2 x changeover	2 x changeover	2 x changeover
Load capacity - AC	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA
Load capacity - DC	30 V 8A	30 V 8A	30 V 8A	30 V 8A	30 V 8A
Supervised range	100-120 V, 173-240 V, 380-480 V / 45-65 Hz	100-120 V, 173-240 V, 380-480 V / 45-65 Hz	100-120 V, 173-240 V, 380-480 V / 45-65 Hz	57.7-69.3 V, 100-139 V, 220-277 V / 45-65 Hz	57.7-69.3 V, 100-139 V, 220-277 V / 45-65 Hz
Supply Voltage	24 V - 240 V AC/DC	24 V - 240 V AC/DC	24 V - 240 V AC/DC	24 V - 240 V AC/DC	24 V - 240 V AC/DC
	These units monitor a 3-phase 3-wire supply and operate relays if a phase-phase voltage goes below or above set levels.	These units monitor a 3-phase 3-wire supply and operate relays if a phase-phase voltage goes below set levels.	These units monitor a 3-phase 3-wire supply and operate relays if a phase-phase voltage goes below set levels.	These units monitor a 3-phase 4-wire supply and operate relays if a phase-neutral voltage goes below or above set levels.	These units monitor a 3-phase 4-wire supply and operate relays if a phase-neutral voltage goes below set levels.

VOLTAGE MONITORING RELAY - 3 phases

Over voltage monitoring relays

Failure and phase sequence monitoring relays

Failure and phase sequence monitoring relays

Phase balance and undervoltage monitoring relays

Phase balance and undervoltage monitoring relays

Technical parameters	VRO3N-28/120 VRO3N-28/240 VRO3N-28/480	VRSF3-18/120 VRSF3-18/240 VRSF3-28/480	VRSF3N-18/120 VRSF3N-18/240 VRSF3N-28/480	VRBU3-18/120 VRBU3-18/240 VRBU3-28/480	VRBU3N-18/120 VRBU3N-18/240 VRBU3N-28/480
Relay contacts	2x changeover	1x or 2 x changeover *	1x or 2 x changeover *	1x or 2 x changeover *	1x or 2 x changeover *
Load capacity - AC	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA
Load capacity - DC	30 V 8A	30 V 8A	30 V 8A	30 V 8A	30 V 8A
Supervised range	57.7-69.3 V, 100-139 V, 220-277 V / 45-65 Hz	100-120 V, 173-240 V, 380-480 V / 45-65 Hz	58-69 V, 100-139 V, 220-277 V / 45-65 Hz	100-120 V, 173-240 V, 380-480 V / 45-65 Hz	58-69 V, 100-139 V, 220-277 V / 45-65 Hz
Supply Voltage	24 V - 240 V AC/DC	from monitored voltage	from monitored voltage	from monitored voltage	from monitored voltage
* by type	These units monitor a 3-phase 4-wire supply and operate relays if a phase-neutral voltage goes below set levels.	This unit monitors the voltage levels and phase sequence of a threephase supply and operates a relay if any phase voltage goes below a set level or if the phase sequence (L1, L2, L3) is incorrect. A front panel control allows selection of minimum voltage level. LEDs indicate power on and trip status.		This unit monitors a 3-phase supply for phase imbalance, low or missing phases or incorrect phase sequence and trips a relay if it detects any anomaly. A front panel control allows selection of minimum voltage level. LEDs indicate power on and trip status.	

CURRENT MONITORING RELAY - 1 phase

Under and over AC current monitoring relays

Under / over AC current monitoring relays

Ground fault monitoring relays

DC low current monitoring relays

Reverse power monitoring relays

Technical parameters	CROU1-28/1 CROU1-28/5	CRU1-18/1 CRO1-18/1 CRU1-18/5 CRO1-18/5	CRGF1-18/24 CRGF1-18/240	CRMA1-28/24 CRMA1-28/240	CRRP1-28/120 CRRP1-28/240 CRRP1-28/480
Relay contacts	2x changeover	1 x changeover	2x changeover	2 x changeover	2 x changeover
Load capacity - AC	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA
Load capacity - DC	30 V 8A	30 V 8A	30 V 8A	30 V 8A	30 V 8A
Supervised range	1 A, 5A / 45-65 Hz	1 A, 5A / 45-65 Hz	100, 150, 200, 250, 300, 450, 600, 750, 800, 1200 A / 45-65 Hz	0-1 mA, 0-10 mA, 4-20 mA	57.7-69.3 V, 100-139 V, 220-277 V / 45-65 Hz
Supply Voltage	24 V - 240 V AC/DC	24 V - 240 V AC/DC	24 - 240 V AC/DC or 12 - 24 V DC	24V-240 V AC/DC or 12-24 V DC	from monitored voltage
	These units monitor the AC current to a load and operate relays if the current goes below or above a set level.	These units monitor the AC current to a load and operate relays if the current goes below or above a set level.	Monitors the dangerous value of the leakage ground current that can cause e.g. undesirable overheating of cables and a subsequent failure of the device or even dangerous voltage of the grounded device.	These units monitor a current of 0-1, 0-10 or 4-20 mA, e.g. from a transducer, and operates one of two relays if the current goes above or below set levels.	This unit monitors a single- or three-phase supply for reverse power and trips a relay if it detects reverse power (I x cos Φ) over a set limit. The relay output is typically used to prevent 'motoring' of a generator (where the generator turns the engine), which can damage the engine.

CURRENT MONITORING RELAY - 3 phases

FREQUENCY MONITORING RELAY

THERMISTOR TRIP

Reverse power monitoring relays

Under or over AC current monitoring relays

Frequency monitoring relays

Speed sensing/ monitoring relay

Motor winding temperature monitoring

Technical parameters	CRRP3-28/120 CRRP3-28/240 CRRP3-28/480	CROU3N-28/1 CROU3N-28/5	FROU1-28/87 FROU1-28/174 FROU1-28/346 FROU1-28/500	FRSS1-38/130	TR1-18/3,3
Relay contacts	2x changeover	2 x changeover	2 x changeove	3 x changeover	2 x changeover,
Load capacity - AC	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA	250 V @ 8 A, 2 kVA
Load capacity - DC	30 V 8A	30 V 8A	30 V 8A	30 V 8A	24V 8A 500 mW min.
Supervised range	100-120 V, 173-240 V, 380-480 V / 45-65 Hz	1 A, 5A / 45-65 Hz	43-87 V; 71-174 V; 161-346 V; 161-500 V / 45-65 Hz	0-10 kHz min., 0-10 kHz max.	x
Supply Voltage	from monitored voltage	24 V - 240 V AC/DC	from monitored voltage	12-24V DC	24-240V AC/DC (AC 50-60Hz)
	This unit monitors a single- or three-phase supply for reverse power and trips a relay if it detects reverse power (I x cos Φ) over a set limit. The relay output is typically used to prevent 'motoring' of a generator (where the generator turns the engine), which can damage the engine.	These units monitor the AC current to a load and operate relays if the current goes below or above a set level.	This unit monitors the frequency of a single phase supply and operates a relay if the frequency goes above or below set levels.	This unit monitors the speed of rotating equipment using a magnetic pick-up and provides three relay outputs according to measured speeds. The pick-up could, for instance, detect teeth on a rotating gear or flywheel. The unit also provides a tachometer output for speed indication. The relay outputs can be used for alarm or control purposes. LEDs indicate power on and relay status.	This unit monitors the temperature of a motor using the PTC sensor (positive temperature coefficient resistor) or thermostat (TK) switch built in to the motor winding. Relay contacts can be used to disconnect the supply to the motor if it overheats. LEDs indicate mains on and fault status.

Nomenclature

VROU1-28/69

- Voltage
- Relay
- Over
- Under
- monitored range
- 8 A
- 2 contacts
- 1 phase

CROU3N-28/1

- Current
- Relay
- Over
- Under
- monitored range
- 8 A
- 2 contacts
- with N
- 3 phase

Wireless electro-installation

Smart home & building solution

www.elkoep.com

iNELS® RF Control

If you are going to renovate the house but you do not want to interfere with existing wiring, take advantage of wireless solutions. Communication between the devices takes place wirelessly at 868—916 MHz (frequency for building automation in a given country), using the unique iNELS RF Control (RFIO) and iNELS RF Control² (RFIO²) protocols. Both are proprietary protocols of ELKO EP and are unique in their structure.

The range of units in the open air is 200 m, but in built-up area it is less (it is around 40—50 m). Everything depends on the building's design. Generally speaking, reinforced concrete causes the most interference for wireless communication; on the contrary plasterboard or glass causes the least interference. If you have problems with range, you can use a repeater (repeater). If you want to transmit the signal between floors, an efficient solution is the smart eLAN-RF-003 box.

The installation itself is variable thanks to this communication and can be gradually expanded. We recommend that you have direct line of sight between the devices that are to establish contact with each other. The ideal case is to place the central unit in the centre of the room. DIN rail or wall outlet components have clear installation rules. Components in boxed design can be placed in installation boxes, light covers or, for example, plasterboard ceilings.

Components (i.e., receivers) are divided according to the control mode, for example switching, dimming or temperature. Most components also have the ability to set the memory and retain the status when a power failure occurs. With an integrated 16A $AgSnO_2$ contact, they can also switch inductive loads.

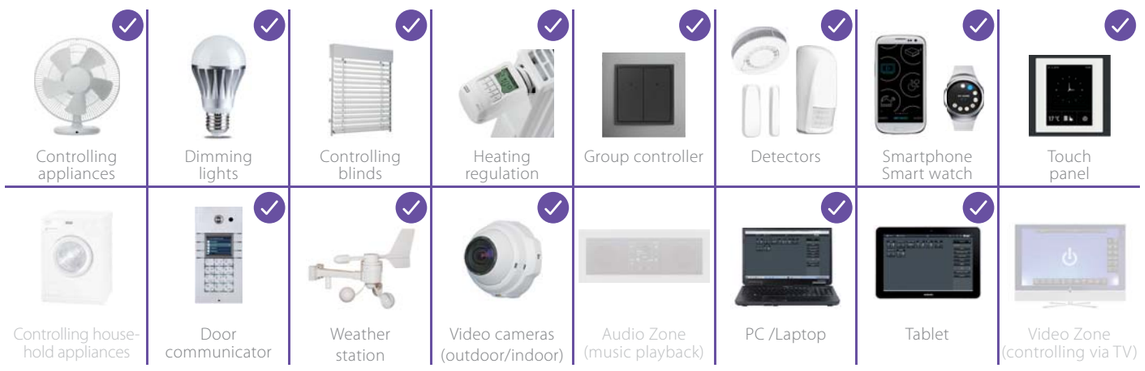
When controlling LED light sources, a minimum brightness can be set on the dimmer to eliminate the flickering of the light source during dimming. For manufacturers, where there can be two-way source control with an existing switch and wireless technology, the RFDEL-71 and RFSAI-61B can be used to solve this problem.

The versatility of the control brings you countless choices – from the key fob, through the flat-panel controls that can be placed anywhere on the wall, to the smartphone application. About 50 % of the controls are battery-powered with battery life from 3 to 5 years. The batteries ensure quiet operation and thanks to micro switches, smooth operation is also ensured. Other system units that provide more frequent communication between components or regularly perform measurements (e.g. temperature) are continuously powered from the network.

