

PRODUCT OVERVIEW



Monitoring / Protection relays

Timers / Relays

Wireless electro-installation iNELS

Wired electro-installation iNELS

Design switches & sockets



ELKO EP

ELKO EP have been your partner in the field for 30 years, developing and manufacturing the highest quality Electronic devices for Electroinstallation as well as Smart System for Residential and Building automation.

ELKO EP employs more than 330 people across 15 foreign branches and exports its products to more than seventy countries. Company of the Year, Visionary of the Year, Superbrands and Global Exporter of the Year are just some of the awards we have received throughout the years as we consistently strive to move forward in the field of innovation and development.

Millions of relays, thousands of smart homes, hundreds of buildings and many satisfied customers - This is ELKO EP; a traditional company based in the center of Europe, where own development, production, logistics, and service are at the forefront of our focus.

Facts and stats



30 %

Czech

40 %

export

30 %

branches



WORLDWIDE

11 branches
5 franchises
70 export countries



330

employees
in holding



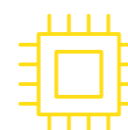
30 000 +

iNELS
installations



30 000 000 +

manufactured
products



R&D

continuosly
innovative



MANUFACTURER

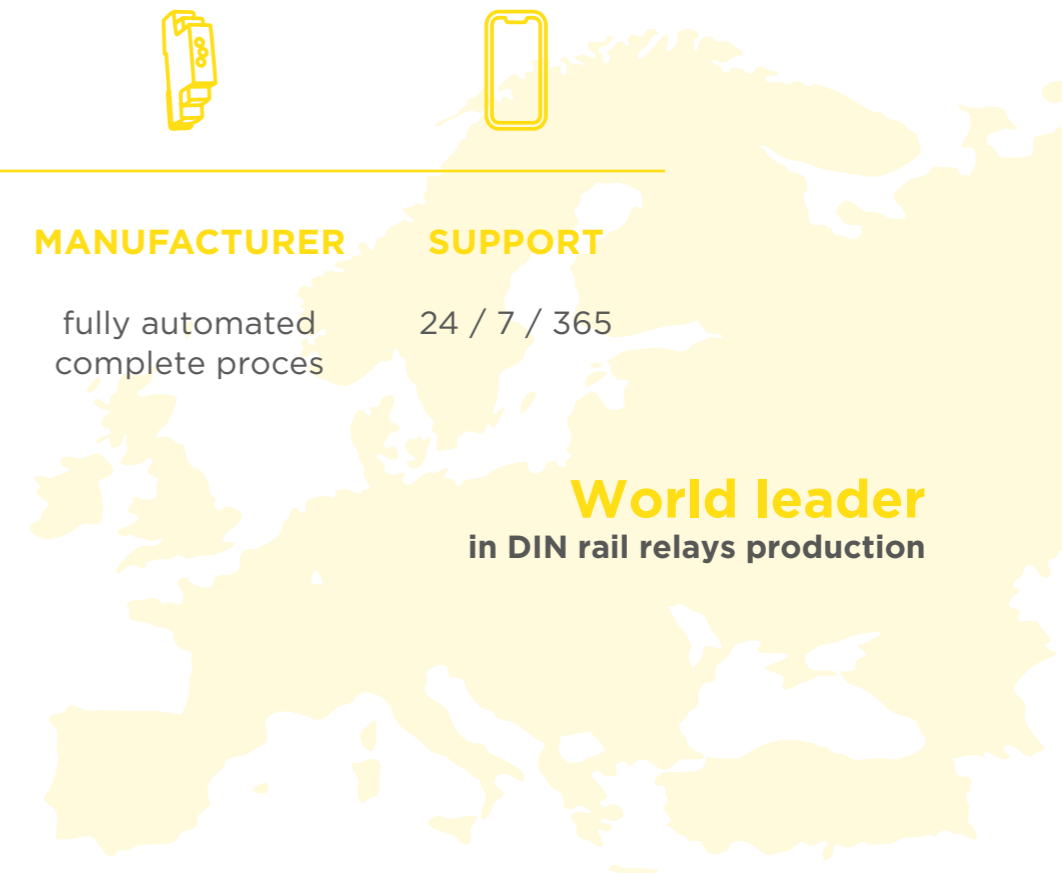
fully automated
complete proces



SUPPORT

24 / 7 / 365

**World leader
in DIN rail relays production**





Timers/Relays www.elkoep.com/relays
 Time relays, auxiliary relays, installation contactors, memory and bistable relays, staircase switches, time switches, twilight and light switches, dimmers and light intensity controllers, power supplies and bell transformers, controlling and signalling devices.



Monitoring/Protection relays www.elkoep.com/monitoring
 Voltage relays 1-phase and 3-phase (undervoltage, overvoltage, phase failure, phase asymmetry and phase sequence), current relays, liquid level relays, thermostats, voltage indicator, power factor and frequency monitoring relays.



Wireless electro-installation iNELS www.elkoep.com/wireless
 Components of smart wireless system can be easily and quickly used in existing buildings where it is not desirable to cut holes for cables (e.g. add/change a light switch when changing room layouts). However, it is also possible to assemble a complete system for apartment or house control, intelligent control of heating, blinds or scene settings. When using the eLAN-RF gateway, the entire installation can also be controlled by an application from a mobile phone, tablet or television.



Hotel Wireless Retrofit (HRESK) www.elkoep.com/retrofit
 Hotel Room Energy Saving Kit - is a complete solution designed primarily for existing hotel rooms and is based on the iNELS Wireless system. It focuses on the following areas: "Energy savings": switching off all appliances when leaving the room or not overheating/not overcooling, "Comfort" - all out of bed and "Safety": bell, guest in the room, maid, visitor.



Smart kits elkoep.com/smart-kits
 Smart Kits are pre-packaged sets of our most popular wireless control devices from the iNELS Wireless product range. The devices in the set are paired and ready for immediate assembly. Kits are divided according to their main functions, so customers can easily choose from the following categories: Wireless switch, Wireless dimming, Wireless shutter control and others.



Wired electro-installation iNELS www.elkoep.com/wired
 The sensors and actuators, together with the central unit, which is the heart of the system, communicate via a 2-wires and enable the built up a larger installation for family houses, villas, hotels and buildings. Individual functions of elements are parameterized in iDM SW, so simple and more complex actions can be set.



Hospitality Hotel (GRMS) www.elkoep.com/hospitality
 Guest Room Management System - is a comprehensive solution designed primarily for new hotels, guesthouses or wellness and is based on the iNELS BUS system. In the room, it resolves the control of lighting, access, temperature control and audio/video distribution. It features glass panels with touch buttons that can be combined in various ways (numbers, shape, and colours) and customized (description, logo).



Integration www.elkoep.com/building
 The new IP infrastructure and MQTT protocol enables the connection of iNELS central units for third-party integration and control. With the help of iNELS Bridge, It is possible to integrate almost the entire iNELS portfolio, including third-party devices that can be connected using the open Home Assistant platform. This help in connection to other protocols that the technology brings in the building (Modbus, Bacnet, KNX, etc.).



Switches and sockets www.elkoep.com/logus90
 Switches, sockets and a complete range of devices and accessories - this is the Logus90 series from the Portuguese manufacturer Efael. This range is complemented by both standard plastic frames and luxury frames made of purely natural materials: real wood, metal, granite or tempered glass. Be exceptional!

1-MODULE 2-MODULES 3-MODULES 4-MODULES 6-MODULES



BOX - flush mounted BOX-SL - screw-less terminals BOX - into the cover

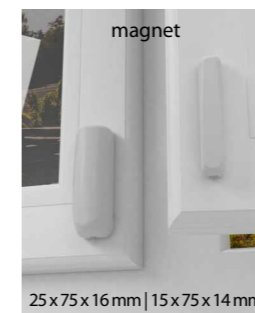


into 8/11-Pin socket or into the panel outdoor housing (IP65 protection)

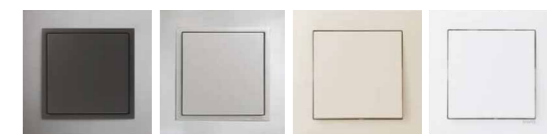


interior

in LOGUS⁹⁰ design



AQUARELLA ARBORE ANIMATO PETRA



METALLO BASE



CRYSTAL



Quick overview of time relays



	CRM-181J	CRM-183J	CRM-161	CRM-91H	CRM-93H	CRM-111H	CRM-113H	CRM-2T
Type	Single-function		Multi-function - ECONOMY	Multi-function BESTSELLER		Multi-function with inhibit delay		Star/delta timer
Control input type	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	Line Voltage Trigger	-

Main parameters

Supply voltage (frequency)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC 24-240V and DC 24V (AC 50-60 Hz)	AC/DC 12-240V or AC 230V only (AC 50-60 Hz)	AC/DC 12-240V or AC 230V only (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V or AC 230V only (AC 50-60 Hz)
Time Range	0.1 s - 100 hrs	0.1 s - 100 hrs	0.1 s - 10 hrs	0.1 s - 10 days	0.1 s - 10 days	0.05 s - 30 days	0.05 s - 30 days	0.1 s - 100 days, 0.1 - 1 s
Contact Configuration and Rating	SPDT (1x C/O) 16 A/250 V	3PDT (3x C/O) 8 A/250 V	SPDT (1x C/O) 8 A/250 V	SPDT (1x C/O) 16 A/250 V	3PDT (3x C/O) 8 A/250V	1x SPDT (1x C/O) 16 A/250 V	3PDT (3x C/O) 8 A/250V	2x SPDT (2x C/O) 16 A/250 V
2 nd (3 rd) contact mode selection	no	no	no	no	no	no	yes	no

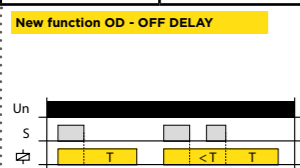
Functions

Number of function	1	1	6	10	10	11	10	1
List of function	ZR - ON DELAY ZN - INTERVAL ON BL - FLASHER - ON first		ON DELAY, INTERVAL ON, FLASHER ON first, OFF DELAY, ON/OFF delay, MEMORY LATCH with delay, ON DELAY with control signal	ON DELAY, INTERVAL ON, FLASHER-OFF first, FLASHER ON first, OFF DELAY, SINGLE SHOT, SINGLE SHOT falling edge, ON/OFF DELAY, MEMORY LATCH, PULSE GENERATOR 0.5 s		ON DELAY, INTERVAL ON, FLASHER-ON/OFF first, MEMORY LATCH, OFF DELAY, SINGLE SHOT, PULSE GENERATOR 0.5 s, ON/OFF DELAY	ON DELAY, INTERVAL ON, FLASHER-ON/OFF first, MEMORY LATCH, OFF DELAY, SINGLE SHOT, PULSE GENERATOR 0.5 s, ON/OFF DELAY	STAR/DELTA
New functions	OD - OFF DELAY					WATCHDOG, INTERVAL ON/OFF, MEMORY LATCH WITH DELAY	WATCHDOG, INTERVAL ON/OFF	

General information

Mounting	35 mm DIN rail (IEC 60715)							
Temperature Range	Operating: -20°C to +55°C (-4°F to 131°F) Storing: -30°C to +70°C (-22°F to 158°F)							
Lifetime	Electrical: 100,000 operations Mechanical: 10,000,000 operations							
Dielectric strength	Between power supply and output contact 1: 4 kV AC							
Weight	61 g (2.15 oz)	61 g (2.15 oz)	61 g (2.15 oz)	61 g (2.15 oz)	82 g (2.79 oz)	61 g (2.15 oz)	82 g (2.79 oz)	79 g (2.79 oz)
Dimensions	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"

Approved by



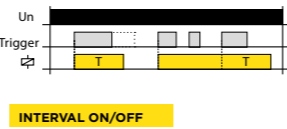
GOOD DEAL

EXTERNAL POTENTIOMETER

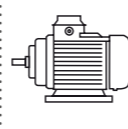


For remote time setting (CRM-91HE and CRM-2HE)

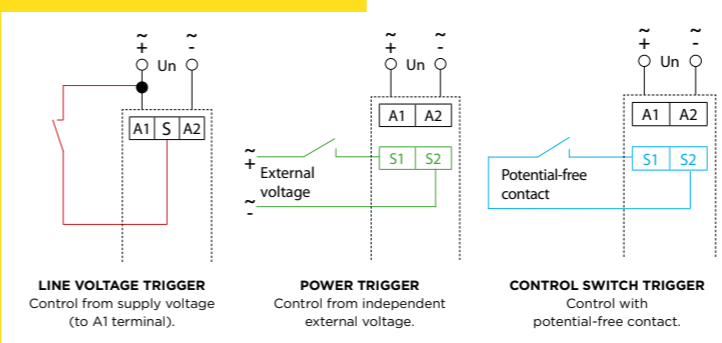
WATCHDOG



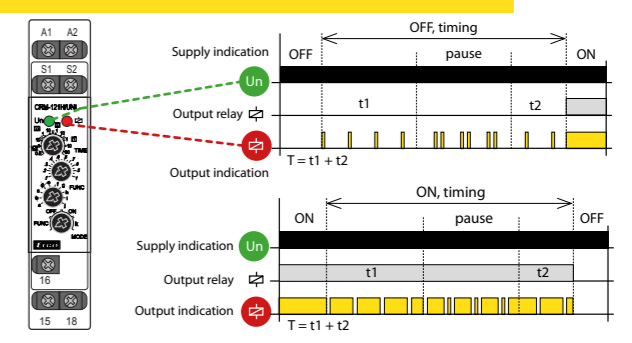
INTERVAL ON/OFF



CONTROL INPUT TYPE:



MULTI-FUNCTION LED INDICATION:

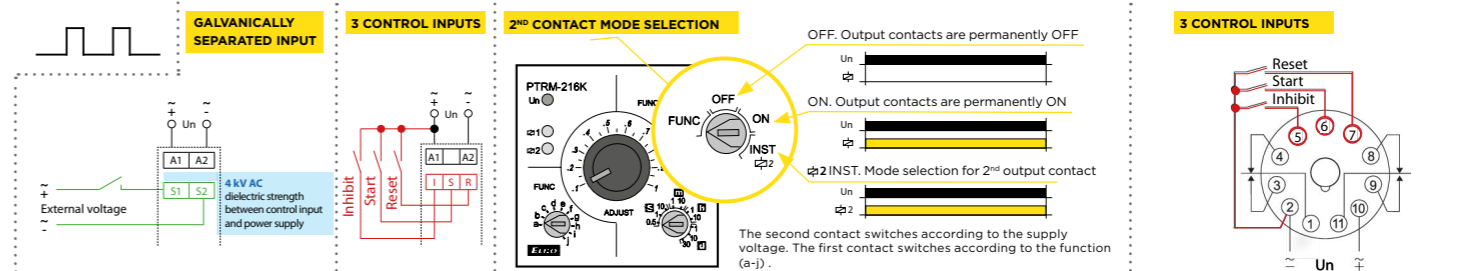


CRM-2H	CRM-121H	CRM-131H	PTRM-216K	PTRM-216T	PTRM-216KP	PTRM-216TP	PTRA-216K	PTRA-216T
Asymmetric flasher	Multi-function with GSCI	Multi-function with three inputs	Multi-function with PFCI		Multi-function with inhibit delay		Multi-function with three inputs	
Line Voltage Trigger	Power Trigger (galvanically separated)	Three control inputs (START, INHIBIT, RESET)	Control Switch Trigger	Control Switch Trigger	Line Voltage Trigger	Line Voltage Trigger	Three control inputs (START, INHIBIT, RESET)	Three control inputs (START, INHIBIT, RESET)