Installation recommendations and their rules can be found in the iNELS RF Control Installation Manual:
www.elkoep.com/inels-rf-control

Benefits of RFIO Protocol:
- Communication is low-energy and reliably transfers small data packets.
- No fees or licenses required.
- It does not overlap the communication space with unaddressed commands.
- Frequency used does not interfere with Wi-Fi/Bluetooth devices.
- Setting up communication between the components is not subject to work with a computer or system.

Additional benefits of the RFIO² protocol:
- Products labelled „ RFIO²" allow you to set selected components as repeaters.
- For components, it is easy to update FW using the RFAF/USB service device (except RFGSM-220).
- Selected features also allow communication with RFMD-100, RFWD-100 and RFSD-100 / RFSD-101 detectors.
- Backward compatibility with RFIO components is preserved.



Price of installation:

Energy savings:

CONTROLLERS

Wireless wall controller

4 button controller - key fob

Wireless remote controller with display

Wireless contact converter

Wireless contact converter

Technical parameters	RFWB-20/G	RFWB-40/G	RF-KEY	RF Pilot	RFSG-1M	RFIM-20	RFIM-40
Number of channels*	2	4	4	40	1	2	4
Power supply	3 V battery CR 2032		3 V battery CR 2032	2 x battery 1.5V AAA / R03	110-230 V AC, (AC 50-60 Hz)	3V bat. CR2477	2x 3V bat. CR2032
Mounting	on surfaces		any	any	for independently mounting	in an installation box	
Design	LOGUS⁹⁰		key chain	remote control	1-MODUL	MINI, in an installation box	
Protocol	iNELS RF Control		iNELS RF Control	iNELS RF Control	iNELS RF Control	iNELS RF Control	

* Enable to control units independently of each other

The wireless controller is used to control switches and dimmers (lights, gate, garage door, blinds, etc.). The flat design with level base makes it ideal for fast installation on any surface (fixation with adhesive or screws in the installation box).

The key alarm is used to control switches and dimmers (lights, gate, garage door, blinds, etc.). Designed in black and white with laser printing.

The RF Pilot remote control is a central controller for switching electrical appliances and equipment, dimming lights, controlling blinds, etc. Display of room temperature, battery status, date and time directly on display. Bidirectional communication, transmits and receives commands and displays the status of units.

This wireless contact converter is especially appropriate for wireless transmission of information on switching HDO. Thanks to the network supply, it can also be used for partial transmission of information for control of an appliance or device.

RFIM-20B: the wireless contact converter changes your existing button / switch to a wireless one. Two inputs enable control of two units independent.
RFIM-40B: the wireless contact converter changes your existing button to a wireless one. Four inputs enable control of four units independently.

SYSTEM UNITS

Wireless touch unit

Smart RF box

Repeater to extend the range

Technical parameters	RF TOUCH/W	RF TOUCH/B	eLAN-RF-003	eLAN-RF-Wi-003	RFRP-20
Number of channels*	40		40		-
Power supply	110-230 V AC, from the side 12 V DC	100 - 230 V AC	10 - 27 V DC / 200 mA SELV	10 - 27 V DC / 300 mA SELV	230-250 V AC, 120 V AC (50-60 Hz)
Mounting	on surfaces	in box	any		plug into a socket
Design	LOGUS⁹⁰		design box		box with plug-in socket
Protocol	iNELS RF Control		iNELS RF Control		iNELS RF Control

* Enable to control units independently of each other

The wireless touch unit RF Touch is a central controller for heating, switching electrical appliances and equipment, dimming lights, controlling blinds, etc. It transmits and receives commands from units and processes set programs for automatic control. Thanks to bi-directional communication, it visualizes the current status of individual units.

eLAN-RF-003: is connected by network cable LAN to the home network (router) and communicates with your smart phone.
eLAN-RF-Wi-003: is connected to the home network (router) via the Wi-Fi network and communicates with your smart phone. Connection to the home network is also possible via network LAN cable.

Radio frequency signal repeater this signal repeater is used to extend the range between the controller and unit by up to 200 meters. It is designed to transmit a signal to up to 20 units.
Produced in 5 designs of sockets and plugs.

SYSTEM UNITS

Energy gateway

SWITCHES

Wireless switch unit

Wireless switch unit

Wireless switch unit

Wireless switch unit

Technical parameters	RFPM-2M	RFSA-11B	RFSA-61B	RFSA-62B	RFSA-61M
Number of contacts	-	1x NO ($AgSnO_2$)		2x NO ($AgSnO_2$)	1x changeover ($AgSnO_2$)
Rated current	-	16 A / AC1		8 A / AC1	16 A / AC1
Load	-	4000 VA / AC1, 384 W / DC		2000 VA / AC1	4000 VA / AC1, 384 W / DC
Power supply	230 V AC / 50 - 60 Hz	230 V AC, 120 V AC, 12-24V AC/DC (AC 50-60 Hz)			110 - 230 V AC / 50-60 Hz
Number channel	-	1	1	2	1
Protocol	iNELS RF Control	iNELS RF Control²	iNELS RF Control²	iNELS RF Control²	iNELS RF Control²

The energy gateway is a central device for assessing energy consumption (electricity, water, gas). It acts as an interface between the pulse converter RFTM-1 and your smartphone. The Energy Gateway allows you to connect up to 8 pulse transducers.

The switching unit with 1 output channel is used to control appliances, lights (easy to integrate it to control garage doors or gates).
RFSA-11B: single-function design - switch on / off .
RFSA-61B, RFSA-62B: multi-function design – button, impulse relay and time function of delayed ON or OFF with time setting of 2 s-60 min.
The BOX design lets you mount it right in an installation box, a ceiling or controlled appliance cover.

Switching unit with 1 output channel is used for controlling appliances, sockets or lights. 1-MODUL. The package includes an internal antenna AN-I, in case of locating the element in a metal switchboard, you can use the external antenna AN-E for better signal reception.

SWITCHES

Wireless switch unit

Wireless switch unit with the input

Two-channel switch component with button input

Switching socket

Switch unit for outdoor use

Technical parameters	RFSA-66M	RFSAI-61B	RFSAI-62B	RFSC-61	RFUS-61
Number of contacts	3x chang. ($AgSnO_2$), 3x NO ($AgSnO_2$)	1x NO ($AgSnO_2$)	2x NO ($AgSnO_2$)	1x NO ($AgSnO_2$)	1 x changeover ($AgSnO_2$)
Rated current	8 A / AC1	16 A / AC1	8 A / AC1	16 A / AC1	12 A / AC1
Load	2000 VA / AC1	4000 VA / AC1, 384 W / DC	2000 VA / AC1, 192 W / DC	4000 VA / AC1, 384 W / DC	3000 VA / AC1, 384 W / DC
Power supply	110-230 V AC/50-60 Hz, 12-24V AC/DC SELV	230 V AC, 120 V AC, 12-24V AC/DC (AC 50-60 Hz)	230 V AC, 120 V AC, 12-24V AC/DC (AC 50-60 Hz)	230-250 V AC, 120 V AC (AC 50-60 Hz)	230 V AC, 120 V AC, 12-24V AC/DC (AC 50-60 Hz)
Number channel	6	1	2	1	1
Protocol	iNELS RF Control²	iNELS RF Control²	iNELS RF Control²	iNELS RF Control²	iNELS RF Control²

Switching unit with 6 output channels is used for independent control of up to 6 appliances, sockets or lights. 3-MODUL.
The package includes an internal antenna AN-I, in case of locating the element in a metal switchboard, you can use the external antenna AN-E for better signal reception.

The switching unit with 1 output channel is used for controlling appliances and lights. It is possible to connect the existing button to the internal terminal in the wiring. The BOX design lets you mount it right in an installation box, a ceiling or controlled appliance cover.

Switch component with 2 output channels serves as control for appliances and lights. You can connect 2 existing buttons in the wiring to the internal terminals. The BOX design lets you mount it right in an installation box, a ceiling or controlled appliance cover.

The switched socket with 1 output channel is used to control fans, lamps, heaters and appliances, which are connected by a power cord. Thanks to the socket design, installation is simple by direct insertion into the existing socket. Produced in 5 designs of sockets and plugs.

The switching unit with 1 output channel is used for controlling appliances, sockets or lights. The increased IP65 protection is suited to mounting on the wall or in harsh environments such as the cellar, garage or bathrooms.

SWITCHES

Switch unit for shutters

Switch unit for shutters

LIGHTING

Wireless bulb

Wireless twilight switch

Technical parameters	RFJA-12B	RFJA-32B	RF-RGB-LED-550	RFSOU-1
Number of contacts	2x NO ($AgSnO_2$) (230 V, 120 V) / contactless switch. (24 V)		-	-
Rated current, Load	8A / AC1, 2000 VA / AC1 (not available 12-24 V DC)		-	-
Power supply	230 V AC, 120 V AC, 5-24 V DC (AC 50-60 Hz)		100-240 V AC / 50/60 Hz	2x 1.5 battery AAA
Range in open space	up to 100 m		up to 20 m	up to 160 m
Protocol	iNELS RF Control²		iNELS RF Control	iNELS RF Control

The switching unit for blinds has 2 output channels used to control garage doors, gates, blinds, awnings, etc.
RFJA-12B/230V (120V): connection of switched load 2x 8 A (2x 2 000 W).
RFJA-12B/24VDC: contactless quiet switching.
RFJA-32B/230V (120V): connection of switched load 2x 8 A (2x 2 000 W), with the ability to connect existing buttons.
RFJA-32B/24VDC: contactless quiet switching with the ability to connect existing buttons.

The lamp has an implemented wireless unit, which receives commands from system units of iNELS RF Control (link) and sends a signal for visualization of the current status ON/OFF, brightness.
RF-RGB-LED-550: colored lamp. Luminous flux up to 550Lm, with power 9W.

The wireless twilight dimmer measures the light intensity and based on a set value, it sends the command to switch on the lights or pull the blinds up or down.The increased IP65 protection is suited to mounting on the wall or in harsh environments.

DIMMERS

Dimming actuator for LED (RGB) strips, 3-channel

Universal dimmer (flush mounted)

Universal dimmer (DIN rail mounted)

Wireless Dimmer Switch

Dimming socket

Technical parameters	RFDA-73M/RGB	RFDEL-71B	RFDEL-71M	RFDW-71	RFDSC-71
Contactless	3 x MOSFET	2 x MOSFET	2 x MOSFET	2 x MOSFET	2 x MOSFET
Supply voltage	12-24 V DC stabilized	230V AC/50 Hz / 120V AC/60 Hz	230V AC/50 Hz / 120V AC/60 Hz	230V AC/50 Hz / 120V AC/60 Hz	230-250 V AC5, 120 V AC (AC 50-60 Hz)
Range in open space	up to 160 m	up to 160 m	up to 160 m	up to 160 m	up to 160 m
Load	LED, RGB LED	R; L; C; LED; ESL max. 160W / 80W*	R; L; C; LED; ESL max. 600 W / 300 W*	R; L; C; LED; ESL max. 160W / 80W*	R; L; C; LED; ESL - 300 W / 150 W*
Protocol	iNELS RF Control²	iNELS RF Control²	iNELS RF Control²	iNELS RF Control²	iNELS RF Control²

* capacity for power factor cos φ=1.
The power factor of dimmable LEDs and ESL bulbs ranges from cos φ = 0.95 up to 0.4. An approximate value of maximum load may be obtained by multiplying the load capacity of the dimmer by the power factor of the connected light source.

The dimmer for LED strips is used for independent control of 3 single-color LED strips or one RGB LED strip. The expanded selection of control modes enables it to be combined with:
a) Controllers and System units iNELS RF Control,
b) by control signal 0(1)-10V,
c) by connecting to iNELS BUS using a DAC ballast.

The universal built-in dimmer is used to regulate light sources: R, L, C, ESL, LED. Thanks to setting the min. brightness by potentiometer, you will eliminate flashing of the LED and ESL light sources. Connection of the existing button on the control input „S" enables combination of wireless control with classic (wired) control.

The universal modular dimmer is used to regulate light sources: R, L, C, ESL, LED. Control can be performed by:
a) Controllers and System units iNELS RF Control
b) by control signal 0(1)-10V
c) potentiometer
d) existing button in the installation.

Wireless glass designed switch with integrated dimming component which serves to regulate light sources: R, L, C, ESL, LED. 4 channel switch version allows you to control the integrated dimmer as well as other components of the installation.

The dimmed socket is used to control light sources that are connected by power cord - especially lamps: R, L, C, ESL, LED. Thanks to the socket design, installation is simple by direct insertion into the existing socket. Produced in 5 designs of sockets and plugs.

DIMMERS

MONITORING UNIT

Analog controller

Wireless flood detector

Wireless pulse converter

Motion detector

Window / Door detector

Technical parameters	RFDAC-71B	RFSF-1B	RFTM-1	RFMD-100	RFWD-100
Contactless	0 (1)-10 V; 1x $AgSnO_2$, switches the phase conductor	-	-	-	-
Supply voltage	110 - 230 V AC / 50 - 60 Hz	1 x 3 V battery CR 2477	2x 1.5 battery AAA	battery 2 x 1.5 V AA	battery 1 x 3 V CR2032
Range in open space	up to 200 m	up to 160 m	up to 160 m	up to 160 m	up to 160 m
Load	analog: max.10 mA rele: 4000 VA / AC1	-	-	-	-
Protocol	iNELS RF Control²	iNELS RF Control	iNELS RF Control	iNELS RF Control²	iNELS RF Control²
	The analog controller with output 0(1)-10V is used for: a) dimming fluorescent lamps (using a dimmable ballast), b) dimming LED panels c) Control of thermal actuators, d) control of other controllers	Upon detecting water, the flood detector immediately sends a signal to the switched unit, which further switches on a pump, GSM gate (link to RFGSM-220M) or closes a pipe valve.	It measures the power consumption and sends it to the system device where it is displayed.	The motion detector PIR is used to detect persons moving inside the building interior. The detectors are compatible with switching components marked with the iNELS RF Control² RFIO² communication protocol and the eLAN-RF system components.	The window / door detector is used to detect opening where activation occurs when the magnet and the sensor become separated. The detectors are compatible with switching components marked with the iNELS RF Control² RFIO² communication protocol and the eLAN-RF system components.

MONITORING UNIT

Smoke detector

TEMPERATURE CONTROL

Switch unit with a temperature sensor

Wireless temperature sensor

Wireless thermovalve

Technical parameters	RFSD-100	RFSD-101	RFSTI-11B	RFTI-10B	RFATV-1
Power supply	battery 4 x 1.5 V AA		230 V AC,120 V AC, 12-24V AC/DC (AC 50-60 Hz)	1 x 3V battery CR 2477	2 x 1.5 V battery AA
Range in open space	up to 160 m		up to 160 m	up to 160 m	up to 100 m
Design	design box		MINI, in an installation box	MINI, in an installation box	design box
Protocol	iNELS RF Control²		iNELS RF Control²	iNELS RF Control	iNELS RF Control
	The smoke detector is used for timely warning against a fire started in residential and commercial buildings. The detector uses a scanning method by means of an optical chamber having a more sensitive reaction to detection of smoke. The detectors are compatible with switching components marked with the iNELS RF Control² RFIO² communication protocol and the eLAN-RF system components. **RFSD-101:** plus temperature, humidity and lighting.		The temperature unit measures the temperature by external sensor, and controls the heating circuit (electric underfl oor heating, air conditioning, boiler, etc.). These can be combined with system units: smart RF box eLAN-RF, wireless controller RFTC-50/G or touch unit RF Touch.	The temperature sensor measures the temperature by internal sensor, which it sends in regular intervals to the system unit. Option of connecting an external sensor to the terminals THERM. The temperature sensor can be placed anywhere thanks to battery power.	The wireless thermostat measures room temperature by internal sensor; based on a set program in the system unit, it opens / closes the radiator valve. It can be combined with one of three system units: smart RF box eLAN-RF, wireless controller RFTC-100/G or touch unit RF Touch.

TEMPERATURE CONTROL

Wireless temperature controllers

CAMERA

IP camera

RF SETS

Transmitter and receiver combinations

Technical parameters	RFTC-10/G	RFTC-50/G	iNELS CAM	RF SET
Power supply	2 x 1.5V battery AAA		5 V DC adapter	They are supplied as a combination of the selected transmitter (keychan, wireless switch) and receiver.
Range in open space	up to 100 m		-	Basic sets, indicated as **RFSET-xxxx-Z1**, are designed to satisfy the most common user requirements. Basic RF sets are combined with receivers: RFSA-11B.
Design	LOGUS⁹⁰		-	
Protocol	iNELS RF Control²		-	Multifunction sets, under the designation **RFSET-xxxx-F1**, provide the user with comfort in the form of rich options in functions and selection of from up to seven preset programs of actuators. Multifunctional sets are combined with the receivers: RFSA-61B, RFSA- 61M.

Compatible

	RFTC-10/G	RFTC-50/G
RF Touch	✓	×
eLAN-RF	✓	×
RFSA-6x	✓	✓
RFSTI-11B	×	✓
RFATV-1	×	×

RFTC-10/G: The simple controller in design LOGUS⁹⁰ measures the room temperature by internal sensor, and based on the
set temperature, it sends a command to control heating. The backlit LCD display displays the current and set temperature, status (ON/OFF), battery status, etc.
RFTC-50/G: The wireless controller in design LOGUS⁹⁰ measures the room temperature by internal sensor, and based on the set temperature, it sends a command for heating / cooling. The backlit LCD display displays the current and set temperature, status (ON/OFF), battery status, day of the week, current time, etc.
Manual control by buttons on the unit.

The cloud video camera DCS-933L, capable of scanning both day and night, is a universal monitoring solution for your home or office. As opposed to a standard web camera, D-Link is an independent system, which can transmit high quality images without the need for a computer connection. It is equipped with a motion detector, and features the function of a Wi-Fi extender/ repeater.

ACCESSORIES

Service Key

Flood probe for RFSF-1B

Thermo sensors for thermostats

Thermodriver

Internal antenna, External antenna

Current transformer

Sensors for RFTM-1

RFAF/USB	FP-1	TC, TZ	TELVA	AN-I, AN-E	CT50	LS, MS, WS
The RFAF / USB Service Key (in conjunction with the RF_analyzer) is designed for iNELS RF Control system partners.	Option of connecting an external probe FP-1 (not included in supply - max. wire length 1 m.	Temperature sensors are produced from thermistor NTC. Offered length is 10 cm, 3, 6 or 12m. **TC:** Types of thermo sensors for range 0..+70°C. Cable CYSY is used, 2Dx0.5mm, PVC insulation. **TZ:** Types of thermo sensors for range -40..+125°C. Cable with silicone insulation.	In the iNELS RF Control system, used to regulate heating **Telva 230 V** and **Telva 24 V** with any system switching actuator. Usage: The thermovalve TELVA is intended for zone or individual regulation with high differential pressures for all thermostatic valves. Regulating thermostatic valves of floor, radiator and convector heating.	The internal antenna AN-I is included in the standard package: RFSG-1M, RFGSM-220M, eLAN-RF-003, eLAN-RF--Wi-003, RFDA-73/RGB, RFSA-61M, RFSA-66M, RFDEL-71M, RFPM-2. Into plastic switchboard. Sensitivity 1 dB. The external antenna AN-E is supplied on request only. For mounting into metal switchboard. Cable length 3m. Sensitivity 5 dB.	The unit RFPM-2M enables connecting up to three current transformers CT50 to each other for measuring electricity.	**LS:** The LED sensor scans LED impulses on the meter, which indicates consumption by flashing. **MS** (Magnetic sensor), **WS** (Magnetic sensor water meter): scans movement of the numeral, upon which a permanent magnet is placed.

LIGHTING

TEMPERATURE

NEW

Automatic light control

NEW

Overheating protection of room

NEW

Temperature control

NEW

Wireless switch unit

Technical parameters	RFSAI-161B	RFSTI-111B	RFTC-150/G	RFSA-166M
Power supply	230 V AC, 120 V AC, 12-24V AC/DC (AC 50-60 Hz)	230 V AC, 120 V AC, 12-24V AC/DC (AC 50-60 Hz)	battery 2 x 1.5 V AAA	110-230 V AC/50-60 Hz, 12-24V AC/DC SELV
Range in open space	up to 160 m	up to 160 m	up to 100 m	up to 100 m
Design	MINI, in an installation box	MINI, in an installation box	LOGUS^{90}	3-MODUL
Protocol	iNELS RF Control^2	iNELS RF Control^2	iNELS RF Control	iNELS RF Control^2
	Switch component with one output channel which is used in combination with detectors for automatic lighting control. Thanks to its unique functionality it is especially suited for hotels.	Temperature component with one output channel serves as protection against overheating of the room, where the influence of temperature can cause damage to furniture and appliances. It is particularly suitable for rooms with a tropical climate.	The wireless controller RFTC-150/G in design LOGUS^{90} measures the room temperature by internal sensor. On the basis of a set program it sends commands to the switching component RFSA-166M Switching fan coil.	Thanks to the 6-channel design of the switching component it can control the heating / cooling mode and with 3 speeds, the RE6 output channel can be used to control appliances, sockets or lights. The package includes an internal antenna AN-I, in case of locating the element in a metal switchboard, you can use the external antenna AN-E for better signal reception.

ACCESS CONTROL

Multifunctional in front of Controller

Multifunctional in front of Controller

Card Switch

Card Holder

Technical parameters	RFPCR-31/G	RFGCR-31	RFGCH-31	21031 & 90731
Power supply	110 - 230 V AC / 50-60 Hz	110 - 230 V AC / 50-60 Hz	110 - 230 V AC / 50-60 Hz	AC 230 V
Range in open space	up to 100 m	up to 100 m	up to 100 m	-
Design	LOGUS^{90}	glass design	glass design	LOGUS^{90}
	Multifunctional in front of controller included: RFID card reader, bell button, "Do Not Disturb" and "Make Up Room" signalling. Available in LOGUS^{90}. Communication: wireless 868 MHz (iNELS RF).	Multifunctional in front of controller included: RFID card reader, bell button, "Do Not Disturb" and "Make Up Room" signalling. Available in glass design in white (RFGCR--31/W) or black (RFGCR-31/B) colour. Communication: wireless 868 MHz (iNELS RF).	Card holder with RFID reader. Allows detect fake card "Do Not Disturb", "Make Up Room" signalling "Master OFF" button. Available in glass design in white (RFGCH--31/W) or black (RFGCH-31/B) colour.	After inserting hotel card to card switches it will activate automatic regulation of the lights in the room.