AC/DC 12-240V or AC 230V only (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)	AC/DC 12-240V (AC 50-60 Hz)
Time Range	0.1 s - 100 days	0.05 s - 30 days	0.05 s - 30 days	0.05 s - 30 days	0.05 s - 30 days	0.05 s - 30 days	0.05 s - 30 days	0.05 s - 30 days
Contact Configuration and Rating	SPDT (1x C/O) 16 A/250 V	SPDT (1x C/O) 16 A/250 V	SPDT (1x C/O) 16 A/250 V	2x SPDT (2x C/O) 16 A/250 V	2x SPDT (2x C/O) 16 A/250 V	2x SPDT (2x C/O) 16 A/250 V	2x SPDT (2x C/O) 16 A/250 V	2x SPDT (2x C/O) 16 A/250 V
2 nd (3 rd) contact mode selection	no	no	no	yes	yes	yes	yes	yes

2	11	11	10	10	10	10	10	10	10
ASYMMETRIC FLASHER - ON FIRST or ASYMMETRIC FLASHER - OFF FIRST	ON DELAY, INTERVAL ON, FLASHER-ON/OFF first, MEMORY LATCH, OFF DELAY, SINGLE SHOT, PULSE GENERATOR 0.5 s, ON/OFF DELAY	WITH CONTROL SIGNAL: ON DELAY, INTERVAL ON, FLASHER-ON first, FLASHER-OFF first, OFF DELAY, SINGLE SHOT, PULSE GENERATOR 0.5 s, ON/OFF DELAY	ON DELAY, INTERVAL ON, FLASHER - ON/OFF first, OFF DELAY, SINGLE SHOT, PULSE GENERATOR 0.5 s, ON/OFF DELAY, MEMORY LATCH	WATCHDOG, INTERVAL ON/OFF, MEMORY LATCH WITH DELAY	WATCHDOG, INTERVAL ON/OFF, MEMORY LATCH WITH DELAY	WATCHDOG, INTERVAL ON/OFF	WATCHDOG, INTERVAL ON/OFF	WATCHDOG, INTERVAL ON/OFF	WATCHDOG, INTERVAL ON/OFF

35 mm DIN rail (IEC 60715)				11 Pin Octal Socket					
Operating: -20°C to +55°C (-4°F to 131°F) Storing: -30°C to +70°C (-22°F to 158°F)									
Electrical: 100,000 operations Mechanical: 10,000,000 operations									
Between power supply and output contact: 4 kV AC				Between power supply and output contact: 2.5 kV AC					
61 g (2.15 oz)	72 g (2.57 oz)	61 g (2.17 oz)	108 g (3.85 oz)	107 g (3.82 oz)	108 g (3.85 oz)	107 g (3.82 oz)	108 g (3.85 oz)	107 g (3.82 oz)	
90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	90 x 17.6 x 64 mm 3.5" x 0.7" x 2.5"	48 x 48 x 89 mm 1.7" x 1.7" x 3.5"	48 x 48 x 79 mm 1.7" x 1.7" x 3.1"	48 x 48 x 89 mm 1.7" x 1.7" x 3.5"	48 x 48 x 79 mm 1.7" x 1.7" x 3.1"	48 x 48 x 89 mm 1.7" x 1.7" x 3.5"	48 x 48 x 79 mm 1.7" x 1.7" x 3.1"	



TIME RELAYS multifunction, on DIN rail



Technical parameters	CRM-161	CRM-91H	CRM-93H	CRM-91HE	CRM-95
Output	1x CO, 8 A	1x CO, 16 A	3x CO, 8 A	1x CO, 16 A	1x triac, 1.5 A
Housing	1-MODULE				
Supply voltage (frequency)	AC 24-240 V and DC 24 V (AC 50/60Hz)	AC/DC 12-240 V or AC 230 V (AC 50-60 Hz)	AC/DC 12-240 V or AC 230 V (50-60 Hz)	AC/DC 12-240 V (AC 50-60 Hz)	AC 12-240 V (50-60 Hz)
Time range	0.1 s - 10 hrs (6 ranges)	0.1s - 10 days (10 ranges)	0.1 s - 10 days (10 ranges)	0.1 s - 10 days (10 ranges)	0.1 s - 10 days (10 ranges)
Number of functions	6	10	10	10	10
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")				
Order code	8161	UNI: 7521 230V: 7078	UNI: 7561 230V: 7562	8145	8506



Economy version of CRM-91H. Only the 6 most used functions, 8 A changeover contact, miniUNI power supply AC / DC 24-240 V + DC 24 V.

The most used multifunctional time relay for universal use in automation, control and regulation or in house installations. 10 functions, 10 time ranges, multifunctional LED signalling, universal power supply in a wide range of AC / DC 12-240 V.

As a CRM-91H, but with the possibility of time control by an external potentiometer. The potentiometer is mounted in a panel, hole diameter 25 mm.

Same as CRM-91H only with non-contact output (triac). The advantage of contactless output is noiselessness and extreme durability.



TIME RELAYS multifunction, on DIN rail



Technical parameters	CRM-111H	CRM-113H	CRM-121H	CRM-131H	CRM-82TO
Output	1x CO, 16 A	3x CO, 8 A	1x CO, 16 A	1x CO, 16 A	2x CO, 8 A
Housing	1-MODULE				
Supply voltage (frequency)	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 12-240 V (AC 50-60 Hz)
Time range	50 ms - 30 days (10 ranges)	50 ms - 30 days (10 ranges)	50 ms - 30 days (10 ranges)	50 ms - 30 days (10 ranges)	0.1s - 10 min (4 ranges)
Number of functions	11	10	11	11	2
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")				
Order code	7554	8063	7555	7556	7580

All functions initiated by the supply voltage, except for the flasher function, can use the control input to inhibit the delay (pause).

All functions initiated by the supply voltage, except for the flasher function, can use the control input to inhibit the delay (pause). 2nd & 3rd contact mode selection.

Galvanically separated control input (Power Trigger) for control with external voltage in the range at AC / DC 12-240 V.

Three control inputs – START, INHIBIT, RESET. All functions start with triggering of control input START.

Relay is timing after power supply failure and is switched off after set time period. Two time functions: a - TRUE OFF DELAY e - ON DELAY



TIME RELAYS single function, on DIN rail



Technical parameters	CRM-181J	CRM-183J	CRM-2T	CRM-2H	CRM-2HE	SJR-2
Output	1x CO, 16 A	3x CO, 8 A	2x CO, 16 A	1x CO, 16 A	1x CO, 16 A	2x CO, 16 A
Housing	1-MODULE					
Supply voltage (frequency)	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 12-240 V or AC 230 V (AC 50-60 Hz)	AC/DC 12-240 V or AC 230 V (AC 50-60 Hz)	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 12-240 V or AC 230 V (AC 50-60 Hz)
Time range	0.1s - 100 hrs (10 ranges)	0.1s - 100 hrs (10 ranges)	t1: 0.1s - 100 days, t2: 0.1s - 100 days (10 ranges)	0.1s - 100 days (10 ranges)	0.1s - 100 days (10 ranges)	0.1s - 10 days (10 ranges)
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")					



external potentiometer mounted in Ø 25 mm hole in the panel

ZR: ON DELAY
CRM-181J/UNI ZR: 8038 | CRM-183J/UNI ZR: 8061

ZN: INTERVAL ON
CRM-181J/UNI ZN: 8039 | CRM-183J/UNI ZN: 8060

BL: FLASHER - ON first
CRM-181J/UNI BL: 8040 | CRM-183J/UNI BL: 8058

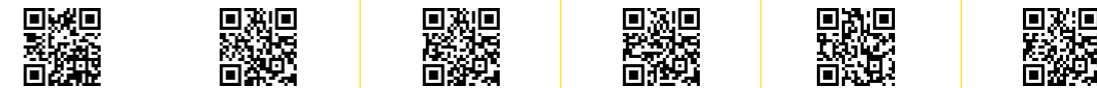
OD: OFF DELAY
CRM-181J/UNI OD: 8041 | CRM-183J/UNI OD: 8059

CRM-2T/UNI: 7669
CRM-2T/230V: 8381
Time t1 Δ (star) 0.1 s do 100 days.
Time t2 (delay) Δ/Δ 0.1 s - 1 s.

CRM-2H/UNI: 7668
CRM-2H/230V: 8395
Asymmetric flasher with independently adjustable output closing and opening time.
2 time functions:
• asymmetric flasher - ON first
• asymmetric flasher - OFF first.

CRM-2HE/UNI: 8144
Asymmetric flasher with possibility of time control with external potentiometers.
2 time functions:
• asymmetric flasher - ON first
• asymmetric flasher - OFF first.

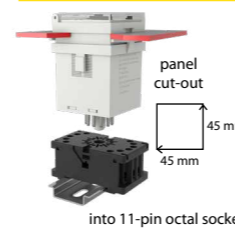
SJR-2/UNI: 7670
SJR-2/230V: 8396
It is used for gradual (cascade) switching. 2 x independent ON DELAY outputs. Time adjustable from 0.1 s to 100 days.



TIME RELAYS multifunction, PLUG-IN



Technical parameters	PTRM-216TP	PTRM-216KP	PTRM-216T	PTRM-216K	PTRA-216T	PTRA-216K
Fine time setting	rotary potentiometer	knob	rotary potentiometer	knob	rotary potentiometer	knob
Output	2x CO, 16 A					
Housing	PLUG-IN, into 11-pin octal socket					
Control input	line voltage trigger		control switch trigger		3 control inputs (START, INHIBIT, RESET)	
Supply voltage (frequency)	AC/DC 12-240 V (50-60 Hz)					
Time range	50 ms - 30 days (10 ranges)					
Number of functions	10					
Dimensions	48 x 48 x 79 mm (1.9" x 1.9" x 3.1")	48 x 48 x 89 mm (1.9" x 1.9" x 3.5")	48 x 48 x 79 mm (1.9" x 1.9" x 3.1")	48 x 48 x 89 mm (1.9" x 1.9" x 3.5")	48 x 48 x 79 mm (1.9" x 1.9" x 3.1")	48 x 48 x 89 mm (1.9" x 1.9" x 3.5")
Order code	7938	7861	7938	7557	7560	7559



into 11-pin octal socket

All functions initiated by the supply voltage, except for the flasher function, can use the control input to inhibit the delay (pause).

Three control inputs – START, INHIBIT, RESET. All functions start with triggering of control input START.

All functions initiated by the supply voltage, except for the flasher function, can use the control input to inhibit the delay (pause).



TIME RELAYS digital, on DIN rail

STAIRCASE SWITCHES



multifunction LCD display
1x output contact



multifunction LED display
2x output contacts

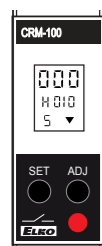


standard with function ON/AUTO/OFF



multifunction extending time, signaling before switching off

Technical parameters	CRM-100	PDR-2A	PDR-2B	CRM-4	CRM-46
Output	1x CO, 8 A	2x CO, 16 A		1x CO, 16 A	1x CO, 16 A
Housing	1-MODULE	3-MODULE		1-MODULE	1-MODULE
Supply voltage (frequency)	AC/DC 24-240 V (AC 50-60 Hz)	AC/DC 12-240 V or AC 230 V (AC 50-60 Hz)		AC 230 V (50-60 Hz)	AC 230 V (50-60 Hz)
Time range	0.1 s - 999 hrs	0.01 s - 100 hrs		0.5 s - 10 min	0.5 s - 30 min
Number of functions	17	16	10	3	6
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	90 x 52 x 65 mm (3.5" x 2" x 2.6")		90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	
Order code	7453	UNI: 304 230V: 303	UNI: 306 230V: 305	7077	7491



Control input B1 is controlled by the supply voltage.
More accurate thanks to digital time setting.

Multifunction programmable digital relay with 4-digit red LED display. It is used for applications where it is necessary to set the exact time (have a visual check).
PDR-2A: optional second relay function (16 functions)
PDR-2B: individual setting of the functions for both output contacts (10 functions).

It is used for delayed switching off of lighting on stairs, corridor, entrance ...
It is controlled by the button or several buttons from several places (connected in parallel).
3 or 4 wire connection.

Smart features:
- extending time
- premature shutdown
- impulse relay
- signalling before switching OFF.
3 or 4 wire connection.



TIME RELAYS flush/cover mounted



multifunction 3-wire (without NEUTRAL) on input: LED bulb



multifunction 3-wire (without NEUTRAL) on input: incandescent bulb



multifunction 4-wire (with NEUTRAL) contactless output



multifunction 4-wire (with NEUTRAL) 1x output contact

Technical parameters	SMR-K	SMR-T	SMR-H	SMR-B
Output	1x triac	1x triac	1x triac	1x CO, 16 A (AgSnO ₂)
Housing	BOX	BOX	BOX	BOX
Resistive load	10 - 160 VA	10 - 160 VA	0 - 200 VA	0 - 4000 VA
Inductive load	10 - 100 VA	10 - 100 VA	0 - 100 VA	0 - 2000 VA
Supply voltage (frequency)	AC 230 V (50-60 Hz)	AC 230 V (50-60 Hz)	AC 230 V (50-60 Hz)	AC 230 V (50-60 Hz)
Number of functions	9	9	9	10
Dimensions		49 x 49 x 13 mm (1.9" x 1.9" x 0.5")		49 x 49 x 21 mm (1.9" x 1.9" x 0.8")
Order code	4517	2910	2911	3556



BOX flush mounted

Multifunction time relay for installation in an installation box for 3-wire connection (does not require NEUTRAL). An LED bulb or energy saver can be connected in parallel to the control input.

Like the SMR-K, but in parallel to the control input, unlike the SMR-K, neither an LED bulb nor an energy saver can be connected, only other types of loads. Glow-lamps are supported.

Multifunction time relay for installation in an installation box for 4-wire connection (requires Neutral). Not suitable for switching LED bulbs.

Multifunction time relay for installation in an installation box for 4-wire connection (requires Neutral). Thanks to the switching contact AgSnO₂, it is also suitable for switching LED bulbs or savings.