Wired electro-installation

Smart home & building solution

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iNELS® BUS System

The BUS electro installation iNELS BUS System is a unique solution for electrical installation in the implementation of new projects of houses, villas, apartment buildings, office buildings, hotels, restaurants, wellness centres or perhaps even warehouse or production hall.

The ability to deploy this solution in such a wide variety of different buildings with various purposes and uses lies in its modularity. Thanks to the modular design, the system is very flexible and allows on the one hand, a solution of single-purpose tasks such as control of lighting in restaurants, and on the other hand, solving complex control systems for heating, ventilation, cooling, lighting and shading of office buildings. A complete range of control units designed from glass for management of hotel rooms is in the market unique.

Thanks to its modularity is very easy to customize the size of the system and to that effect create a cost effective solution.

Smart homes and buildings are accompanied by three basic ideas, namely savings, comfort and safety, the first two ideas may at first glance contradict each other. However, the main objective of smart home or building equipped with the iNELS solution is to attain the optimum indoor environment while achieving the most efficient operation of all system.

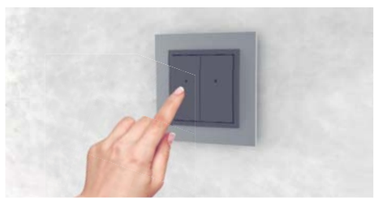
In homes and buildings the optimal internal environment is very important because people nowadays spend up to 80 % of their time inside buildings. It is also shown that indoor environments, where we talk about thermal comfort, lighting comfort and indoor air quality significantly affect the mood and the effectiveness of people.

The iNELS system allows connection of wide range of sensors (temperature, light intensity, carbon dioxide, humidity, and pressure) and detectors (movement, opening doors and windows, gas leakage, smoke, flooding) whose values are constantly evaluated. At the same time iNELS allows the connection of all the technologies that are installed in the building, which continued to significantly increase operational efficiency or comfort, for example; in the case of integrating the guest room management system with the receptionist Fidelio system, which automatically during check-in, sends the room requests for execution, a welcome scene (optimum temperature, comfortable lighting scene, music etc.).

What are the benefits of BUS controlling?

- Save energy by regulating lighting and heating properly
- Control of blinds, awnings, exterior or internal window shutters
- Dimming lights, lighting scenes
- control of appliances or electrical devices
- Control access gates, garage doors
- Logical and central functions (exit button, ...)
- Manual and automatic control mode
- Preventing undesirable opening of a window or a door
- Responding to the movement of people (authorized and unauthorized)
- Remote monitoring via smartphone, tablet or laptop
- Possibility to control via the iNELS Touch Panel 10"
- Integration of third-party devices (cameras, air conditioning, ...)

More systems can be controlled by iNELS:



Wall controller

Key Fob

Remote control

Touch panel

Smartphone

iTP – iNELS Touch panel

CENTRAL UNITS

Central units CU3-01M, CU3-02M and CU3-03M are the brain of the iNELS BUS system, a "mediator" between user's programming environment and controllers, units and actuators connected to the bus.

CU3-01M

- CU3-01M and CU3-02M are central units' of the iNELS system and mediators, between user software interface and controllers, units and actuators connected to the BUS.
- It's possible to directly connect up to 2 lines of BUSes in to CU3-01M and CU3-02M, and on each BUS we can connect up to 32 iNELS3 units.
- The main difference between CU3-02M and CU3-01M is that CU3-02M is moreover equipped by RF module which enables communication with selected units from iNELS RF Control system.
- User´s project and retentive data are stored in a non-volatile internal memory hereby data are backed up without the supply voltage. Real time clock (RTC) backup for 10 days.
- Power supply controlling system - network voltage and the status of the backup battery.
- Possibility of setting time synchronization via NTP server.
- The RJ45 Ethernet port's connector is located on the front panel of the unit, the transmission speed is 100 Mbps.
- For CU3-01M (02M) it is possible to use 4 potential-free inputs for connecting external controllers (buttons, switches, sensors, detectors, etc.) and 2 analog inputs 0 - 30V.
- CU3-01M (02M) comes with OLED display that shows the current status and enables settings (network settings, date, time, service) of the central unit CU3-01M (02M).
- Movement in the menu CU3-01M (02M) using arrows on the front panel.
- CU3-01M (02M) in 6-MODULE are designed for mounting into a switchboard on the EN60715 DIN rail.

CU3-02M

- CU3-03M is a new, enhanced version of CU3-01M and CU3-02M.
- The new HW equipment allows communication with the DALI bus to connect up to 64 electronic ballasts (the internal power supply of the CU3-03M is capable of supplying connected ballasts up to a nominal value of 64 mA).
- RF Communication Interface for Controlling Wireless Receivers iNELS RF Control (the current list of supported receivers is available in the iNELS Installation Guide).
- The CU3-03M is equipped with three Ethernet ports, one for Ethernet (100 Mbps) connections and two for CU3-03M controllers.
- The CU3-03M has a TFT display that shows the current status and allows some basic unit parameters such as network setup, date, time, or service.
- The movement in the CU3-03M menu is possible by using the directional buttons on the front panel.

NEW

CU3-03M

SYSTEM UNITS

Power supply

Is a stabilized switching power supply, with the total power of 100 W.
Power supply: 100 - 250 V AC.
Output voltage: DC/max. load: 27.6 V / 3.6 A and 12.2 V / 0.35A, 6-MODULE.

External master BUS

MI3-02M provides expansion of the amount of units iNELS3 connected to the central unit CU3-01M or CU3-02M of two other lines of BUS (i.e. about 2x32 peripheral units).
1-MODUL.
The external master **MI3-02M / ETH** allows two additional BUS branches (i.e., 2x 32 peripheral units) to extend the number of connected iNELS3 peripheral units to the CU3-01M, CU3-02M or CU3-03M central unit.

BUS separator from power supply

Units BPS3-01M and BPS3-02M serve for impedance separation of BUS from supply voltage power.
BPS3-01M allows you to connect one BUS with max. load 3 A.
BPS3-02M allows you to connect two separate BUS1 and BUS2 with max. load 1 A for each line.
1-MODUL.

GSM communicator

It serves for communication with the iNELS system via commands sent in short SMS messages from mobile phone GSM. GSM3-01M connects to the central unit CU3 via the EBM system BUS.
3-MODULE.

Technical parameters	PS3-100/iNELS	MI3-02M	MI3-02M/EHT	BPS3-01M	BPS3-02M	GSM3-01M
Output	27.6 V/3.6 A, 12.2 V/0.35 A	2x BUS iNELS3	2x BUS iNELS3	1x BUS	2x BUS	-
Power supply	100 - 250 V AC	BUS 27 V DC		BUS 27 V DC		BUS 27 V DC
Rated current	-	25 mA (at 27 V DC)	max. 75mA (at 27 V DC)	8 mA (at 27 V DC)	15 mA (at 27 V DC)	250 mA (at 27 V DC) / max. 1A

SWITCHING ACTUATORS

Switching actuator, 1-chanel, 2-chanel

Switching actuator, 2-channel

Switching actuator, 4-channel

Switching actuator, 6-channel

Switching actuator, 12-channel

Technical parameters	SA3-01B	SA3-02B	SA3-02M	SA3-04M	SA3-06M	SA3-012M
Number of contacts	1 x NO	2x changeover	2 x changeover	4 x changeover	6 x changeover	12x NO
Switching current	16 A / AC1	8 A / AC1	16 A / AC1	16 A / AC1	8 A / AC1	8 A / AC1
Switching output	4000 VA	2000 VA	4000VA / AC1, 384W/DC	4000 VA / AC1, 384 W/DC	2000 VA / AC1, 192 W/DC	2000 VA / AC1, 192 W/DC
Power supply	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC + 230 V AC (120 V AC)
Rated current from BUS	30 mA (at 27 V DC)	50 mA (at 27 V DC)	50 mA (at 27 V DC)	70 mA (at 27 V DC)	60 mA (at 27 V DC)	5 mA (at 27 V DC)
	Actuators are designed for switching of one (SA3-01B), respectively two (SA3-02B) of various appliances and loads relay output (potentialless contact). Actuators are equipped with a temperature input for connecting an external two-wire temperature sensor TC / TZ. Mounting into an installation box.	The actuator is designed for switching up to two various appliances and loads relay output (potentialless contact). Thanks to changeover contacts, it can be used to control one 230 V power (such as blinds, shutters or awnings). 1-MODUL	The actuator is designed for switching to four various appliances and loads relay output (potential free contact). LEDs on the front panel signal the status of each output. 3-MODUL	The actuator is suitable for operating discontinuously controlled thermo drives in the distributor underfl oor heating. The relays are divided into two groups, the group of four relays on the bottom terminal switches the common potential, a pair of relays on top of the terminal switches second common potential. 3-MODUL	SA3-012M is a switching actuator containing 12 independent relays with NO potentialless contacts, with the fact that switches the same potential. The actuator is powered via BUS and simultaneously by an AC voltage: **SA3-012M** - 230V AC, **SA3-012M/120V** - 120V AC. 6-MODULE.

SWITCHING ACTUATORS

NEW

Switching actuator, 22-channel

NEW

Switching actuator, 22-channel

Shutter actuator

NEW

Shutter Actuator, 18-channel

NEW

Fan Coil Control Actuator

Technical parameters	SA3-022M	EA3-022M	JA3-02B/DC	JA3-018M	FA3-612M
Number of contacts	22x (NO / changeover)	22x (NO / changeover)	1x 12 - 24 V DC	9x changeover	4x (0)-10V, 8x Re
Switching current	according to output (6A / 10A)	according to output (6A / 10A)	0.85 A*	4 A/AC15	3x analog, 3x digital
Switching output	according to output	according to output	-	1000VA/ AC 15, 100 W/DC	according to output
Power supply	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27V DC + 230 V AC (120 V AC)	BUS 27 V DC
Rated current from BUS	100 mA (at 27 V DC)	100 mA (at 27 V DC)	60 mA (at 27 V DC)	5 mA (at 27 V DC)	5 mA (at 27 V DC)
* Maximum output time with rated current of 0.85A is for 10 min.	SA3-022M is an expansion module for the CU3-03M central unit, designed primarily for controlling the hotel room. 6-MODULE.	EA3-022M is an expansion module for the CU3-03M central unit, designed primarily for controlling the hotel room. 6-MODULE.	Actuator serves to control blinds, shutters, garage doors, entrance gates, etc. The unit is also equipped with two analog digital inputs (AIN/DIN), which can be used to connect two potential free contacts or a single external temperature sensor TC/TZ. Mounting into an installation box.	JA3-09M is an actuator designed for control of roller shutters, blinds, awnings, garage doors, entrance gates, etc. The actuator is powered via BUS and simultaneously by an AC voltage: **JA3-018M** - 230V AC, **JA3-018M/120V** - 120V AC. 6-MODULE	FA3-612M is a unit (actuator) designed to control fan coil units using analogue / digital inputs and analog / relay outputs. 6-MODULE

DIMMING ACTUATORS

NEW

Dimming actuator, 6-channel

Universal dimming actuator, 2-channel

Dimming actuator for electronic ballasts, 2-channel

Dimming actuator, 3-channel

Gateway iNELS - DALI/DMX

Technical parameters	DA3-06M	DA3-22M	LBC3-02M	DCDA-33M	EMDC-64M
Output	6x contactless outputs, 2x MOSFET	2x MOSFET	2x 0(1)-10V / 10 mA, 2x changeover 16 A/AC1	3x MOSFET	DALI (64 ch) / DMX (32 ch)
Input	-	2 x button, 1 x temperature	-	-	-
Power supply	BUS 27 V DC+230 V AC (120 V AC)	BUS 27 V DC+230 V AC(120 V AC)	BUS 27 V DC	BUS 27 V DC + 12-60 V	AC 230 V (max. 100 mA)
Rated current from BUS	5 mA (at 27 V DC)	5 mA (at 27 V DC)	60 mA (at 27 V DC)	40 mA (at 27 V DC)	**DALI power supply:** 16 V, 250 mA
	DA3-06M is a universal six-channel dimmer actuator that controls the brightness of dimmable ESL, LED and RLC light sources with 230V power. The actuator is powered via BUS and simultaneously by an AC voltage: **DA3-06M** - 230V AC, **DA3-06M/120V** - 120V AC. 6-MODULE.	Universal dimming two-channel actuator for dimming ESL, LED and RLC loads, 2x 400 VA, 2x controlling input, 1x temperature input TC/TZ. The actuator is powered via BUS and simultaneously by an AC voltage: **DA3-22M** - 230V AC, **DA3-22M/120V** - 120V AC. 3-MODULE.	Analog two-channel actuator for controlling dimmable electronic ballasts, 2x analog signal 1-10V, 2x switching contact 16 A, LED indicator of relay status. 3-MODULE.	Dimming actuator is designed for dimming RGB and LED light sources with power supply 12-24 V DC, which are controlled by variable current. Controlling interface DMX, DALI and BUS. 3 channels, max. 2A on one channel. 3-MODULE.	The unit EMDC-64M is designed to control DALI electronic ballasts and DMX receivers from the iNELS system. EMDC-64M enables control of up to 64 independent electronic ballasts DALI (Digital Addressable Lighting Interface) for fluorescent lamps, LEDs and other light sources. 3-MODULE.

THERMO INPUT

Binary input unit

Binary input unit

Binary input unit, 14-channel

Temperature input, 1-channel and 4-channel

Temperature input, 6-channel

Technical parameters	IM3-20B	IM3-40B	IM3-80B	IM3-140M	TI3-10B	TI3-40B	TI3-60M
Number of inputs	2x binary	4x binary	8x binary	14x binary	1x temper.	4x temper.	6x temperature
Temperature sensors	1x TC/TZ		1x TC/TZ	-	TC, TZ, Ni1000, Pt1000, Pt100		TC, TZ, Ni1000, Pt1000, Pt100
Power supply	BUS 27 V DC		BUS 27 V DC	BUS 27 V DC	BUS 27 V DC		BUS 27 V DC
Rated current from BUS	20 mA (at 27 V DC)		20 mA (at 27 V DC)	25 mA (at 27 V DC)	20 mA (at 27 V DC)		45 mA (at 27 V DC)
	Binary input units are used for connection of 2 or 4 devices with potential-less contacts (PIR, button, etc.), 1x temperature input TC/TZ, output for power supply detectors 12 V DC/75 mA. Mounting into an installation box.	Binary input units are used for connection of 8 devices with potential-less contacts (PIR, button, etc.), 1x temperature input TC/ TZ, output for power supply detectors 12 V DC/75 mA. Mounting into an installation box.	The binary input unit is designed to connect up to 14 devices with potential free contact (PIR, button, etc.), 14x binary input, output for power supply detectors 12 V DC/150 mA. 3-MODULE	For connecting 1x/4x temperature sensor TC, TZ, Ni1000, Pt1000 or Pt100. Mounting into an installation box.	For connecting 6x temperature sensor TC, TZ, Ni1000, Pt1000 or Pt100. 3-MODULE.		

CONVERTERS

Analog-digital converter

Digital-analog converter

Digital-analog converter

WALL UNITS AND CONTROLLERS

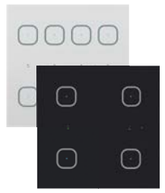
Wall group controllers with low-upstroke control

Wall group controllers with low-upstroke control

Technical parameters	ADC3-60M	DAC3-04B	DAC3-04M	WSB3-20, WSB3-20H	WSB3-40, WSB3-40H
Output	-	4 x 0(1) - 10 V / 10 mA	4 x 0(1) - 10 V / 10 mA	-	-
Input	6 x analog.; 0-10 V; 0-20 mA	1 x temperature	1 x temperature	2 x DIN / 1x temperature	2 x DIN / 1x temperature
Power supply	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	100 mA (at 27 V DC)	50 mA (at 27 V DC)	50 mA (at 27 V DC)	25 mA (at 27 V DC)	25 mA (at 27 V DC)
	Converter of analog signals on bus (e.g. for connecting a weather station), 4x analog input, 2x temperature input TC or TZ. 3-MODULE.	Is a converter of a digital signal to an analog voltage signal. 0(1)-10 V, for control of electronic ballasts, thermal actuators, etc., 4 channels, 1x temperature input TC/ TZ. Mounting into an installation box.	Is a converter of a digital signal to an analog voltage signal. 0(1)-10 V, for control of electronic ballasts, thermal actuators, etc., 4 channels, 1x temperature input TC/TZ. 3-MODULE.	Wall controller, 2x button, built-in temperature and humidity sensor (H version), 1x LED display. LOGUS^{90} design.	Wall controller, 4x button, built-in temperature and humidity sensor (H version), 1x LED display. LOGUS^{90} design.

WALL UNITS AND CONTROLLERS

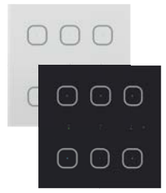
Elko smart touch screen



Glass switch button

Digital room thermo-regulator

Wall card reader



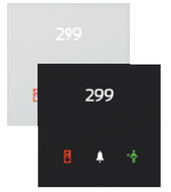
Glass wall card reader

Technical parameters	EST3	GSB3-40, GSB3-60, GSB3-80	IDRT3-1	WMR3-21	GMR3-61
Number buttons	max. 12	4 / 6 / 8	2 (for correction temper.)	2	6
Power supply	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	150 mA (at 27 V DC)	25-40 mA (at 27 V DC)	20 mA (at 27 V DC)	50 mA (at 27 V DC)	50 mA (at 27V DC)
Internal temp. sensor	-	YES	YES	-	YES
External temp. sensor	-	YES	YES	-	-
	EST3 features a 3.5 "color touchscreen with an aspect ratio of 3:4. For screen of buttons one of four diff erent matrixes buttons can be used - 2x2, 2x3, 3x3 and 3x4. LOGUS^{90} design.	The wall controller with touch controls series GSB3 is a design element (controller) in the system iNELS with elegant and comfortable control. Controllers are available in black (e.g. GSB3-40/B) and white (e.g. GSB3-40/W) variants.	Control unit for correction of circuit of heating/ cooling ±5 °C or for direct entering of the required temperature in °C, built-in temperature sensor. LOGUS^{90} design.	WMR3-21 is a wall-mounted card reader that is designed for read contactless media (smart cards, key chains, etc.), which are used for controlling access to buildings or their parts. LOGUS^{90} design.	Wall RFID card reader GMR3-61 is designed for reading of contactless media (chip cards, key fobs, tags, etc.), which are used for controlling access to buildings or parts of buildings. Is available in black (GMR3-61/B) and white (GMR3-61/W) variants.

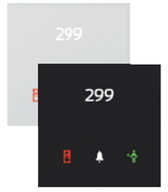
HOSPITALITY SOLUTION

NEW

Central unit



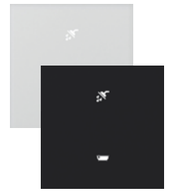
Glass card reader



Glass door bell

Technical parameters	CU3-04M	GCR3-11	GDB3-10
Power supply	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	110 mA (at 27 V DC)	100-130 mA (at 27 V DC)	100-120 mA (at 27 V DC)
Number buttons	5	3	1
Temperature measurement	-	internal	internal, 1x external TC/TZ
	CU3-04M is equipped with: - Digital input for connecting push-button controls, motion detectors or, for example magnetic detectors. - Analog inputs for connecting temperature sensors. - Digital outputs for the control of actuators, ventilator fan coil units, door locks, lighting, shading techniques, sockets and other equipment. - Analog output 0(1) -10V for controlling actuators and controlled continuously dimmable ballasts, controlled using voltage signals. - Installation BUS for connecting up to 32 BUS controllers and thermostats. - One DALI BUS for up to 64 electronic ballasts illumination (internal source CU3-04M is able to power the connected ballasts up to a nominal value of 64 mA). - RF communication interface for controlling iNELS RF Control wireless receivers (updated list of supported receiver is available in the iNELS installation manual).	Glass RFID card reader GCR3-11 is part of a comprehensive range of glass iNELS control units and can be advantageously used in all projects, e.g. guest room management system (GRMS), is available in elegant black (GCR3-11/B) and white (GCR3-11/ W) variants.	Glass info panel GDB3-10 is part of a comprehensive series of glass iNELS control units for guest room management system (GRMS), and is used to indicate the status of guest requests "Do Not Disturb" and "Make Up Room" and is available in elegant black (GDB3-10/B) and white (GDB3-10/W) version.

HOSPITALITY SOLUTION



Glass switch button with symbols

Glass switch panel

Technical parameters	GSB3-20/S	GSB3-40/S	GSB3-60/S	GSP3-100
Number buttons	2	4	6	10
Power supply	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	25-35 mA (at 27 V DC)	25-43 mA (at 27 V DC)	25-50 mA (at 27 V DC)	25-65 mA (at 27 V DC)
Temperature measurement	internal, 1x external TC/TZ	internal, 1x external TC/TZ	internal, 1x external TC/TZ	internal, 1x external TC/TZ
	GSB3-20/S is equipped with two, **GSB3-40/S** with four and **GSB3-60/S** six touch buttons whose functions can easily modify by the software. Printing is possible to customize to the investor requirements. Individual symbols can be illuminated in one of seven colours - red, green, blue, yellow, pink, turquoise and white. Glass touch panel is a design component of the iNELS system and is available in elegant black (GSB3-20/SB, GSB3-40/SB, GSB3-60/SB) and white (GSB3-20/SW, GSB3-40/SW, GSB3-60/SW) versions. All versions are in the size of the module (94x94 mm).			GSP3-100 is equipped with ten touch buttons whose functions can easily be edited using the software. The graphics of individual symbols are possible based on consultations with manufacturers to change and adapt to the requirements of the investor. Individual symbols can be any one of seven backlight colours - red, green, blue, yellow, pink, turquoise and white. Glass touch panel is a design component of the INELS system and is available in elegant black (GSP3-100/B) and white (GSP3-100/W) versions. Compared with standard glass touchscreen controllers with symbols GSB3 the GSP3-100 is one and a half times the width.