DIGITAL TIME SWITCHES



1-channel



weekly

2-channels



1-channel



2-channels

Technical parameters	SHT-1	SHT-1/2	SHT-13	SHT-13/2
Program	weekly, yearly		weekly, yearly, astro	
Replaceable battery	no		yes	
Output	1x CO, 16 A	2x CO, 16 A	1x CO, 16 A	2x CO, 16 A
Housing	2-MODULE			
Supply voltage (frequency)	AC/DC 12-240 V or AC 230 V (AC 50-60 Hz)		AC/DC 24-240 V (AC 50-60 Hz)	
Dimensions	90 x 35 x 64 mm (3.5" x 1.4" x 2.5")			
Order code	UNI: 3043 230V: 3042	UNI: 3041 230V: 3040	8907	8485

It is used to control various appliances depending on the real time: with weekly (SHT-1), and weekly and annually (SHT-3) program. Power backup in case of battery power failure. Backlit LCD display, sealable cover. Possibility of automatic summer / winter time transition. Additional functions: manual control, random switching, and pulse output.

Our newest time switch with all time programs and new features e. g. pulse / cycle output, PIN code protection and many more.

- App:
- internet time synchronization
 - backup possibilities
 - setup and manual control



ANALOG TIME SWITCHES



with daily program and power backup



with daily program



with daily program and power backup



with weekly program and power backup

Technical parameters	ATS-1DR	ATS-2D	ATS-2DR	ATS-2WR
Program		daily		weekly
Power backup	yes (max. 100 hrs)	no	yes (max. 150 hrs)	yes (max. 150 hrs)
Minimum switching interval	15 min	30 min	30 min	3.5 hrs
Output	1x NO, 16 A		1x CO, 16 A	
Housing	1-MODULE		2-MODULE	
Supply voltage (frequency)	AC 230 V (50/60 Hz)	AC 230 V (50/60 Hz)	AC 230 V (50/60 Hz)	AC 230 V (50/60 Hz)
Dimensions	90 x 17.6 x 64 mm		90 x 35 x 60 mm	
Order code	8217	8212	8218	8214

A simple and inexpensive alternative to digital switches for controlling real-time heating, ventilation, cooling, lighting or pumps. With daily or weekly program. Selection of operating modes. Sealable transparent front panel cover to prevent unauthorized access.



POWER RELAYS



1x 16 A contact supply: AC 230 V 1x 16 A contact supply: AC 230 V 1x 16 A contact supply: UNI 3x 8 A contacts supply: AC 230 V 3x 8 A contacts supply: UNI 3x 16 A contact: supply: AC/DC 24 V 3x 16 A contacts supply: AC 230 V

Technical parameters	VS116B/230	VS116K	VS116U	VS308K	VS308U	VS316/24	VS316/230
Output	1x CO, 16 A (AgSnO ₂)			3x CO, 8 A (AgNi)		3x CO, 16 A (AgSnO ₂)	
Housing	BOX		1-MODULE				
Supply voltage (frequency)	AC 230 V (50-60 Hz)	AC/DC 24 V and AC 230 V (AC 50-60 Hz)	AC/DC 12-240 V (AC 50-60 Hz)	AC/DC 24 V and AC 230 V (AC 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)
Dimensions	49 x 49 x 21 mm (1.9" x 1.9" x 0.8")		90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")				
Order code	4754		codes below				

	VS116K/red: 2295	VS116U/red: 2460	VS308K/red: 2269	VS308U/red: 3010	VS316/24V red: 3577	VS316/230V red: 4471
	VS116K/green: 2261	VS116U/green: 3643	VS308K/green: 2271	VS308U/green: 3644	VS316/24V green: 3610	VS316/230V green: 4472
	VS116K/white: 2257	VS116U/white: 3848	VS308K/white: 2267	VS308U/white: 3851	VS316/24V white: 3609	VS316/230V white: 4470
	VS116K/blue: 2260	VS116U/blue: 3847	VS308K/blue: 2270	VS308U/blue: 3850	VS316/24V blue: 3611	VS316/230V blue: 4474

INSTALLATION CONTACTORS



1x20 A 2x20 A 4x25 A 4x40 A 4x63 A 4x20 A 2x20 A with manual control 4x25 A with manual control

Technical parameters	VS120	VS220	VS425	VS440	VS463	VS420	VSM220	VSM425
Max. load capacity	20 A	20 A	25 A	40 A	63 A	20 A	20 A	25 A
Number of poles	1	2	4	4	4	4	2	4
Contact configuration (NO/NC)	10, 01	20, 11, 02	40, 31, 22, 04	40, 31, 22, 04	40, 31, 22	40, 31	20, 11, 02	40, 31, 22, 04
Coil supply voltage (frequency)	AC/DC 24 V, 230 V (AC 50/60 Hz)	AC/DC 24 V, 48 V, 110 V, 230 V (AC 50/60 Hz)	AC/DC 24 V, 48 V, 110 V, 230 V (AC 50/60 Hz)	AC/DC 24 V, 110 V, 230 V (AC 50/60 Hz)	AC/DC 24 V, 48 V, 110 V, 230 V (AC 50/60 Hz)	AC 12 V, 24 V, 48 V, 110 V, 230 V (50/60 Hz)	AC 12 V, 24 V, 110 V, 230 V (50/60 Hz)	AC 12 V, 24 V, 42 V, 230 V (50/60 Hz)
Dimensions	17.5 x 85 x 60 mm		35 x 85 x 60 mm	53.3 x 84 x 60 mm		35 x 62.5 x 57 mm	17.5 x 85 x 60 mm	35 x 85 x 60 mm

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. IP20 protection - guards providing IP40 protection of all contactor (VS420 excluded) 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.

Like VS, but moreover slide switch allowing manual control 1-AUTO-OFF.

BISTABLE (IMPULSE) RELAYS



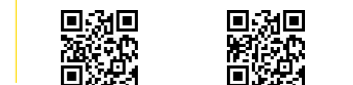
1x NO, 16 A contact 2x NO/NC, 16 A contacts 2x NO, 16 A contacts 2x NO, 20 A contacts with remote control disconnection 2x NO, 32 A contacts

Technical parameters	BR-216-10	BR-216-11	BR-216-20	BR-220-20	BR-232-20	MR-41	MR-42
Output	1x NO, 16 A	1x NO+1x NC, 16 A	2x NO, 16 A	2x NO, 20 A	2x NO, 32 A	1x CO, 16 A	2x CO, 16 A
Housing	1-MODULE					1-MODULE	
Coil supply voltage (frequency)	AC 120 V (60 Hz) AC 230 V (50 Hz)	AC 120 V (60 Hz) AC 230 V (50 Hz)	AC 120 V (60 Hz) AC 230 V (50 Hz)	AC 120 V (60 Hz) AC 230 V (50 Hz)	AC 120 V (60 Hz) AC 230 V (50 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)
Coil disconnecter	x		x		yes	yes	x
Order code	6969 6885	6970 6887	6971 6886	6972 6888	6973 6889	8248 8224	8249 8225

The state of the output contacts changes with the coil pulse. They are used mainly for switching and control of luminaires, heating, ventilation and other devices - with buttons connected in parallel. All relays can be controlled manually using the lever on the front panel (I-O), which also serves as a status signal. In addition, the BR-220 and BR-232 have a switch for disconnecting the coil, as a result of which it can then only be operated with a slide switch on the front panel. In steady state (ON or OFF) it has zero consumption.

Similar to the Bistable BR relay, but thanks to the electronic design, the switching is almost noiseless. The relays remember their state even after the power failure is restored (the output is always OFF in the event of a power failure, after the power supply is restored it automatically returns to the state before the power failure).

MR-42: 2nd output option:
a) Parallel contact b) step relay



TWILIGHT SWITCHES



analog with external sensor digital with build-in time switch and external sensor for outdoor use with built-in sensor external photosensor

Technical parameters	SOU-1	SOU-2	SOU-3	SKS-100, SKS-200
Output	1x CO, 16 A	1x CO, 8 A	1x NO, 12 A	SKS-100: for use with SOU-1, LIC-1 SKS-200: for use with SOU-2
Housing	1-MODULE		2-MODULE	
Supply voltage (frequency)	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)
Sensor	external, SKS-100		external, SKS-200	
Adjustable light intensity	1 - 50 000 lx (in 2 ranges)		10 - 50 000 lx	
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")		90 x 35 x 64 mm (3.5" x 1.4" x 2.5")	
Order code	8046 7551	8234	4056	8073 8233

Twilight switch (1-100 lx) or (100-50 000 lx), which closes the output when the level falls below the set level. External sensor SKS-100 included in the package.

Digital twilight switch with timer, i.e. the lighting level can be blocked in real time. External sensor SKS-200 included in the package.

Twilight switch (1-1000 lx), which closes the output when falling below the set level or light switch (100-100.000 lx), which closes the output when the level is exceeded.

New external photosensor SKS-100 and SKS-200 for panel or wall mounting, via the included bracket.





adjustable output for voltage drop compensation, high load in small design output voltage 12 or 24 V

flush/cover mounted output voltage 12 or 24 V regulated 12-24V

Technical parameters	PS1M		PS2M		PS3M		PS4M		PSB-10		PS-30-R	
Output voltage	DC 12 V	DC 24 V	DC 12 V	DC 24 V	DC 12 V	DC 24 V	DC 12 V	DC 24 V	DC 12 V	DC 24 V	DC 12-24 V	
Max. load	1.2 A/15 W	0.62 A/15 W	2 A/24 W	1.2 A/30 W	4.5 A/54 W	2.5 A/60 W	7.1 A/85	3.8 A/92 W	0.8 A/10 W	0.4 A/10 W	2.5-1.2 A/30 W	
Housing	1-MODULE		2-MODULE		3-MODULE		4-MODULE		BOX		3-MODULE	
Supply voltage (frequency)	AC 100-240 V (50-60 Hz)								AC 110-250 V (50-60 Hz)		AC 100-250 V (50-60 Hz)	
Protective circuits	overload, overvoltage and short circuit								short circuit, current and temperature overload (from 120% of rated power)			
Dimensions	90 x 18 x 58 mm (3.5" x 0.7" x 2.6")		90 x 35 x 58 mm (3.5" x 1.4" x 2.3")		90 x 52.5 x 58 mm (3.5" x 2.1" x 2.3")		90 x 70 x 58 mm (3.5" x 2.8" x 2.3")		49 x 49 x 21 mm (1.9" x 1.9" x 0.8")		90 x 52 x 65 mm (3.5" x 2" x 2.6")	
	PS1M-15/12V: 8047 PS1M-15/24V: 8048 PS2M-24/12V: 8049 PS2M-30/24V: 8050 Switching stabilized power supply with output voltage 12 or 24 V DC. High efficiency up to 90%. Low ripple and noise.				PS3M-54/12V: 8051 PS3M-60/24V: 8052 PS4M-85/12V: 8053 PS4M-92/24V: 8054				PSB-10-12: 4502 PSB-10-24: 4378		PS-30-R: 5158 Regulated output voltage in the range of 12-24 V.	



8 VA/DC 5-24 V regulated

8 VA/24 V unregulated

8 VA AC 8 V

8 VA AC 12 V

4 V 5-15VA 8 V 12 V

Technical parameters	ZSR-30	ZNP-10-24V	ZTR-8-8	ZTR-8-12	ZTR-15-12		
Output voltage	DC 5-24 V, stabilized DC 24 V, unregulated AC 24 V	DC 24 V, unregulated AC 24 V	AC 8 V	AC 12 V	AC 4 V	AC 8 V	AC 12 V
Max. load	8 VA/8 W	8 VA/8 W	8 VA		5 VA	10 VA	15 VA
Housing	3-MODULE	3-MODULE	2-MODULE		3-MODULE		
Supply voltage (frequency)	AC 230 V (50-60 Hz)	AC 230 V (50-60 Hz)	AC 230 V (50 Hz)				
Protections	short circuit and current overload	-	short circuit (on primary winding)				
Dimensions	90 x 52 x 65 mm (3.5" x 2" x 2.6")		90 x 36 x 64 mm (3.5" x 1.5" x 2.6")			90 x 52 x 65 mm (3.5" x 2" x 2.6")	
Order code	8484	408	3680	3681	3928		
	Regulated output voltage in the range of DC 5-24 V.	Unregulated AC + DC output voltage.	For powering doorbells, door locks, etc.				



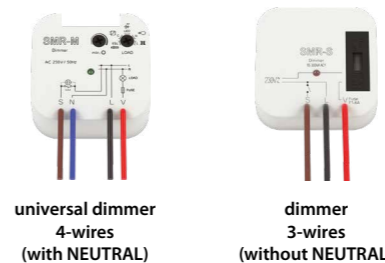
universal controlled dimmer 300 VA

staircase switch with dimming 500 VA

universal controlled dimmer 2000 VA

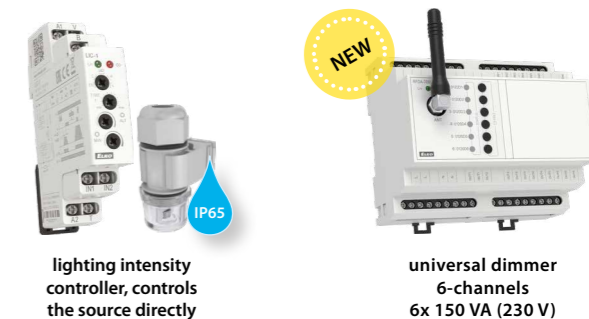
expanding power module for DIM-6 1000 VA

Technical parameters	DIM-15	DIM-2	DIM-6	DIM6-3M-P
Dimmable loads	R - L - C - ESL - LED	R - L - LED	R - L - C - LED	R - L - C - LED
Output	2x MOSFET	1x triac	4x MOSFET	2x MOSFET
Output loads	300 VA	R: 10-500 VA, L: 10-250 VA	2000 VA	1000 VA
Protections	overheating and overload	overheating	overheating and overload	overheating and overload
Housing	1-MODULE		6-MODULE	3-MODULE
Supply voltage (frequency)	AC 230 V (50 Hz)	AC 230 V (50 Hz)	AC 230 V (50 Hz)	AC 230 V (50 Hz)
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")		90 x 105 x 65 mm (3.5" x 4.1" x 2.6")	90 x 52 x 65 mm (3.5" x 2" x 2.6")
Order code	4069	DIM-2: 1247 DIM-2-1h: 3574	3691	3910
	<p>The type of light source is set with a switch on the front panel. Setting the minimum brightness with the potentiometer on the front panel eliminates the flickering of some types of energy-saving light bulbs (ESL) and LED.</p>	<p>The gradual increase of brightness, deceleration and duration of illumination can be set by potentiometers on the panel:</p> <ul style="list-style-type: none"> rise and falling length: 1 - 40 s light duration: 0 - 20 min brightness: 10 - 100% 	<p>The dimmer can be controlled in several ways: with buttons, an external potentiometer, and an analog signal 0(1)-10 V or with the iNELS BUS system. Power expandable upto 10kVA. DIM6-3M-P modules.</p>	<p>Expansion module for DIM-6. 8 of these modules expand the power of the DIM-6 up to 10,000 VA.</p>



universal dimmer 4-wires (with NEUTRAL)

dimmer 3-wires (without NEUTRAL)



lighting intensity controller, controls the source directly IP65

universal dimmer 6-channels 6x 150 VA (230 V)

Technical parameters	SMR-M	SMR-S	LIC-1	RFDEL-76M
Dimmable loads	R - L - C - ESL - LED	R - L - LED	R - L - C - ESL - LED	R - L - C - ESL - LED
Output	2x MOSFET	1x triac	2x MOSFET	12x MOSFET
Output loads	160 VA	R: 10-300 VA, L: 10-150 VA	300 VA	6x 150 VA (230V) / 6x 75 VA (120V)
Protections	overheating and overload	fuse	overheating and overload	overheating and overload
Housing	BOX		1-MODULE	6-MODULE
Supply voltage (frequency)	AC 230 V (50 Hz)	AC 230 V (50 Hz)	AC 230 V (50 Hz)	230 V (50 Hz) or AC 120 V (60 Hz)
Dimensions	49x49x21 mm (1.9"x1.9"x0.8")	49x49x13 mm (1.9"x1.9"x0.5")	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	90 x 105 x 65 mm (3.5" x 4.1" x 2.6")
Order code	4377	2351	4493	230V: 8205 120V: 8209
	<p>The type of light source is set with a switch on the instrument panel.</p>	<p>3-wire connection (without NEUTRAL), but minimum load 10 W.</p>	<p>It automatically maintains the intensity of artificial lighting in the room according to an external outdoor light sensor SKS-100.</p>	<p>Universal 6-channel dimmer with an output of 900 VA. The outputs can be connected in parallel and multiply the power at the expense of the number of outputs. Control with wired buttons or wireless iNELS RF.</p>



USS-ZM
Basic module

USS

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 1-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 to +55°C.



Example of combinations



USS-01 + USS-03 USS-07 + USS-11 USS-11 + USS-01



USS-13 + USS-10 USS-12 + USS-11 USS-07 + USS-00

Types of controlling and signaling units



Name	USS-01	USS-02	USS-03	USS-04	USS-05	USS-06/S	USS-06/R
Order code	2462	2463	2464	2465	2466	2467	3637



Name	USS-07	USS-08	USS-09	USS-10	USS-11	USS-12	USS-13
Order code	2468	2468	2470	2433	2434	2435	2436



Name	USS-14	USS-15	USS-0
Order code	2489	2437	2461



USS-ZM
2457



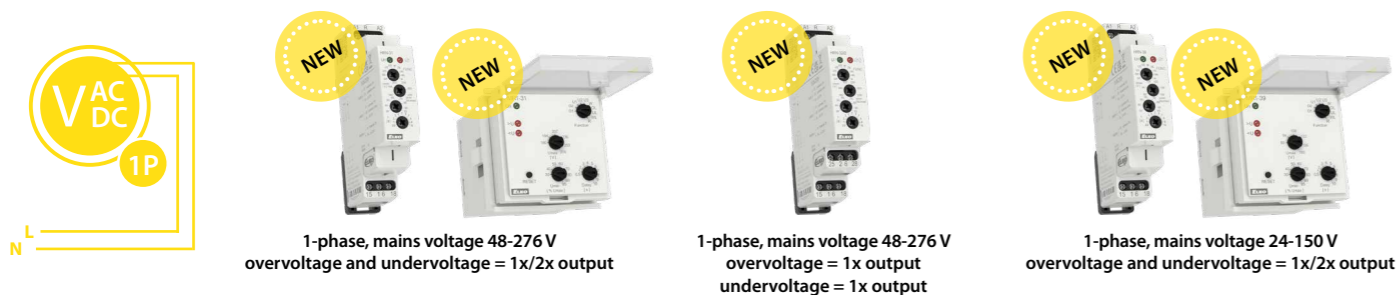
PROTECTION AND MONITORING RELAYS

Voltage monitoring relays - overview

Type	Design	Supply from	GI*	Features				Phase			Setting				Description	
				Phases	Monitored range	U_{\wedge}	$U_{<}$	U_{\approx}	Failure	Sequence	Asymmetry	Delay	Restart delay	Hysteresis		Memory
HRN-31 HRN-31/2	1-M	monitored voltage	x	1	AC 48 - 276 V	•	•	•	x	x	x	•	x	•	•	All types have 9 functions in total. The delay is adjustable from 0 - 10 seconds (to eliminate short-term outages or peaks). The lower voltage level (Umin) is set in % of the upper level (Umax).
HRN-32/2	1-M	monitored voltage	x	1	AC 48 - 276 V	•	•	•	x	x	x	•	x	•	•	
HRN-36 HRN-36/2	1-M	monitored voltage	x	1	DC 6 - 30 V	•	•	•	x	x	x	•	x	•	•	HRN-3x, PMR1-3x: 1x output contact HRN-3x/2, PMR1-3x/2: 2x output contact
HRN-39 HRN-39/2	1-M	monitored voltage	x	1	AC 24 - 150 V	•	•	•	x	x	x	•	x	•	•	Old types replacement: HRN-33 > HRN-31 HRN-34 > HRN-36 HRN-35 > HRN-32/2 HRN-37 > HRN-39
PMR1-31 PMR1-31/2	8-PIN	monitored voltage	x	1	AC 48 - 276 V	•	•	•	x	x	x	•	x	•	•	
PMR1-36 PMR1-36/2	8-PIN	monitored voltage	x	1	DC 6 - 30 V	•	•	•	x	x	x	•	x	•	•	
PMR1-39 PMR1-39/2	8-PIN	monitored voltage	x	1	AC 24 - 150 V	•	•	•	x	x	x	•	x	•	•	HRN-32/2: separated output contact for overvoltage and undervoltage
HRN-41/UNI HRN-41/400 V	3-M	AC/DC 24-240 V AC 400 V	•	1	AC/DC 50 V AC/DC 160 V AC/DC 500 V	x	x	•	x	x	x	•	x	•	•	Second relay function (independent or parallel). Galvanically separated power supply from measuring inputs. HRN-41: lower level for undervoltage (Umin) is set in % from the set upper level (Umax) HRN-42: lower level for undervoltage (Umin) is set in % of the nominal value of the selected input, as for the upper level (Umax)
HRN-42/UNI HRN-42/400 V	3-M	AC/DC 24-240 V AC 400 V	•	1	AC/DC 50 V AC/DC 160 V AC/DC 500 V	x	x	•	x	x	x	•	x	•	•	
HRN-55	1-M	monitored voltage	x	3	AC 3 x 300 - 500 V	x	x	• (fixed)	•	•	x	•	x	x	x	Power supply from all phases, i.e. the relay function is preserved even if one phase fails.
HRN-55N	1-M	monitored voltage	x	3	AC 3 x 172 - 287 V	x	x	• (fixed)	•	•	x	•	x	x	x	Power supply L1-N, i.e. the relay also monitors the neutral wire interruption.
HRN-57	1-M	monitored voltage	x	3	AC 3 x 300 - 500 V	x	x	•	•	x	x	•	x	x	x	Power supply from all phases, i.e. the relay function is preserved even if one phase fails.
HRN-57N	1-M	monitored voltage	x	3	AC 3 x 172 - 287 V	x	x	•	•	x	x	•	x	x	x	Power supply L1-N, i.e. the relay also monitors the neutral wire interruption, replacement for HRN-52.
HRN-54	1-M	monitored voltage	x	3	AC 3 x 300 - 500 V	x	x	•	•	•	x	•	x	x	x	If the supply voltage falls below 60% of Un (OFF lower level), the relay will immediately disconnects with no delay. Power supply from all phases, i.e. the relay function is preserved even if one phase fails.
HRN-54N	1-M	monitored voltage	x	3	AC 3 x 172 - 287 V	x	x	•	•	•	x	•	x	x	x	If the supply voltage falls below 60% of Un (OFF lower level), the relay will immediately disconnects with no delay. Power supply L1-N, i.e. the relay also monitors the neutral wire interruption.
HRN-43/UNI HRN-43/400 V	3-M	AC/DC 24-240 V AC 400 V	•	3	AC 3 x 84 - 480 V	x	x	•	•	•	• (+OFF)	•	x	•	•	2 output relays, functions of the second relay may be selected (independent/parallel). Galvanically separated power supply.
HRN-43N/UNI HRN-43N/400 V	3-M	AC/DC 24-240 V AC 400 V	•	3	AC 3 x 48 - 276 V	x	x	•	•	•	• (+OFF)	•	x	•	•	
HRN-56/208 HRN-56/240 HRN-56/400	1-M	monitored voltage	x	3	AC 3 x 125 - 276 V AC 3 x 144 - 276 V AC 3 x 240 - 460 V	x	•	x	•	•	x	•	x	x	x	Thanks to the power supply from all three phases, the relay is operational even if one phase fails.
HRN-56/480 HRN-56/575	3-M	monitored voltage	x	3	AC 3 x 228 - 550 V AC 3 x 345 - 660 V	x	•	x	•	•	x	•	x	x	x	
HRN3-70	3-M	monitored voltage	x	3	AC 3 x 190 - 500 V	x	x	• (o-fixed)	•	•	• (+OFF)	•	•	x	•	Selectable nominal voltage from 190 to 500 V. Adjustable restart delay from 1 to 300 s. Two output contacts, changeover 16 A. * (o-fixed) = over voltage value is fixed (110% from selected range).
PMR3-70	8-PIN	monitored voltage	x	3	AC 3 x 190 - 500 V	x	x	• (o-fixed)	•	•	• (+OFF)	•	•	x	•	
HRN3-80	1-M	monitored voltage	x	3	AC 3 x 208 - 480 V	x	•	x	•	•	• (+OFF)	•	x	x	x	Selectable nominal voltage from 208 to 480 V.
HRN3-81	1-M	monitored voltage	x	3	AC 3 x 208 - 480 V	x	x	x	•	•	• (+OFF)	•	x	x	x	Works in range from 208 to 480 V.
HRN-100	2-M	monitored voltage	x	3	$U_{Li} = 3 \sim 155 - 500 V$ $U_{Ln} = 3 \sim 90 - 288 V$	•	•	•	•	•	•	•	•	•	•	Configurable 3 or 4-wire connection. Extensive setting options. Each output can be configured individually.

* Galvanically isolated supply from monitored inputs

VOLTAGE RELAYS 1-phase, AC/DC



1-phase, mains voltage 48-276 V
overvoltage and undervoltage = 1x/2x output

1-phase, mains voltage 48-276 V
overvoltage = 1x output
undervoltage = 1x output

1-phase, mains voltage 24-150 V
overvoltage and undervoltage = 1x/2x output

Technical parameters	HRN-31 HRN-31/2 PMR1-31 PMR1-31/2	HRN-32/2	HRN-39 HRN-39/2 PMR1-39 PMR1-39/2
Type of monitored voltage	AC/DC	AC/DC	AC/DC
Monitored levels	multifunction	multifunction	multifunction
Functions	nine, selectable by rotary switch		
Monitoring range	48-276 V	48-276 V	24-150 V
Output	1x CO, 16 A 2x CO, 16 A	2x CO, 16 A	1x CO, 16 A 2x CO, 16 A
Housing	1-MODULE PLUG-IN (8-pin)	1-MODULE	1-MODULE PLUG-IN (8-pin)
Power supply	from monitored voltage		
Dimensions	48 x 48 x 79 mm (1.9" x 1.9" x 3.15")	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	48 x 48 x 79 mm (1.9" x 1.9" x 3.15")
Order code	8494 8438 8865 8536	8539	8496 8493 8868 8869



8-pin octal socket

1x common output contact for overvoltage and undervoltage. Adjustable delay 0 - 10 s to eliminate short-term peaks in the network.



2x independent output contacts, separately for overvoltage and undervoltage. Adjustable delay 0 - 10 s to eliminate short-term peaks in the network.



1x output contact for overvoltage and undervoltage. Adjustable delay 0 - 10 s to eliminate short-term peaks in the network.



VOLTAGE RELAYS 1-phase, DC



DC voltage 6-30 V
batteries and accumulators
overvoltage and undervoltage
= 1x/2x output

Technical parameters	HRN-36 HRN-36/2	PMR1-36 PMR1-36/2
Type of monitored voltage	DC	
Monitored levels	multifunction	
Functions	nine, selectable by rotary switch	
Monitored range	6-30 V	
Supply voltage	1x CO, 16 A 2x CO, 16 A	1x CO, 16 A 2x CO, 16 A
Housing	1-MODULE	PLUG-IN, into 8-pin octal socket
Power supply	from monitored voltage	
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	48 x 48 x 79 mm (1.9" x 1.9" x 3.15")

HRN-36: 8495
HRN-36/2: 8255

PMR1-36: 8866
PMR1-36/2: 8867



1-phase, AC or DC



with three input ranges for AC / DC
monitoring in 1-phase network
U_{min} = % of set U_{max}

with three input ranges for AC / DC
monitoring in 1-phase network
U_{min} = % of nominal input

Technical parameters	HRN-41	HRN-42
Type of monitored voltage	AC/DC	
Monitored levels	undervoltage and overvoltage	
Functions	one	
Monitored range	3 inputs: 10-50 V; 32-160 V; 100-500 V	
Supply voltage	2x CO, 16 A	
Housing	3-MODULE	
Power supply	AC/DC 24-240 V, AC 400 V	
Dimensions	90 x 52 x 65 mm (3.5" x 2" x 2.6")	

HRN-41/UNI: 8529

HRN-42/UNI: 8530
HRN-42/400 V: 4726



1x output contact for overvoltage and undervoltage. Adjustable delay 0 - 10 s to eliminate short-term peaks in the network.

Independent supply voltage galvanically separated from the measured one, optional function of the 2nd relay, optional hysteresis 5% / 10%, Memory function.