HOSPITALITY SOLUTION

Glass bedside panel
- right option

Glass bedside panel
- left option

Technical parameters	GBP3-60R	GBP3-60L
Number buttons	6	
Power supply	BUS 27 V DC	
Rated current from BUS	25-50 mA (at 27 V DC)	
Temperature measurement	1x external TC/TZ	

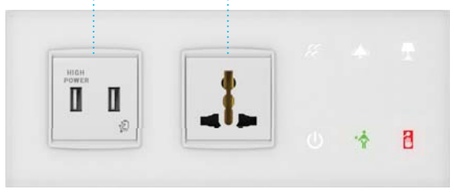
The GBP3-60 is available in several designs, making it a very flexible and effective solution for a variety of projects. The following variants are available:
- Left / Right version provides the same ease of operation from both sides of the bed.
- 2-module / 3-module design enables you to add a touch module with one or two power supply modules, network connection or multimedia.
- Black / White elegant design suitable for almost any interior. GBP3-60 can be equipped with a number of modules, for example.
- Power AC sockets: French, British, Multi, and Shockproof
- Other types of modules: USB, LAN, Media

Variants

Configure bedside panel according to your request.

L (left option)

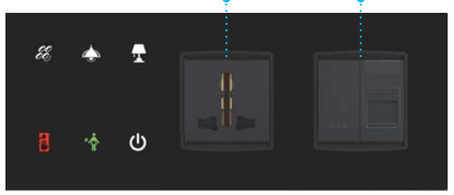
position 2 position 1



GBP3-60/WL/2F-26W-20W

R (right option)

position 1 position 2

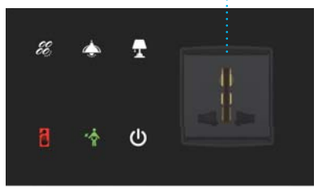


GBP3-60/BR/2F-26B-11B44B

position 1

GBP3-60/WL/1F-21W45W

position 1



GBP3-60/BR/1F-26B

Part number

Glass
button
panel
iNELS3
6 buttons

GBP3-60 /xx/xF -x-x

color	type	number of frame	position 1	position 2
B / W (black / white)	**L / R** (left / right)	**1 / 2**	our product code(s)*	our product code(s)*

* In case of 1-module choice it is necessary to pick 2x 1-module to fill up the 1 position, for example GBP3-60/WL-**21W45W.**

HOSPITALITY SOLUTION

Elko Hotel Touch screen

Glass room thermo-regulator

Glass card holder

Technical parameters	EHT3	GRT3-50	GCH3-31
Number buttons	Touch screen	5 + 2	3
Power supply	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	150 mA (at 27 V DC)	85 mA (at 27 V DC)	100-120 mA (at 27 V DC)
Temperature measurement	-	internal, 1x external TC/TZ	internal

EHT3 features a 3.5 "color touchscreen with an aspect ratio of 3:4. For screen of buttons one of four diff erent matrixes buttons can be used - 2x2, 2x3, 3x3 and 3x4.
LOGUS^{90} design.

Glass room thermo-regulator GRT3-50 is part of a comprehensive range of glass iNELS control units for guest room management system (GRMS) and serves to regulate the temperature in the room.

GCH3-31 serves for inserting the RFID card into the holder, whereby the system acquires the information about whether the hotel guest is present in the room. With this information it is possible to ensure for example Exit function with relation to energy savings in the absence of a guest in the room.

DETECTORS

Combined detector

Luminescence sensor

Technical parameters	DMD3-1	DLS3-1
Power supply	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	18 mA (at 27 V DC)	12 mA (at 27 V DC)
DALI power supply	16 V (max. 23 V)	16 V (max. 23 V)

The motion detector is used to detect people moving in the area. Using the passive scanning infrared spectrum for detection. Integrated luminescence sensor can be used for sensing current luminescence at the point of installation of the unit.

The luminescence sensor DLS3-1 is for sensing the current luminescence at the point of installation of the unit. The DLS3-1 unit is supplied in IP65 and so can be installed in the outdoor environment.

ACCESSORIES

Thermo sensors for thermostats

Thermo-valve

Internal antenna, External antenna

Technical parameters	TC, TZ, Pt100	TELVA	ANI-I, AN-E
	TC: Types of thermo sensors for range 0..+70°C. Cable CYSY is used, 2Dx0.5mm, PVC insulation **TZ:** Types of thermo sensors for range -40..+125°C. Cable with silicone insulation. **Pt100:** Types of thermo sensors for range -30..+200°C. shielded cable with silicon insulation 2x0.22 mm². Temperature sensors are produced from thermistor NTC. TC, TZ, Pt - offered length is 10 cm, 3, 6 or 12m.	Thermodriver Telva is a suitable control unit for a wide range of thermostatic valves. Visual indicator of valve position. Design: NO - without voltage open NC - without voltage closed Types of thermo actuators: - TELVA 230V, NO - TELVA 230V, NC - TELVA 24V, NO - TELVA 24V, NC.	The internal antenna **AN-I** is included in the standard package. Into plastic switchboard. Sensitivity 1 dB. The external antenna **AN-E** is supplied on request only. For mounting into metal switchboard. Cable length 3m. Sensitivity 5 dB.

APPS FOR ALL... iNELS Home Control

		iNELS BUS System (bus electro installation)					iNELS RF Control (wireless electro installation)			
		Android		iOS		TIZEN	Android	iOS	TIZEN	TIZEN
		Tablet	Phone	iPad	iPhone	Samsung Hospitality TV	iPhone	iPhone	Smart TV	Smartwatch
		iHC-TA	iHC-MA	iHC-TI	iHC-MI	iSHC	iHC-MAIRF	iHC-MIIRF	iSHC	iHC-WTRF
BUS & RF	Lighting	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Blinds	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Socket	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Garage doors, gates	✓	✓	✓	✓	✓	✓	✓	✓	✓
	RGB bulbs, LED strips	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Scenes	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Heating	✓	✓	✓	✓	✓	✓	✓	✓	✓
Third Parites Integration	Cameras	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Air-conditioning	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Recuperation	✓	✓	✓	✓	✓	✗	✗	✗	✗
	Home appliances (MIELE)	✓	✓	✓	✓	✓	✗	✗	✗	✗
	Weather station	✓	✓	✓	✓	✓	✓	✓	✗	✗
	Measurement and visualization of energy	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Door communicator and Intercom	✓	✓	✓	✓	✓	✓	✓	✓	✗
	A/V appliances	✓	✓	✓	✓	✓	✓	✓	✗	✗

✓ **Supported** ✗ **Not supported**

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

Multimedia

Smart home & building solutions

www.inels.com

Multimedia

NEW

iTP 10"

- 10" touch panel designed to control iNELS.
- Black aluminum frame chassis in combination with glass.
- Integrated speakers and microphone are primarily designed for intercom operation.
- Connection to the local area network can be done with Ethernet connection with PoE power supply - Active Poe (IEEE 802.3af).
- Android for iHC (iNELS Home Control) applications or Future Office applications.
- Update applications over the Internet.
- Active PoE power.
- The panel also includes a cover that also serves as a mounting frame.

Future Office

eLAN-IR-003

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

NEW

eLAN-RS-485/232

- The eLAN-RS485/232 (eLAN-RS) allows you to control from your smart phone, tablet, or by using the Conection air conditioner and their handheld devices.
- The eLAN-RS485/232 is connected to the home network (router) via the LAN network cable and communicates with a smartphone.
- Intuitive application environment offers centralized control from one place.
- If you do not have a fixed IP address, the converter will automatically get it from the DHCP server.
- Power converter with 10-27 V DC adapter (included) or PoE 24V DC power supply (router).
- You need a Connection Server (to communicate with the application) to install.
- Set up via web interface.

Multimedia

iMM Audio Zone-R

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

Connection Server

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

LARA

Music player and internet radio

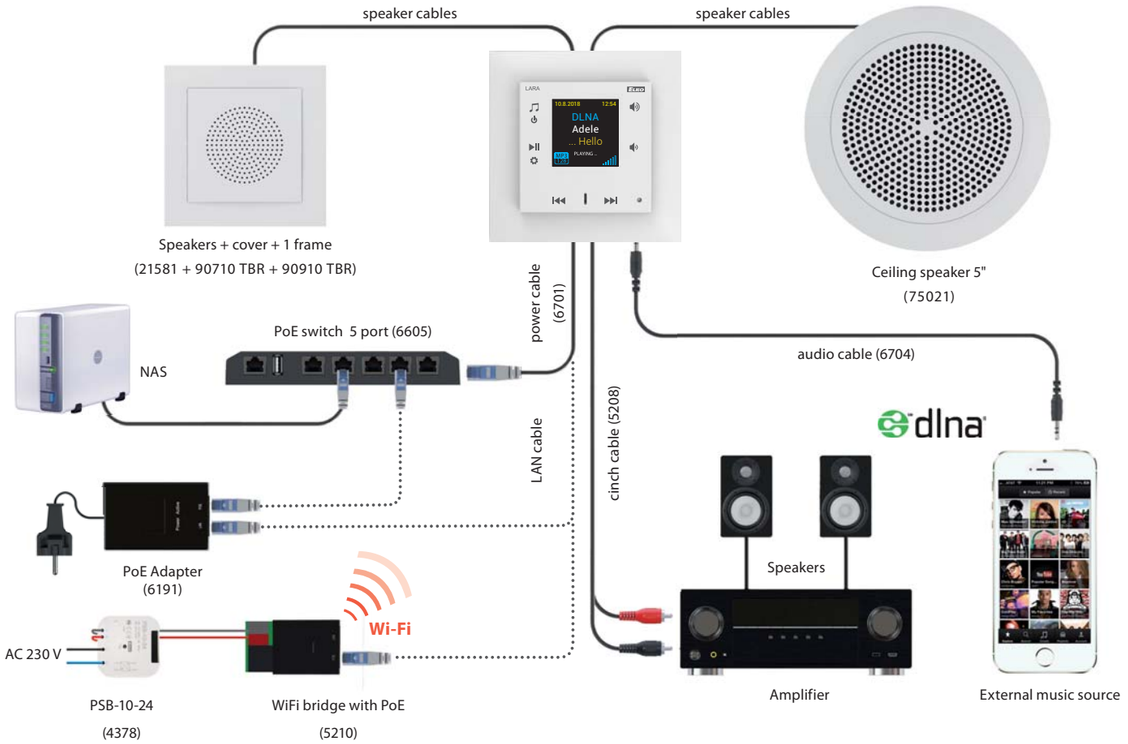
Music player and Internet radio with intercom and videophone features

Technical parameters	LARA Radio	LARA Intercom
Power supply	POE 24 V DC/1.25 A	POE 24 V DC/1.25 A
Min. /max. input	1.4 W / 26 W (peak at maximum playback performance)	1.4 W / 26 W (peak at maximum playback performance)
Display	Color OLED, Resolution: 128 x 128 pixels	Color OLED, Resolution: 128 x 128 pixels
Microphone	no	yes

- A music and Internet radio player - all in the dimension of a switch and a luxurious LOGUS^{90} design.
- LARA Radio - when connected to the Internet, it can play streaming radio stations and you can store up to 40 of them. But you can also select from thousands of radio stations from across the globe, which provide data for correct connection.
- LARA Radio can play content from an external music source, which can be an smart phone or e.g. an MP3 player. These devices are connected to a 3.5mm stereo jack audio input, located underneath the front panel.
- LARA Radio can also play audio files from central data storage, onto which Logitech Media Server is installed.