VOLTAGE RELAYS 3-phases



3 x 300-500 V
without NEUTRAL

3 x 172-287 V
with NEUTRAL

3 x 300-500 V
without NEUTRAL

3 x 172-287 V
with NEUTRAL

3 x 300-500 V
without NEUTRAL

3 x 172-287 V
with NEUTRAL

3 x 84 - 480 V
without NEUTRAL

3 x 48 -276 V
with NEUTRAL

Technical parameters	HRN-55	HRN-55N	HRN-57	HRN-57N	HRN-54	HRN-54N	HRN-43	HRN-43N
Phase failure	•	•	•	•	•	•	•	•
Phase sequence	•	•	x	x	•	•	•	•
Adjustable overvoltage	x (fixed)	x (fixed)	•	•	•	•	•	•
Adjustable undervoltage	x (fixed)	x (fixed)	•	•	•	•	•	•
Asymmetry	x	x	x	x	x	x	•	•
Monitored range	AC 3 x 300-500 V	AC 3 x 172-287 V	AC 3 x 300-500 V	AC 3 x 172-287 V	AC 3 x 300-500 V	AC 3 x 172-287 V	AC 3 x 84 - 480 V	AC 3 x 48 -276 V
Output	1x CO, 8 A						2x CO, 16 A	
Housing	1-MODULE						3-MODULE	
Power supply	from monitored voltage						AC/DC 24-240 V, AC 400 V	
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")						90 x 52 x 65 mm (3.5" x 2" x 2.6")	
Order code	7512	7513	7514	7515	7498	7511	UNI: 8531 400 V: 4730	UNI: 8532 400 V: 4734



VOLTAGE RELAYS 3-phases



3 x 125-276 V

monitors 3 phases (without NEUTRAL) with adjustable undervoltage level
3 x 144-276 V

3 x 240-460 V

3x 228-550 V

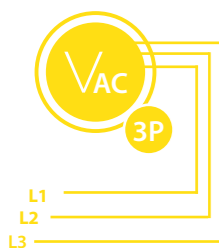
3 x 345-660 V

voltage/frequency
monitoring relay with
LCD display

Technical parameters	HRN-56/208	HRN-56/240	HRN-56/400	HRN-56/480	HRN-56/575	HRN-100
Phase failure	•	•	•	•	•	•
Phase sequence	•	•	•	•	•	•
Adjustable overvoltage	x	x	x	x	x	•
Adjustable undervoltage	•	•	•	•	•	•
Asymmetry	x	x	x	x	x	•
Monitored range	AC 3x 125-276 V	AC 3x 144-276 V	AC 3x 240-460 V	AC 3x 228-550 V	AC 3x 345-660 V	U _{LL} = 3 ~ 155-500 V U _{LN} = 3 ~ 90-288 V
Output	1x CO, 8 A					2x CO, 5 A
Housing	1-MODULE			3-MODULE		2-MODULE
Power supply	from monitored voltage					
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")			90 x 52 x 65 mm (3.5" x 2" x 2.6")		90 x 36 x 64 mm (3.5" x 1.5" x 2.6")
Order code	3710	3711	3712	3018	3019	7122



VOLTAGE RELAYS 3-phases



selectable range 190-500 V (without neutral)



selectable range 190-500 V (without neutral)



selectable range 208-480 V (without neutral)



fixed range 208-480 V (without neutral)

Technical parameters	HRN3-70	PMR3-70	HRN3-80	HRN3-81
Phase failure	•	•	•	•
Phase sequence	•	•	•	•
Adjustable overvoltage	x (fixed)	x (fixed)	x	x
Adjustable undervoltage	•	•	•	x
Asymmetry	• (+OFF)	• (+OFF)	• (+OFF)	• (+OFF)
Monitored range	190-500 V	190-500 V	208-480 V	208-480 V
Output	2x CO, 16 A	2x CO, 16 A	1x CO, 16 A	1x CO, 16 A
Housing	3-MODULE	PLUG-IN, into 8-pin octal socket	1-MODULE	1-MODULE
Power supply	from monitored voltage			
Dimensions	90 x 52 x 65 mm (3.5" x 2" x 2.6")	48 x 48 x 79 mm (1.9" x 1.9" x 3.1")	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	
Order code	8883	8528	8881	8882

Selectable nominal voltage from 190 to 500 V. Adjustable restart delay from 1 to 300 s. Two output contacts, changeover 16 A.

Selectable nominal voltage from 208 to 480 V.

Works in range from 208 to 480 V.



SPECIAL RELAYS signalization

power factor

frequency



optical signalization of 3-phase network (with NEUTRAL)



for power factor monitoring in two levels



for frequency monitoring in two levels

Technical parameters	MPS-1	COS-2	HRF-10
Circuit monitoring	3-phase	3/1-phase	1-phase
Adjustable range	fixed levels, indicated by colored LED: yellow: 50-207 V, green: 207-265 V, red: 265-276 V	COS φ 0.1-0.99	40-60 Hz, 48-72 Hz, 320-480 Hz
Output	-	2x CO, 16 A	2x CO, 8 A
Housing	1-MODULE	3-MODULE	
Power supply	AC 3x400/230 V (50-60 Hz)	AC/DC 24 V, AC 230 V, AC 400 V (AC 50-60 Hz)	AC 161-500 V (50/60/400 Hz)
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	90 x 52 x 65 mm (3.5" x 2" x 2.6")	

MPS-1: 4597

Used for optical signaling of the voltage level in 3-phases. 4-wire connection - L1, L2, L3, N. Monitors phase voltages against neutral wire. LED indicator - for every phase 1 LED.

COS-2/24V: 5544

COS-2/230V: 5543

COS-2/400V: 5236

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.

HRF-10: 5011

The relay is designed for monitoring the frequency of AC voltage, eg in photovoltaic power plants and generators.



CURRENT RELAYS 1-phase, AC



monitors the overcurrent of the conductor through the hole in the front panel



monitors undercurrent using a connected current transformer X/5 A



monitors overcurrent on measuring terminals in 7 ranges



monitors the overcurrent of the conductor through the hole in the body of the device

Technical parameters	PRI-32	PRI-35	PRI-51	PRI-52
Voltage type	AC	AC	AC	AC
Monitored levels	overcurrent	undercurrent	overcurrent	overcurrent
Monitored range	1 - 20 A (50-60 Hz)	0.5-5 A (50-60 Hz)	0.05 - 16 A (50-60 Hz) in 7 ranges	0.5 - 25 A (50-60 Hz)
Output	1x CO, 8 A	1x CO, 16 A	1x CO, 8 A	1x CO, 8 A
Housing	1-MODULE			
Supply voltage (frequency)	AC 24-240 V, DC 24 V (AC 50-60 Hz)	AC/DC 24-240 V (AC 50-60 Hz)	AC 24-240 V, DC 24 V (AC 50-60 Hz)	AC 230 V (50-60 Hz)
Dimensions	90 x 17.6 x 80.5 mm (3.5" x 0.7" x 3.2")		90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	

PRI-32: 8278
Monitor current level in single-phase AC circuits. The device has also in-built current transformer on the front panel.



PRI-35: 8271
Serves to protect a motor of a pump (submersible pump) against dry running.



Choose from 7 ranges:
PRI-51/0.5A: 7037 (AC 0.05-0.5A)
PRI-51/1A: 7038 (AC 0.1-1A)
PRI-51/2A: 7039 (AC 0.2-2A)
PRI-51/5A: 7040 (AC 0.5-5A)
PRI-51/8A: 7041 (AC 0.8-8A)
PRI-51/0.1-10A: 7072 (AC 0.1-10A)
PRI-51/16A: 7045 (AC 1.6-16A)



PRI-52: 3655
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.



CURRENT RELAYS 1-phase, AC

1-phase, AC & DC

3-phase, AC



multifunction current monitoring, 8 functions selectable by rotary switch



with three input ranges for AC/DC current
I_{min} = % of set I_{max}
I_{min} = % of nominal input



monitors overcurrent or undercurrent in 3-phases circuits
2x output contacts

Technical parameters	PRI-34	PRI-41	PRI-42	PRI-53
Voltage type	AC	AC / DC		AC
Monitored levels	multifunction	overcurrent and undercurrent		overcurrent or undercurrent
Function	eight, selectable by rotary switch	one		two
Monitored range	0.1 - 16 A (50-60 Hz) in 5 ranges	3 inputs: 0.32-1.6 A, 1-5 A, 3.2-16 A (AC 50-60 Hz)		0.4-1,2 A (50-60 Hz) 2-6 A (50-60 Hz)
Output	1x CO, 16 A	2x CO, 16 A		2x CO, 8 A
Housing	1-MODULE	3-MODULE		6-MODULE
Power supply	AC/DC 24 - 240 V (AC 50-60 Hz)	AC/DC 24-240 V (AC 50-60 Hz)		AC/DC 24 - 240 V (AC 50-60 Hz)
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	90 x 52 x 65 mm (3.5" x 2" x 2.6")		90 x 105 x 64 mm (3.5" x 4.1" x 2.6")
Order code	1A: 8896, 2A: 8282, 5A: 8283, 8A: 8897, 16A: 8284	UNI: 8534	UNI: 8535	4213 4214

Measures true root mean square value - TRUE RMS. Option to select functions with error state memory (Latch). Possibility to extend the current range using an external CT. Power supply and monitoring circuits are not galvanically separated.



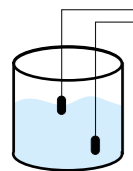
Independent supply voltage galvanically separated from the measured one, optional function of the 2nd relay, optional hysteresis 5% / 10%, Memory function.



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



LIQUID LEVEL RELAYS



for monitoring one or two levels



for monitoring one or two levels in IP65 protection



for monitoring one or two levels, or pumping of tanks



for monitoring up to 6-levels each probe has its own output contact

Technical parameters	HRH-5	HRH-7	HRH-8	HRH-9
Output	1x CO, 8 A	1x CO, 16 A	2x CO, 16 A	6x NO, 10 A
Sensitivity	5-100 kΩ	5-100 kΩ	5-100 kΩ	10-470 kΩ
Functions	2	2	8	10
Housing	1-MODULE	BOX	3-MODULE	6 -MODULE
Supply voltage (frequency)	24-240 V AC/ DC (AC 50-60 Hz)	24-240 V AC/DC (AC 50-60 Hz)	AC/DC 24 V; AC 110 V; AC 230 V; AC 400 V (AC 50-60 Hz)	AC/DC 24-240 V (AC 50-60 Hz)
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	139 x 139 x 56 mm (5.5 x 5.5 x 2.2")	90 x 52 x 65 mm (3.5" x 2" x 2.6")	90 x 105 x 65 mm (3.5" x 4.1" x 2.6")
Order code	8093	4947	230V: 5542 24V: 5556	8133
	The relay is designed for monitoring the level of conductive fluids with the option of selecting functions: pump-up or pump-down. Optionally set configurations: single-level or double level switch.	Suitable to operate/work in harsh conditions due to the high degree of protection IP65. The same functions as for HRH-5.	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.	Each of the six probes has its own output contact. Optional function of each probe independently: - pump-up - pump-down - including optional delay. Automatic and manual calibration.

LIQUID LEVEL RELAYS

LIQUID LEVEL SETS

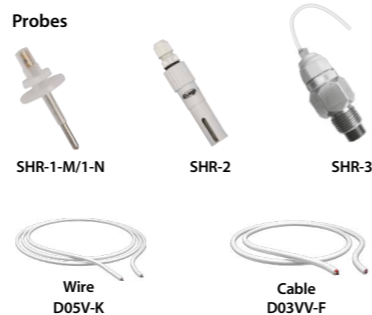
PROBES AND CABLES



for controlling 5-levels in IP65 protection



set of HRH-5 relay and contactor



Technical parameters	HRH-6/DC	HRH-6/AC	HRH-4	ACCESSORIES
Output	1x NO, 10 A		HRH-4/230V 209970800023 It is a complete unit consisting of HRH-5 level relay and VS425 contactor. Designated for an automatic operation in 1-phased and 3-phased pumps.	SHR-1-M: 209970800002 brass sensor. SHR-1-N: 209970800001 stainless steel sensor. SHR-2: 209970800003 Stainless steel sensor in PVC housing with hanging cord. Seal with IP67 grommet. SHR-3: 209970800004 Stainless steel sensor. for use in harsh and industrial environments. D03VV-F 3x0.75/3.2: 209970500106 Cable for probes SHR-1 and SHR-2, 3x 0.75 mm ² D05V-K 0.75/3.2: 6594 Wire for probes SHR-1 and SHR-2, 1x 0.75 mm ² All types (excluding SHR-3) meet the requirements for continuous contact with a drinking water.
Sensitivity	10 - 200 kΩ			
Functions	2			
Housing	box IP65			
Supply voltage (frequency)	DC 12-24 V	AC 230 V (AC 50-60 Hz)		
Dimensions	110 x 130 x 72 mm (4.3" x 5.1" x 2.8")			
Order code	3740	3699		
	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.			

THERMOSTATS on DIN rail



single-level thermostats

double thermostat

monitoring temperature of motor winding

digital with built in time switch

Technical parameters	TER-3A	TER-3B	TER-3C	TER-3D	TER-3E	TER-3H	TER-3F	TER-3G	TER-4	TER-7	TER-9
Monitored range	-30 .. 10°C	0 .. 40°C	30 .. 70°C	0 .. 60°C	0 .. 60°C	-15 .. 45°C	0 .. 60°C	0 .. 60°C	-40 .. 110°C	1.8 - 3.3 kΩ	-40 .. 110°C
Thermosensor type	external, TC/TZ						built-in	Pt100	external, TC/TZ	external, PTC	external, TC/TZ
Output	1x NO, 16 A								2x CO, 16 A	2x CO, 8 A	2x CO, 8 A
Housing	1-MODULE								3-MODULE	1-MODULE	2-MODULE
Supply voltage (frequency)	AC/DC 24-240 V (AC 50-60 Hz)								AC/DC 24-240 V (AC 50-60 Hz)	AC/DC 24 V-240 V (AC 50-60 Hz)	AC/DC 24 V, AC 230 V (AC 50-60 Hz)
Dimensions	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")								90 x 52 x 65 mm (3.5" x 2" x 2.6")	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	90 x 35 x 64 mm (3.5 x 1.4 x 2.5")
	TER-3A 3839 TER-3B 3840 TER-3C 3841 TER-3D 3842			TER-3E: 3843 TER-3F: 3844 TER-3G: 3845 TER-3H: 3846			TER-4/UNI: 8533 Double thermostat for monitoring and regulating the temperature. 2 inputs for TC/TZ sensor. Galvanically isolated power supply.		TER-7: 3716 It monitors motor winding temperature. PTC sensor built-in in motor winding is used as a sensing element.	TER-9/230V: 4698 TER-9/24V: 4699 Digital thermostat with 6 functions.	
	Temperature sensors TC/TZ/PT100 more on page 23										

THERMOSTATS with IP65 protection



two-level thermostat in IP65 protection



single-level thermostat in IP65 protection



single-level thermostat in IP65 protection



single-level thermostat for outdoor use with IP65 protection

Technical parameters	TEV-1	TEV-2	TEV-3	TEV-4
Monitored range	-20 .. +20°C	-20 .. +20°C	+5 .. +35°C	-30 .. +60 °C
Thermosensor type	external TC/TZ			built-in
Output	1x CO, 16 A			1x NO, 12 A
Housing	enclosure IP65			IP65
Supply voltage (frequency)	AC 230 V (50-60 Hz)			AC 230 V (50-60 Hz)
Dimensions	110 x 135 x 66 mm (4.33" x 5.3" x 6.6")			153 x 62 x 34 mm (6" x 2.4" x 1")
Order code	2912	2925	2926	4057
	Window function = monitors temperature between two set levels	Transparent cover to see setting and wiring.	Selectable function: cooling/heating. Setting of the monitored temperature on enclosure	Selectable function: cooling/heating. Option of voltage or potential-free contact

THERMOSTATS, HYGROSTATS



programmable multifunction chronothermostat



multifunction thermostat



hygrothermostat optional functions



hygrosstat

Technical parameters	21235	21236	RHT-1	RHV-1
Monitored temperature range	-9 .. +35°C	-9 .. +35°C	0 .. +60°C	-
Monitored humidity range	-	-	50 - 90°C	0 - 90 %
Output	1x CO, 16 A	1x CO, 16 A	1x NO, 16 A	1x NO, 12 A
Housing	LOGUS ⁹⁰	LOGUS ⁹⁰	1-MODULE	IP65
Supply voltage (frequency)	AC 100-240 V (50-60 Hz)	AC 100-240 V (AC 50-60 Hz)	AC/DC 24-240 V (AC 50-60 Hz)	AC 230 V (50-60 Hz)
Dimensions	KU68 box	KU68 box	90 x 17.6 x 64 mm (3.5" x 0.7" x 2.5")	153 x 62 x 34 mm (6" x 2.4" x 1.3")
Order code	21235	21236	8208	8207

Allows you to manually or automatically control heating or air conditioning in relation to the daily or weekly program and the set temperature.