- LARA Intercom offers users 5 different functions and expands even more options to Lara Radio - music players and internet radio stations within the range of LOGUS^{90} switch designs.
- LARA Intercom provides an extra functionality and videophone intercom.
- Thanks to videophone function, now it is possible to have a voice communication between LARA and the sound of the door (IP Intercom), so with someone visiting and standing in front of the house, we can see that on LARA display as part of this function which increases the security feeling and safety besides of course, the comfort for the user.
- LARA Intercom is equipped with an OLED colored display with the size of 1.5", which is used to transfer images and sounds from the door camera properly.

Wiring example



iNELS Air

Sensors and detectors for IoT

www.inels.com

iNELS Air

About iNELS Air

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.

Individual products have the letter "S", "L" or "NB" in their type designation. This distinguishes the way of communication. "S" stands for communication over the Sigfox network, "L" stands for communication over the LoRa network, and "NB" uses communication via the NarrowBand network.

sigfox

The network supports bidirectional communication with a limited number of feedbacks. It uses the free frequency band of 868 MHz. It has more extensive coverage across the Czech Republic and abroad and is therefore more suitable for long distance monitoring of the equipment. You can find current network coverage on the site www.sigfox.com.

LoRa

A bidirectional network using the free band of 868 MHz for its communications. The advantage of this network is the possibility of freely deploying the individual stations in local locations, thus strengthening their signal. It can therefore be used effectively in areas of companies or cities, for example. You can find current network coverage on the site www.lora-alliance.org.

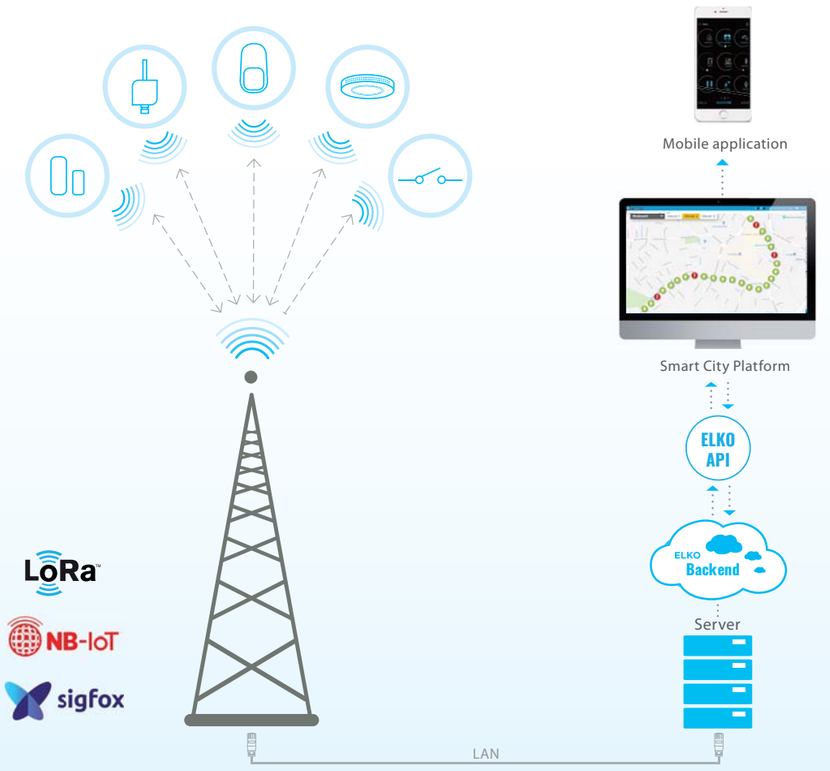
NB-IoT

The network is the only one that uses the LTE licensed band for its two-way communication. The advantage of NB-IoT is the use of the already built-in network to ensure adequate coverage both inside and outside buildings. It uses this technology with its SIM card devices. You can find current network coverage on the site www.vodafone.cz.

Principle function

Data from sensors and actors (further as an „devices") is sent via transmitters (BTS station) to the control server, from where they are sent to ELKO Cloud. Data transmission is provided by the UNB (Ultra Narrow Band) or LoRaWAN (Low Power Wide Area Network) internet protocol. Depending on the user's requirements, data may be sent to the smartphone application or integrated into the master system.

Installation of individual sensors and detectors is very simple. You will place unit randomly in range of the network. The activation of the sensor is achieved using a QR code, which is placed on each component. For the operation of individual products, it is necessary to have a secure connection with the network provider you want to use. This connectivity allows you to select individual intervals for sending messages according to your requirements.



iNELS Air

Universal input

Pulse converter

Universal input (for DIN rail)

Motion detector

Flood detector

Technical parameters	AirIM-100	AirTM-100	AirIM-100/M	AirMD-100	AirSF-100
Power supply	1x 3.6V LS 14500 Li-SOCl$_2$ AA	1x 3.6V LS 14500 Li-SOCl$_2$ AA	85 - 230 V AC (50 - 60 Hz), 12 - 48 V DC	2x 1.5V AA	1x CR123A
Protocol	Sigfox / LoRa / NB-IoT	Sigfox / LoRa / NB-IoT	Sigfox / LoRa	Sigfox / LoRa / NB-IoT	Sigfox / LoRa / NB-IoT
	The Universal input is used to detect device statuses which ensure the smooth and trouble-free operation both in the residential and industrial ectors. Protection degree IP65.	The Pulse converter detects energy from the domestic gauges (electricity. The converter is designed for use on existing gauges even without impulse output „S0"	In conjunction with the appropriate monitoring relay, it serves for voltage monitoring (overvoltage and under-voltage) in both 1 phase and 3 phase networks, checks the phase shift between current and voltage, nd monitors the frequency or the current flowing on individual appliances.	Detects people moving in a supervised area. In addition, one detector can be paired with multiple key fobs, so all members of your family or authorized person can have their own key fob.	The flood detector is used to detect water leakage - the activation occurs the moment the flooding of the contacts located on the underside of the detector occurs.

iNELS Air

Magnetic detector (indoor)

Magnetic detector (outdoor)

Smoke detector

Air quality sensor - carbon dioxide (CO_2)

Air quality sensor - carbon monoxide (CO)

Technical parameters	AirWD-100	AirWD-101	AirSD-100	AirQS-100	AirQS-101
Power supply	1x CR123A	1x 3.6V LS 14500 Li-SOCl$_2$ AA	4x 1.5 V AA	110 - 240 V AC	4x 1.5 V AA
Protocol	Sigfox / LoRa / NB-IoT	Sigfox / LoRa / NB-IoT	Sigfox / LoRa / NB-IoT	Sigfox / LoRa / NB-IoT	Sigfox / LoRa / NB-IoT
	The magnetic detector is used to detect motion – it is activated by removing the magnet from the detector.	The magnetic detector is used to detect motion – it is activated by removing the magnet from the detector. Protection degree IP65.	The smoke detector is used for the early warning of an emerging fire in residential and commercial buildings and also measures the actual temperature and humidity in the room.	Monitors the CO_2 content of the room and also measures the actual temperature and humidity in the room.	AirQS-101 - is used as a safety device for monitoring the CO concentration resulting from incomplete combustion. It also informs you of the actual temperature, humidity and light intensity in the area.

iNELS Air

Street light controller

Street light controller - LUMAWISE plug

Street light controller - NEMA socket

Twilight sensor

Ultrasonic fill-level sensor

Technical parameters	AirSLC-100	AirSLC-100/LWES	AirSLC-100/NEMA	AirSOU-100	AirWS-100
Power supply	110 - 230 V AC / 50 - 60 Hz	12 - 24 V DC	AC 100 - 230 V AC	1x 3.6V LS 14500 Li-SOCl$_2$ AA	2x Li-SOCl$_2$ 3.6V
Protocol	LoRa	LoRa / NB-IoT	LoRa / NB-IoT	Sigfox / LoRa / NB-IoT	Sigfox / LoRa / NB-IoT
	Used for remote control of the luminaire: ON / OFF / DIM. Module measures current flow - fault detection (ballast fault, light source, connecting wires ...) Protection degree IP65.	It informs about the fault of the ballast, light source, connecting wires ... Output signal 0 (1) -10V or DALI for direct control of ballast in luminaire. Protection IP65, UV resistant, designed for outdoor installation in the LUMAWISE ENDURANCE S.	It informs about the fault of the ballast, light source, connecting wires ... Output signal 0 (1) -10V or DALI for direct control of ballast in luminaire. Connection standard: Standard ANSI C136.41 Dimming Receptacle.	Information about the actual light intensity can be used in the task of maintaining a constant illumination in a given space, where it is possible to regulate the intensity of artifi cial lighting thanks to the contribution f natural lighting from outside, thereby reducing the energy consumption.	The sensor 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.

iNELS Air

LoRa Gateway FWD for LoRaWAN networks

LoRa Gateway LNS for LoRaWAN networks

Built-in board

Technical parameters	GTW-FWD	GTW-LNS	LoRaWAN Modul OEM
Power supply	48 V DC / active PoE	48 V DC / active PoE	5 - 24 V DC / 3 V DC 140 mAh
Protocol	LoRa	LoRa	LoRa
	LoRa Gateway has the LoRa receiver / transmitter function and the packet forwarder, receives / broadcasts LoRa messages and transmits them to the assigned server.	The LoRa Gateway has the LoRa receiver / transmitter function and the server, receives / transmits messages Lora and processes it on your own server.	An existing installation (OEM) module. Is used to communicate existing devices through the LoRa network.

Accessories

AirKey/W, AirKey/B
Key chain iNELS Air
RFAF/USB
Service Key
TC, TZ
Thermo sensors
HTML2500LF
Temperature and humidity sensor
LS, MS, WS
Sensors
AN-I
Internal antenna
AN-E
External antenna
FP-1
Flood probe

Switches and sockets

Luxurious design for any interior

www.elkoep.com

LOGUS90

DESIGN LINES

We offer you switches, sockets and accessories in standard design, plastic or metallic, but you are also sure to be enchanted by the luxurious designs of frames made from natural materials: solid wood, metal, granite or hardened glass - crystal.

The frame is complemented by a button cover in the shades of pearl, aluminum or e.g. dark gray or ice - where many combinations come alive based on the customer's wishes and personal taste. Not just their refined design, but also long service life and resilience are the hallmarks of these switches.

You will see quality not only in the visible parts of the covers, but also in the switch mechanism itself. The mechanisms excel for their many features that make installation quick and easy, and guarantee safe operation. Thanks to their special design, they can even deal with potential wall unevenness.

BASE
Smart finish. Discrete shape of function.

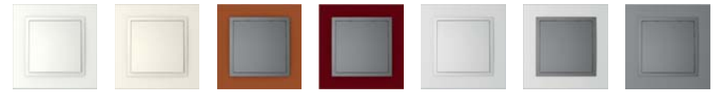

BR - White
MF - Ivory

AQUARELLA
Distinct colors.
Shades that characterize the space.


GE - Ice
PE - Pearl
AL - Aluminium
IS - Gray
PM - Black
DU - Gold

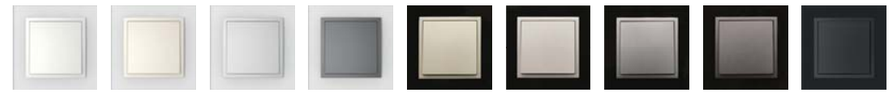
ANIMATO
Large selection of colors,
modern design and pleasant price.


BB - White/White
MM - Ivory/Ivory
RG - Yellow/Ice
DG - Green/Ice
ZG - Blue/Ice
JG - Orange/Ice
VG - Red/Ice

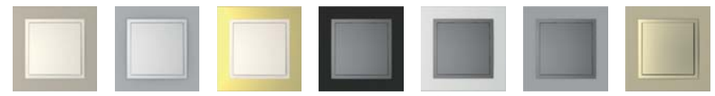

EE - Ice/Ice
PP - Pearl/Pearl
TS - Brick/Gray
BS - Wine/Gray
AA - Aluminium/ Aluminium
AS - Aluminium/ Gray
SS - Gray/Gray


PG - Black/Ice
PA - Black/ Aluminium
PS - Black/Gray
RR - Black/Černá
UG - Gold/Ice
UU - Gold/Gold

CRYSTAL
Brightness and clarity.
Shades that bring the shine of crystals into a honed experience.


CG - Cristal/Ice
CP - Cristal/Pearl
CA - Cristal/ Aluminium
CS - Cristal/Gray
EC - Glass-black/ Pearl
EG - Glass-black/Ice
EA - Glass-black/ Aluminium
ES - Glass-black/ Gray
EP - Glass-black/ Black

METALLO
Distinction and modern feel.
The refi nement and brightness of metal enhance the value of the surroundings, and lend inspiration to great moments.


TP - Titan/Pearl
IA - Inox/Aluminium
OP - Gold/Pearl
QS - Nikl/Gray
US - Aluminium/ Gray
RS - Chrome/Gray
OU - Gold/Gold

ARBORE
Selection of natural materials.
Warm shades of wood with their varying structures create a room full of happiness and sincere comfort.


FP - Beech Wood/ Pearl
JP - Cherry Tree/Pearl
MS - Mahogany/ Gray
NA - Walnut Tree/ Aluminium

PETRA
The beauty and stability of nature.
Stone with its uneven patterns, shaped by time and nature, represent the sense of firm and unending existence.


GG - Granite/Ice
GP - Granite/Pearl
GA - Granite/ Aluminium
GS - Granite/Gray

The entire design series are available from 1 frame up to 4 frames.
The BASE and AQUARELLA series are available from 1 frame up to 5 frames.
Horizontal or vertical position of the frame is possible thanks to their symmetrical shape.

Device covers in red, orange, green for hospital environments.

DEVICES OVERVIEW

Switch one-pin | Switch two-pin | Switch three-pin | Rotary dimmer | Movement detector | Card switch | Button with LED lamp symbol KEY | Blinds | Switch

UNITS OF THE iNELS SYSTEM IN LOGUS^{90} DESIGN

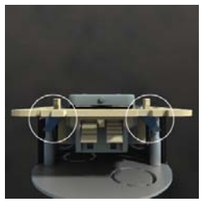
Wall-mounted controller | Multifunction unit | Digital room temperature controller

DEVICES OVERVIEW

- switches
- switches with lock
- over-switches
- rotary switches
- dimming switches
- two-pole switch
- pushbuttons
- switch, pulling switch
- shutters controllers
- shutters controllers with IR sensor
- digital time switch motion detectors
- card switch
- Jazz Light Sound system - audio system units
- standard socket
- sockets Schuko, EURO-USA
- RJ45 connectors
- data sockets Cat 5, Cat 6
- sockets radio, TV, satellite, data
- telephone sockets
- double button (2NO+2NC)
- programmable thermostat (space/floor)
- simple thermostat (space/floor) with infrared control automatic relay for controlling blinds
- multimedia sockets
- IP 44 socket cover with frame
- IP 44 safety socket cover for types French, Schuko
- IP 44 simple cover
- IP 44 double cover
- complete screwless socket (Schuko) with plates
- complete British standard socket
- LED lamp for backlighting mechanisms MEC 21 / 48 Series - 12V(250V)

ADVANTAGES MECHANISMS

Mechanism are made of special alloy of non-flammable plastics that prevent in destruction or damage of device body thanks to their strenght and elasticity. The plastic design of the mechanism simultaneously ensures safe insulation from conductive parts of installation. The mounting frame is an integral part of the device. The device is compact, lightweight and enables easy and quick installation without using any tools.



Quick Clips allow installation to adjust the frame on an uneven wall (two positions for the "snap" frame). Inequality walls will allow the deal and floating fingerboard.

Ability to test electrical functionality of your device without disassembly.

Shaped edge of the body mechanism to align the mounting multiple devices.

Depth 20 mm only alows mounting to instrumentation device / box.

Screwless terminals provide fast and quality connection without need of instrument usage. Double terminals on every pole provide multiple connection withoutneed of extra terminals usage.

Ability to test electrical functionality of your device without disassembly.

WATERPROOF 48 serie

IP65

EFAPEL with the series **Waterproof 48** is the right choice for "any terrain" when performing an electrical installation in a moist or dusty environment.

Thanks to IP65 protection and use of thermoplastic with high resistance to weather conditions, the **Waterproof 48** series represents the best solution for installations in industrial areas, garages and gardens.

It is produced in the traditional color gray – RAL 7035 – and in white – RAL 9003, which are colors used in EFAPEL technical cable trunkings.

The series **Waterproof 48** has 34 functions; these can be mounted in simple or double bases and in vertical or horizontal positions.

Jazz Light

At home, in the office or in public areas, it gives you a feeling of comfort and well-being...

The Jazz Light Series features a variety of components for the Surrounding Sound application in buildings, offices, apartments, houses and shopping centres.

Thanks to its new central audio modulation units and sound control units, it is possible to simplify the installation and use of the Surrounding Sound System itself.

The Efapel Company Jazz Light sound system lets you listen to your favourite music comfortably anywhere in your house and control it according to your needs.

Listen to what you want: you can tune in directly to your favourite radio, or if you prefer your own music selection, you can connect to another source (MP3 player, PC, TV, mobile phone) thanks to the additional input. So you can enjoy your favourite music, movie or live concert on TV, etc. with the best sound quality.

Experience music where you want and want: Enjoy great music, movie or concert in your living room as loud as you really like it!

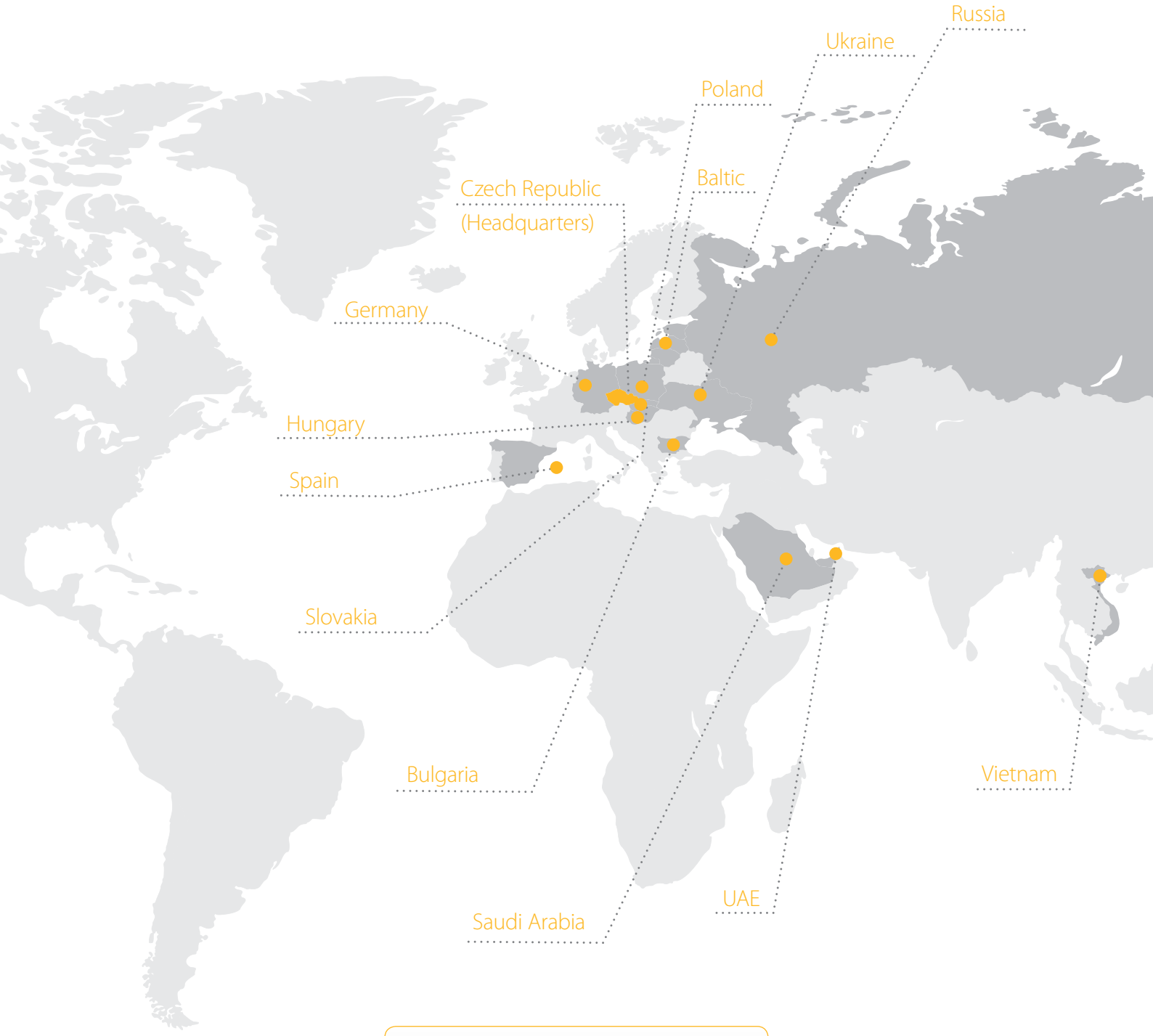
Production of the new Jazz Light Series are part of the LOGUS^{90} design series and offer a wide range of options to decorate and customise your area.

NEW !

MEC 21 Serie

USB Socket - 2100 mA - allows you to charge portable devices via a USB socket (mobile phones, smartphones, tablets, powerbanks, MP3, MP4, etc.).

Technical parameters	Order code 21384
Voltage / Frequency:	100~240 V / AC 50~60 Hz
Output voltage:	5 V
Maximum Output Power:	2.4 A
Efficiency:	80 %
Standby power consumption:	< 0.1 W
Output:	2xUSB typu A



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