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.

Hygro-thermostat for temperature monitoring and control - range 0 to +60 °C and relative humidity - range 50.90 %. Sensor is part of device - designated for measuring in switchboard.

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



THERMO-VALVES

TEMPERATURE SENSORS



energy saving digital radiator thermo-valve



thermo-drive



for range -20 .. +80°C PVC insulation



for range -40 .. +125°C silicone insulation



for range -30 .. +200°C double silicone insulation

ATV-1	TELVA-2	TC	TZ	Pt100
-------	---------	----	----	-------

ATV-1: 6088
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 to 5 years).
Quick and easy installation.



TELVA-2 230V, NO: 8196
TELVA-2 230V, NC: 8197
TELVA-2 24V, NO: 8198
TELVA-2 24V, NC: 8199
Thermodriver Telva-2 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



NTC thermistor 12 kΩ.
4 cable lengths: 10 cm, 3 m, 6 m and 12 m.
TC-0: 209970800010
TC-3: 209970800011
TC-6: 209970800012
TC-12: 209970800013

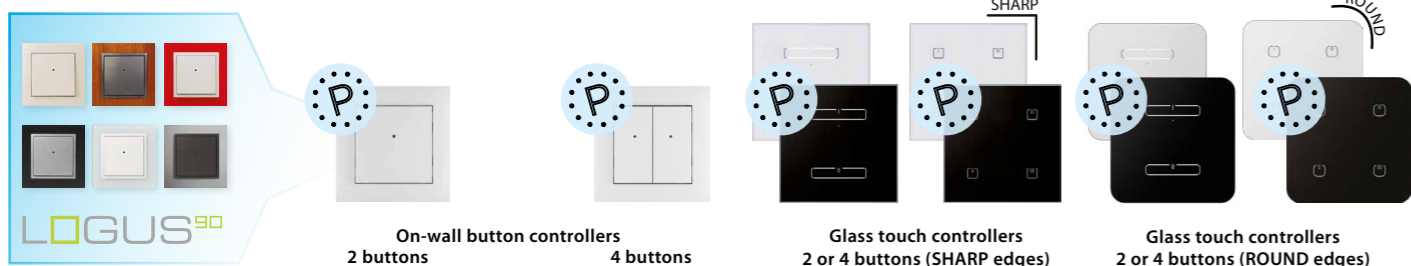
NTC thermistor 12 kΩ.
4 cable lengths: 11 cm, 3 m, 6 m and 12 m.
TZ-0: 209970800014
TZ-3: 209970800015
TZ-6: 209970800016
TZ-12: 209970800017

PTC sensor.
3 cable lengths: 3 m, 6 m and 12 m.
PT100-3: 3613
PT100-6: 3614
PT100-12: 3615

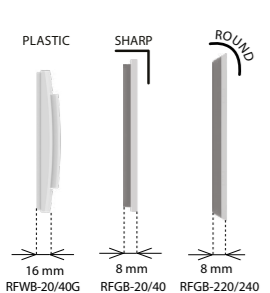


WIRELESS ELECTRO-INSTALLATION





Technical parameters	RFWB-20/G	RFWB-40/G	RFGB-20	RFGB-40	RFGB-220	RFGB-240
Number of channels	2	4	2	4	2	4
Power supply	3 V battery CR 2032		2x 3 V batteries CR 2032		2x 3 V batteries CR 2032	
Design	LOGUS ⁹⁰		glass - sharp		glass - round	
Colour	in LOGUS ⁹⁰ variations		W - white, B - black		W - white, B - black	
Dimensions	85 x 85 x 16 mm		94 x 94 x 8 mm		100 x 100 x 8 mm	
Protocol	PROG		RFIO2		RFIO2	
Order code	8502	8489	20/B: 8512 20/W: 8513	40/B: 8488 40/W: 8514	220/B: 8518 220/W: 8517	240/B: 8516 240/W: 8515



Wireless controller in LOGUS⁹⁰ design. Standard BASE design (white plastic), but can be combined with glass, wood, metal or stone in the frame design.

RFGB-20/B: 2-buttons, black glass
RFGB-40/B: 4-buttons, black glass
RFGB-20/W: 2-buttons, white glass
RFGB-40/W: 4-buttons, white glass
 Glass touch controllers with 2 or 4 buttons, in black or white glass with sharp edges.

RFGB-220/B: 2-buttons, black glass
RFGB-240/B: 4-buttons, black glass
RFGB-220/W: 2-buttons, white glass
RFGB-240/W: 4-buttons, white glass
 Glass touch controllers with 2 or 4 buttons, in black or white glass with round edges.



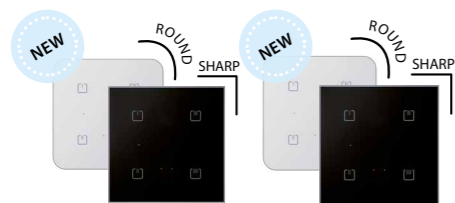
with relays

with dimmer

outdoor

key fob

pilot



Glass touch controller with output relays

Glass controller with dimmer SHARP edges



Outdoor 2-buttons controller



Key fob - 4 buttons black white

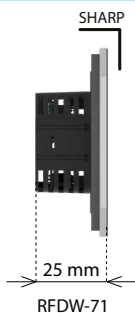


Key fob - 6 buttons black white



Controller with display anthracit white

Technical parameters	RFSW-62 262	RFDW-71 271	RFOWB-20	RF KEY-40	RF KEY-60	RF PILOT
Number of channels	4	4	2	4	6	40
Power supply	230 V AC / 50-60 Hz	AC 230 V or 120 V AC	3 V battery CR 2032	3 V battery CR 2032		2x batteries 1.5 V AAA/R03
Design	glass sharp / round	glass sharp / round	IP65	key fob		remote controller
Colour	W - white, B - black	W - white, B - black	white	B - black	W - white	A - anthracit
Dimensions	94 x 94 x 41mm	94 x 94 x 36 mm	64 x 74 x 44 mm	64 x 25 x 10 mm		130 x 41 x 18 mm
Protocol	RFIO2	RFIO2	RFIO2	RFIO2		RFIO
Order code	62/B: 8870 262/B: 8890 62/W: 8891 262/W: 8892	71/B: 8824 271/B: 8893 71/W: 8894 271/W: 8895	8147	8503	8504 8490 8505	4516 4376



Possibility to set the memory of the output state during a power failure and subsequent restoration of the power supply.

Glass controller with integrated dimmer R - L - C - ESL - LED for loads up to 160 VA (for 230V). 4 buttons can control the dimmer or other INELS RF wireless units. Flush mounted in the installation box.

Wireless push button controller with IP65 protection designed for outdoor and humid environments.

Controller in the size of a keychain comes in black and white colour. 4 or 6 buttons allows you to control an unlimited number of units.

Remote controller with OLED display allows to control up to 40 units. Provides the ability to divide elements into Rooms, Favourites or Scenes.



Screwless terminals for faster wiring
 Multifunction 1-channel
 Single function 1-channel
 Multifunction switching units with inputs for external buttons 1-channel
 Multifunction switching units with inputs for external buttons 2-channels
 Lighting control unit with detectors

Technical parameters	RFS-61B	RFSAI-11B-SL	RFSAI-61B-SL	RFSAI-61BPF-SL	RFSAI-62B-SL	RFSAI-161B
Output	1x NO, 8 A	1x NO, 8 A	1x NO, 8 A	1x NO, 8 A	2x NO, 8 A	1x NO, 12A AC1
Supply voltage (frequency)	AC 230 V (50-60 Hz)					
Design	BOX	BOX-SL			BOX	
Dimensions	49 x 49 x 21 mm	43 x 44 x 22 mm			49 x 49 x 21 mm	
Protocol	RFIO2					
Order code	4995	8375	8204	8910	8201	4934



BOX-SL flush mounted

- 6 functions
- 1 output

- switch on/off
- 1 output

- 6 functions
- 1 output contact 8A
- 1 input for external button

- 6 functions
- 1 output contact 8A
- 1 input for external button
- galvanically separated

- 6 time functions
- 2x output contacts 8A
- 2 inputs for wired buttons

As RFS-161B, but with a pre-set algorithm for lighting control (e.g. hotel room) based on upstream wireless detectors. Input for connecting a wire button. Part of the HRESK system.



SWITCHES shutters

on DIN rail

HRESK



Switch unit with external input



Multifunction 1-channel



Multifunction 6-channels



Fancoil controller 6-channels

Technical parameters	RFJA-32B-SL	RFS-61MI RFS-61M	RFS-66MI RFS-66M	RFS-166M
Output	2x NO, 8 A	1x CO, 16 A	3x CO / 3x NO, 8 A	3x CO / 3x NO, 8 A
Supply voltage (frequency)	230 V AC (50-60 Hz)	110-230 V AC (50-60 Hz)	AC 110-230 V (50-60 Hz), or AC/DC 12-24 V SELV	AC 110-230 V (50-60 Hz)
Design	BOX-SL	1-MODULE	3-MODULE	3-MODULE
Dimensions	43 x 44 x 22 mm	90 x 17.6 x 64 mm	90 x 52 x 65 mm	90 x 52 x 65 mm
Protocol	RFIO2	RFIO2	RFIO2	RFIO2



MODULE on DIN rail

RFJA-32B/230V: 8254
 2 independent outputs for control of two-way motors: garage doors, gates, blinds, shutters, ...
 Inputs for connecting external control wired buttons.

RFS-61MI: 8154
RFS-61M: 7721
 MI - integrated antenna
 M - SMA connector for external antenna.
 AN-I antenna is part of the unit.

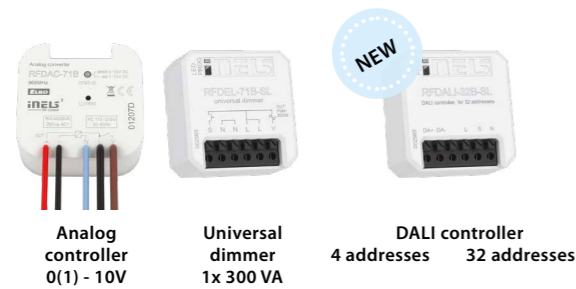
RFS-66MI/24V: 8156
RFS-66MI/110-230V: 8906
RFS-66M/24V: 5291
RFS-66M/110-230V: 8905
 MI - integrated antenna
 M - SMA connector for external antenna.
 AN-I antenna is part of the package.

RFS-166M/230V: 3432
 Fancoil control:
 • heating / cooling mode
 • 3 speed levels
 The last channel can be switched by any appliance (e.g. lights). It is controlled by the RFTC-150/G thermostat. It can have detectors in front (window / door openers (RFDW-100)).



DIMMERS flush mounted

on DIN rail



Technical parameters	RFDAC-71B	RFDEL-71B-SL	RFDALI-04B-SL	RFDALI-32B-SL	RFDEL-71M	RFDA-73M/RGB	RFDEL-76M
Output	0(1) - 10 V contact 16 A	R - L - C - LED - ESL 160 VA	4x DALI units	32x DALI units	R - L - C - LED - ESL 600 VA 300 VA	3x 5 A	R - L - C - LED - ESL 6x 150 VA 6x 75 VA
Supply voltage (frequency)	AC 110-230 V (50-60 Hz)	AC 230 V (50 Hz)	100-230 V (50 Hz)		AC 230 V (50 Hz) AC 120 V (60 Hz)	DC 12-24 V stabilized	AC 230 V (50 Hz) AC 120 V (60 Hz)
Design	BOX	BOX-SL		3-MODULE		6-MODULE	
Dimensions	49 x 49 x 21 mm	43 x 44 x 22 mm		90 x 52 x 65 mm		90 x 105 x 65 mm	
Protocol	RFIO2				RFIO2		RFIO2
Order code	4993	8361	8527	8434	4897 5304	4916	8205 8209

Used to control devices with analog control voltage 0(1)-10V. Included is a relay contact to turn off the ballast light.

The light source is selected by a switch on the front panel, potentiometer for minimum brightness, input for wired button.

It should dimm up to 4 / 32 DALI drivers powered from DALI BUS. Configuration via bluetooth from the app.

As version "RFDEL-71B", but DIN rail designed inputs for external control by potentiometer or analog voltage 0 (1) - 10 V.

The dimmer for LED strips is used for independent control of 3 single-colour LED strips or one RGB LED strip.

Universal six-channels dimmer with an output of 150 VA / 75 VA channel. The outputs can be connected in parallel and multiply the power at the expense of the number of outputs (up to 900 VA / 230 V) when connecting all 6 outputs together.



SOCKETS dimming

switching



Dimming socket-plug



Switching socket-plug



Switching unit for outdoor use

Technical parameters	RFDSC-71N	RFSC-61N	RFUS-61
Type of load	R - L - C - LED - ESL max. 300 W/150 W	1x NO, 16 A/AC	1x CO, 12 A/AC1
Supply voltage (frequency)	AC 230 V (50-60 Hz)	AC 230-250 V (50-60 Hz)	AC 230 V (50-60 Hz)
Design	socket-plug	socket-plug	IP65
Dimensions	63 x 110 x 74 mm	63 x 110 x 74 mm	136 x 62 x 34 mm
Protocol	RFIO2	RFIO2	RFIO2



RFUS-61/120V: 5256
RFUS-61/230V: 5853
Switching component with 1 output channel in a box with increased coverage for outdoor environments.



DETECTORS



Technical parameters	RFSF-1B	RFSF-100	RFSOU-1	RFWD-100	RFMD-100
Battery power	1x 3 V battery CR 2477	2x batteries 1.5 V AAA	2x batteries 1.5 V AAA	1x 3 V battery CR 2032	2x batteries 1.5 V AAA
Design	BOX	disc box	IP65	interior	interior
Dimensions	49 x 49 x 13 mm	Ø 89 x 23 mm	72 x 62 x 34 mm	25 x 75 x 16 mm / 15 x 75 x 14 mm	72 x 62 x 34 mm
Protocol	RFIO	RFIO2	RFIO	RFIO2	RFIO2
Order code	4860	7682	4707	5027	5029



Liquid probe

External probe designed for Level sensor RFSF-1B for flood monitoring. 1 m cable can be extended by 30 m.

Conductivity probes (recommended FP-1) can be connected to the INPUT terminals to monitor flooding or the level in the tank. When activated, it sends a command to the actuator or eLAN.

The flood detector is used to detect water leaks - activation occurs when the contacts located on the bottom of the detector are flooded.

2 functions in 1 unit:
Twilight switch for range 1-1.000 lx or
Light switch for the range 100-100,000 lx
Setting the values of the potentiometers inside. Enclosure with increased IP65 protection for demanding environments.

Main device (wider part) and Magnet (narrower part) glued to the moving parts (door, window, gate...)
Activation occurs when the detector is moved away from the magnet.

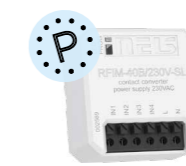
The motion detector PIR is used to detect persons moving inside the building interior.
Detection angle 105°
Detection distance max: 12 m
Working height: 2.4 m
Integrated light sensor and tamper against unwanted opening of the cover.



DRY CONTACTS CONVERTERS



4 contacts converter battery powered



4 contacts converter AC 230 V powered



1 contact converter - permanent switching



Pulse converter

Technical parameters	RFIM-40B/BP-SL	RFIM-40B/230-SL	RFSG-1M	RFTM-1
Battery power	batterie CR2032	AC 230V (50-60 Hz)	AC 10-230 V (50-60 Hz)	2x 1.5 batteries AAA
Design	BOX-SL	BOX-SL	1-MODULE	BOX
Dimensions	43 x 44 x 22 mm	43 x 44 x 22 mm	90 x 17.6 x 64 mm	72 x 62 x 34 mm
Protocol	RFIO2	RFIO2	RFIO2	RFIO
Order code	8406	8407	8240	4315

Converts 4 potential-free inputs that can be closed for a short time (buttons) or permanently (switch, contact) on the RF signal.

RFIM-40B / BP-SL: battery supply (CR 123A)
RFIM-40B / 230-SL: mains supply (AC 230V)

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. Bidirectional communication RFIO2.

Allows conversion of pulses produced by energy meters. Via LS sensors (detects flashing LEDs on the meter) or MS (magnetic sensor for water meter handle or gas meter dial). It has a terminal for connecting the pulse output (open contact, 50 terminals of the electricity meter).





Simple temperature controller



Autonomous temperature controller



Thermostat for fancoil control via RFS-166M

Covers:



AL - aluminium



GE - ice



IS - gray



MF - ivory



PE - pearl

Technical parameters	RF-TC-10/G	RF-TC-50/G	RF-TC-150/G
Battery power	2 x 1.5 V battery AAA		
Design	LOGUS ⁹⁰		
Dimensions	85 x 85 x 16 mm / 94 x 94 x 16 mm		
Protocol	RFIO		
Order code	RF-TC-10/G/BR	RF-TC-50/G/BR	RF-TC-150/G/BR

RF-TC-10/G: design BASE, white cover, white frame, **order code:** RF-TC-10/G/BR
- used for temperature measurement (in the range of 0 to 55 °C) and correction of the pre-set temperature in RF Touch or eLAN-RF system devices in the range of ± 5 °C.

RF-TC-50/G: design BASE, white cover, white frame, **order code:** RF-TC-50/G/BR
- is a separate thermostat that allows wireless control of up to 4 switching elements, eg. RFS-6x / RFUS-61 / RFSTI-11B.

RF-TC-150/G: design BASE, white cover, white frame, **order code:** RF-TC-150/G/BR
- thermostat for controlling the RFS-166M switching component for fan coil control.
Thermostat **covers** are available in: Pearl (PE), Ivory (MF), Gray (IS), Ice (GE) and Aluminium MF(AL) colour. It is thus possible to combine them with all LOGUS⁹⁰ frames.

Compatibility control

	RF-TC-10/G	RF-TC-50/G	RF-TC-150/G
RF Touch	✓	x	x
eLAN-RF	✓	x	x
RFS-6x	✓	✓	✓
RFSTI-11B	x	✓	x
RFS-166M	x	x	✓



Switching unit with temperature sensor



Temperature sensor



Overheating/overcooling switch unit with advanced functions



Wireless thermal head

Technical parameters	RFSTI-11B-SL	RFTI-10B	RFSTI-111B	RFATV-2
Supply voltage (frequency)	AC 230 V	1x 3 V battery CR 2477	AC 230 V (50-60 Hz)	battery 2x 1,5 V AA
Design	BOX-SL	BOX		thread on the valve
Dimensions	43 x 44 x 22 mm	49 x 49 x 13 mm	49 x 49 x 21 mm	52 x 52 x 70 mm
Protocol	RFIO2	RFIO	RFIO2	RFIO2
Order code	8404	3175	4915 3409	8259

Switching component (16 A relay contact) with input for external temperature thermosensors TC / TZ. It can be combined with units: eLAN-RF, RF Touch and RF-TC-50/G.

The internal or external TC / TZ sensor measures the temperature in the range -20 to + 50 °C and sends it to the system device (eLAN-RF or RF-Touch) at regular intervals (5 min).

Most suitable for hotel rooms. The components support communication with RF detectors. Range 160 m.

The wireless thermal head measures the room temperature with an internal sensor, and opens / closes the radiator valve based on the set program in the system component.



Temperature sensors TC/TZ more on page 23



Wireless touch unit on the wall



Wireless touch unit flush mounted (eLAN-RF included)



Smart RF Gateway with LAN



Repeater (socket-plug)

Technical parameters	RF Touch-W	RF Touch-2/B	eLAN-RF-103	RFRP-20N
Number of connectable components*	40	70	70	20
Supply voltage (frequency)	AC 100-230 V (50-60 Hz) or 12 V DC adapter	24 V DC (terminals) USB-C (external adapter) PoE (through LAN)	adapter 5V DC / 1A	AC 230 V (50-60 Hz)
Design	on the wall	flush mounted	aluminum box	socket-plug
Dimensions	94 x 94 x 24 mm	86 x 86 x 10 (37)mm	90 x 52 x 65 mm	63 x 110 x 74 mm
Protocol	RFIO2			
Order code	5174	8266	8044	French: 8423 Schuko: 8424 British: 8425

* allow to control the units independently

It includes simple automation functions, such as temperature and time programs, control of RGB strips and light bulbs, quick control and more.

Like RF Touch-B with new display (diagonal 4", 480x480 px, multi touch). Communication: iNELS radio, wi-fi and LAN. Including eLAN-RF for direct or indirect (iNELS Cloud) control from iNELS app.

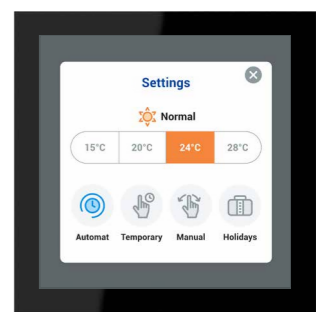
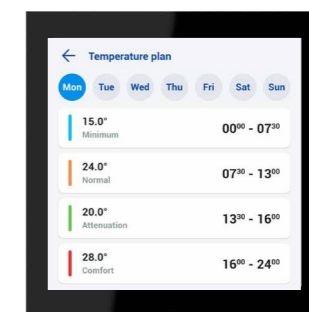
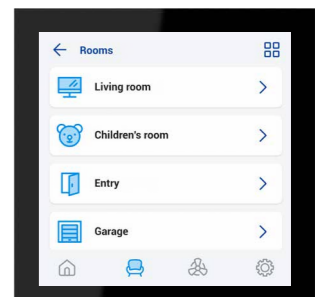
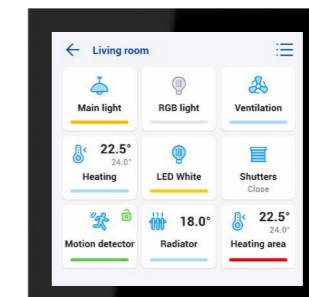
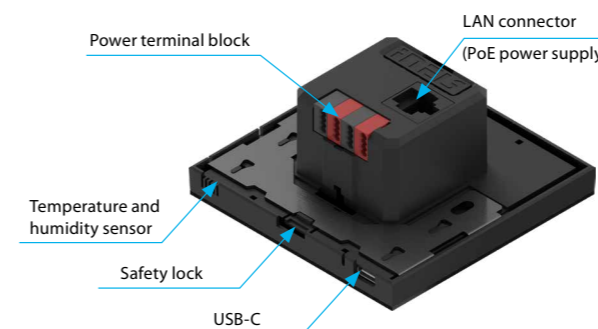
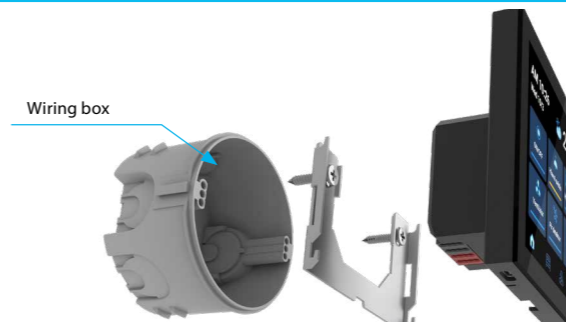
The RF Smart box is a gateway between iNELS RF components and applications: smartphone, tablet, watch, television, voice assistants (Google Home & Alexa) and other third party devices. Allows remote control: direct or via Cloud: eLAN-RF-103: LAN communication

The signal repeater is used to increase the range between the controller and the component by up to 200 meters. It is designed for signal transmission to up to 20 components.



Device description

Screen preview



ACCESSORIES



RFAF/USB	AN-I	AN-E	AN-E3	Extension cable
RFAF/USB: 4503 The RFAF / USB Service Key (in conjunction with the RF_analyzer) is designed for iNELS RF Control system partners.	AN-I: 6180 Polarization: vertical Gain: 2.1 dBi Dimensions: 17 x 44 x 8,5 mm Impedance: 50 Ω Colour: black	AN-E: 209930606056 Cable length: 3 m Polarization: vertical Gain: 5 dBi Impedance: 50 Ω Colour: black Dimensions: Ø 30 x 280 mm	AN-E3: 8219 Cable length: 3 m Polarization: vertical Gain: 3 dBi Impedance: 50 Ω Colour: black Dimensions: Ø 50 x 88 mm	EC-10: 8191 SMA connectors (male/female) Cable length: 10 m Colour: white

SMART KITS preprogrammed for easy installation

WIRELESS SWITCH

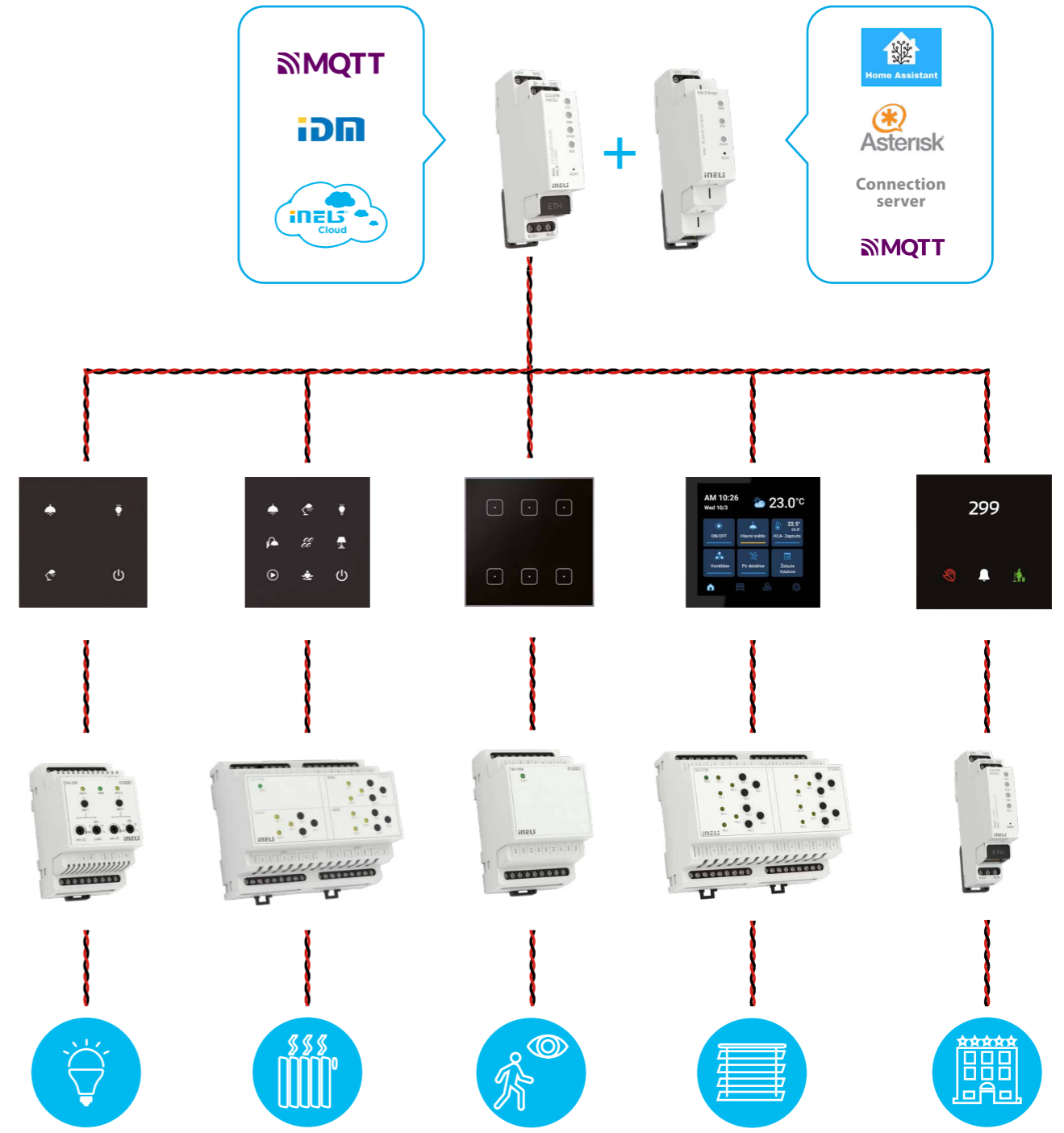
WIRELESS SWITCH - LUXURY <ul style="list-style-type: none"> Glass touch controller - SHARP design, white Switch unit with ON / OFF function (for lights, sockets, electric heating, gates,...) 	2 WIRELESS SWITCHES - CLASSIC <ul style="list-style-type: none"> On-wall button controllers duo - plastic, white 2 pcs switching unit with ON / OFF function (for lights, sockets, electric heating, gates,...) 	2 WIRELESS SWITCHES WITH KEY-FOB <ul style="list-style-type: none"> Pocket wireless controller - 4-button, white 2 pcs switching unit with ON / OFF function (for lights, sockets, electric heating, gates,...) 	WIRELESS SWITCH SOCKET - LUXURY <ul style="list-style-type: none"> Glass touch controller - ROUND design, black Wireless switch socket-plug 	WIRELESS SWITCH SOCKET - CLASSIC <ul style="list-style-type: none"> On-wall button controllers - plastic, white Wireless switch socket-plug

DIMMERS KITS

WIRELESS LIGHT DIMMER - LUXURY <ul style="list-style-type: none"> Glass touch controller - 4-button, ROUND design, white Universal dimmer for light source control (R, L, C, ESL, LED) 	2 WIRELESS LIGHT DIMMERS - LUXURY <ul style="list-style-type: none"> Glass touch controller - 4-button, SHARP design, black 2 pcs universal dimmer for light source control (R, L, C, ESL, LED) 	2 WIRELESS LIGHT DIMMERS - CLASSIC <ul style="list-style-type: none"> On-wall button controllers duo - plastic, white 2 pcs universal dimmer for light source control (R, L, C, ESL, LED) 	WIRELESS LIGHT DIMMER - LUXURY <ul style="list-style-type: none"> Glass touch controller - 4-button, SHARP design, white Universal dimmer for light source control (R, L, C, ESL, LED) 	WIRELESS DIMMING SOCKET - LUXURY <ul style="list-style-type: none"> Glass touch controller - 4-button, ROUND design, black Wireless dimmable socket-plug



WIRED ELECTRO-INSTALLATIONS iNELS BUS



CENTRAL UNITS



Central unit with 1x BUS, 1x EBM



Central unit with 2x BUS



Central unit with 1x BUS, 1x DALI



Central unit with 1x BUS, 1x MODBUS

CU3-07M	CU3-08M	CU3-09M/DALI	CU3-10M
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Order Code: 8010

CU3-07M is one of the basic system control units of iNELS BUS installations. The unit can work independently, as an autonomous project, or it can be controlled by the central software or MQTT as part of a larger project. The unit is equipped with one BUS to which it is possible to connect up to 32 elements from the iNELS BUS portfolio. Ethernet connector is used for iNELS app or cloud communication or for communication with the superior unit within the iNELS IP topology. The central unit is implemented with MQTT protocol for 3rd party communication.



Order Code: 8440

CU3-08M is one of the basic system control units of iNELS BUS installations. The unit can work independently, as an autonomous project, or it can be controlled by the central software or MQTT as part of a larger project. The unit is equipped with two BUS, to which it is possible to connect a total of up to 64 elements (2x32) from the iNELS BUS portfolio. Ethernet connector is used for iNELS app or cloud communication or for communication with the superior unit within the iNELS IP topology. The central unit is implemented with MQTT protocol for 3rd party communication.



Order Code: 8465

CU3-09M/DALI is a special version of the mini-fied central unit and is designed to control DALI electronic ballasts from the iNELS system. The unit can work independently, as an autonomous project, or it can be controlled by the central software or MQTT as part of a larger project. The unit is equipped with one BUS, one DALI bus and one RJ45 connector. The DALI system bus allows the control of up to 64 independent DALI ballast addresses for fluorescent, LED and other luminaires. Ethernet connector is used for iNELS app or cloud communication or for communication with the superior unit within the iNELS IP topology. The central unit is implemented with MQTT protocol for 3rd party communication.



Order Code: 8521

CU3-10M is one of the basic system control units of iNELS BUS installations. The unit can work independently, as an autonomous project, or it can be controlled by the central software or MQTT as part of a larger project. The unit is equipped with one BUS to switch it is possible to connect up to 32 elements from the iNELS BUS portfolio. The CU3-10M system unit is equipped with one Modbus system bus. The Modbus system bus allows control of modbus thermostat and Air condition units (RS-485). Ethernet connector is used for iNELS app or cloud communication or for communication with the superior unit within the iNELS IP topology. The central unit is implemented with MQTT protocol for 3rd party communication.



SYSTEM UNITS



Power supply 30 W with BUS separator



Power supplies for iNELS BUS



BUS separator from power supply



BUS separator from power supply

Technical parameters	PS3-30/iNELS	PSM3-30/iNELS, PSM3-60/iNELS, PSM3-100/iNELS			BPS3-01M	BPS3-02M
Output	27 V / 1A	27 V DC			1x BUS	2x BUS
Supply voltage (frequency)	100-250 V AC (50-60 Hz)	AC 100 - 240 V (50-60 Hz)			BUS 27 V DC	
Rated current	-	30 W	60 W	92 W	8 mA (at 27 V DC)	15 mA (at 27 V DC)
Dimensions	90 x 52 x 65 mm	90 x 35 x 58 mm	90 x 52.5 x 58 mm	90 x 70 x 58 mm	90 x 17.6 x 64 mm	
Order code	8011	8476	8477	8478	3244	3243

Power 30 W, integrated bus separator BPS3-01M.

Used to supply central units and external master within intelligent electroinstallation iNELS. Through BUS separators from the supply voltage BPS3-01M and BPS3-02M, it supplies BUS lines from which iNELS peripheral units are also powered.

This separator 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.



LIGHTING CONTROL



Gateway iNELS-DALI/DMX



Combined detector



Luminescence sensor

Technical parameters	EMDC-64M	DMD3-1	DLS3-1
iNELS BUS/EBM	EBM	BUS	BUS
DALI/DMX BUS	64 channels / 32 channels	yes/no	yes/no
Supply voltage	AC 230 V (50-60 Hz), max. 100 mA	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	-	18 mA (at 27 V DC)	12 mA (at 27 V DC)
Housing	3-MODULE	ceiling mounting	IP65 box
Dimensions	90 x 52 x 65 mm	Ø 76 x 73 mm	96 x 62 x 34 mm
Order code	5030	5751	5750

The converter supplies the DALI BUS - 16 V, 250 mA. The EMDC-64M unit is designed to control electronic DALI ballasts and DMX receivers from the iNELS system. It allows controlling of up to 64 independent electronic DALI ballasts or 64 independent DMX receivers.



The motion detector is used to detect movement in the area using the passive infrared scanning spectrum for detection. Integrated luminescence sensor can be used for sensing current luminescence at the point of installation of the unit. This unit can be installed also on DALI BUS.



DLS3-1 is for sensing the current luminescence in the place of installation the unit. The DLS3-1 is supplied in IP65 protection box and can be installed outdoors. The unit supports DALI BUS.



CONVERTERS



Analog - digital converter 6 inputs



Digital - analog converter 4 inputs

Technical parameters	ADC3-60M	DAC3-04M
Output	-	4x 0(1) - 10 V / 10 mA
Input	1x temperature, 6x analog; 0-10 V; 0-20 mA	1x temperature
Supply voltage	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	100 mA (at 27 V DC)	50 mA (at 27 V DC)
Housing	3-MODULE	3-MODULE
Dimensions	90 x 52 x 65 mm	90 x 52 x 65 mm
Order code	3301	3256

Analog signal converter is iNELS3 device which converts analog to digital signal (e.g. for weather station connection), 6x analog input, 2x temperature input for TC or TZ sensor.



Converter from a digital signal to an analog voltage signal 0(1)-10 V, for controlling electronic ballasts, thermo drives, etc, 4-channel, 1x temperature input for TC/TZ sensor.



SWITCHING ACTUATORS



Switching actuator 1-channel Switching actuator 2-channels Switching actuator 4-channels Switching actuator 6-channels Switching actuator 12-channels

Technical parameters	SA3-01B	SA3-02B	SA3-04M	SA3-06M	SA3-012M
Number of contacts	1x NO, 16 A	2x CO, 8 A	4x CO, 16 A	6x CO, 8 A	12x NO, 8 A
Switching current	16 A / AC1	8 A / AC1	16 A / AC1	8 A / AC1	8 A / AC1
Switching output	4000 VA	2000 VA	4000 VA / AC1, 384 W/DC	2000 VA / AC1, 192 W/DC	2000 VA
Supply voltage (frequency)	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	230 V AC (50-60Hz) 120 V AC (60 Hz)
Rated current from BUS	30 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)
Housing	BOX		3-MODULE		6-MODULE
Dimensions	49 x 49 x 21 mm		90 x 52 x 65 mm		90 x 105 x 65 mm
Order code	3235	3236	3238	3287	3246 3302

1-channel/2-channels switching actuator for switching appliances, e.g. lighting, thermo drives and sockets. 1x temperature input TC/TZ.

4-channel switching actuator for switching appliances & controlling blinds, 4x changeover contact 16A, LED signalling of relay status, manual control.

6-channel switching actuator for switching appliances, lighting and thermo drives, 6x changeover contact 8 A, LED signalling of relay status, manual control.

12-channel switching actuator for switching appliances, lighting and thermo drives, 12x switching contact 8 A, LED signalling of relay status, manual control.



SWITCHING ACTUATORS

SHUTTER ACTUATORS



Switching actuator, 22 channels Switching actuator, 22-channels without control and indication components Roller shutter (blind) actuator, 2-channels (1 controller) Roller shutter (blind) actuator, 18-channels (9 controllers)

Technical parameters	SA3-022M	EA3-022M	JA3-02B/DC	JA3-018M
Number of contacts	20x NO + 1x CO with blocking (for shutters)	20x NO + 1x CO with blocking (for shutters)	DC 1x 12-24 V	9x CO with blocking
Switching current	according to the output (6 A/10 A)	according to the output (6 A/10 A)	0.85 A	4 A/AC15
Switching output	according to the output	according to the output	-	1000 VA
Supply voltage (frequency)	27 V DC, -20/+10 %	BUS 27 V DC	BUS 27 V DC	100-250 V AC (50-60 Hz)
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)
Housing	6-MODULE	6-MODULE	BOX	6-MODULE
Dimensions	90 x 105 x 65 mm	90 x 105 x 65 mm	49 x 49 x 13 mm	90 x 105 x 65 mm
Order code	3526	3523	3271	7446

Actuator for controlling light circuits, appliances, thermo drives and 1 shutter (2 relays with blocking). Unit is equipped with 20x switching outputs and 1x changeover contact for controlling blinds or shutters.

Actuator for controlling light circuits, appliances, thermo drives and 1 shutter (2 relays with blocking). Unit is equipped with 20x switching outputs and 1x changeover contact for controlling blinds or shutters.

Actuator for controlling blinds, rollers, shutters and other motors powered by 24 V DC. Unit has 2x analog or 2x digital input.

Actuator designed for controlling rollers, shutters, blinds, awnings, garage door on entrance gates. This unit can control up to 9 motors.



DIMMING ACTUATORS



Dimming actuator for RGBW strips Dimming actuator 2-channels Dimming actuator 6-channels Dimming actuator for electronic ballasts 2-channels

Technical parameters	DA3-03M/RGBW	DA3-22M	DA3-66M	LBC3-02M
Output	LED strip 12 V, 24 V, 48 V; RGBW LED strip 12 V, 24 V, 48 V	load R - L - C - LED - ESL 2x 400 VA (230 V) / 200 VA (120 V)	load R - L - C - LED - ESL 150 VA (230 V) / 75 VA (120 V)	2x 0(1)-10 V 2x CO, 16 A
Input	-	2x wire buttons, 1x temperature	6x wire buttons	-
Supply voltage (frequency)	27 V DC, -20/+10 %	230 V AC (50-60 Hz) 120 V AC (60 Hz)	230 V AC (50 Hz) 120 V AC (60 Hz)	BUS 27 V DC
Rated current from BUS	5 mA (at 27 V DC)	5 mA (at 27 V DC)	100 mA (at 27 V DC)	60 mA (at 27 V DC)
Housing	3-MODULE	3-MODULE	6-MODULE	3-MODULE
Dimensions	90 x 52 x 65 mm	90 x 52 x 65 mm	90 x 105 x 65 mm	90 x 52 x 65 mm
Order code	8463	3262 3303	8206 7445	3268

The dimmer for LED strips is used for independent control of 12 channels, so it can be connected to, for example: 3 RGBW led strips, 3 RGB led strips + 2 single colour strips, 12 single colour LED strips

2-channel actuator for dimming ESL, LED and RLC loads, 2x 400 VA, 2x input for wired button, 1x input for temperature sensor TC/TZ.

Output power 150 VA / channel. The outputs can be connected in parallel and multiply the power at the expense of the number of outputs (up to 900 VA) when all 6 inputs for wired buttons.

Analog 2-channel actuator for dimming electronic ballasts. This unit has 2x analog output 0(1)-10 V, 2x changeover contacts 16 A, LED signalization of relay status.



INPUT UNITS



Binary input unit 4-channels Binary input unit 8-channels Binary input unit 14-channels Temperature input 4-channels Temperature input 6-channels

Technical parameters	IM3-40B	IM3-80B	IM3-140M	TI3-40B	TI3-60M
Number of inputs	4x binary	8x binary	14x binary	4x temperature	6x temperature
Temperature sensors	1x TC/TZ		-	TC, TZ, Ni1000, Pt1000, Pt100	TC, TZ, Ni1000, Pt1000, Pt100
Supply voltage	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)		25 mA (at 27 V DC)	20 mA (at 27 V DC)	45 mA (at 27 V DC)
Housing	BOX		3-MODULE	BOX	3-MODULE
Dimensions	49 x 49 x 13 mm		90 x 52 x 65 mm	49 x 49 x 13 mm	90 x 52 x 65 mm
Order code	3231	3232	3245	3269	3289

This unit is designed for connection of 4 or 8 devices with potential-free contacts (PIR, button, etc.), 1x temperature input for TC/TZ sensor, output for powering detectors by 12 V DC/75 mA.

This input module connects up to 14 devices with potential-free contact (PIR, button etc.). 14x binary input, output for powering detectors by 12V DC/150 mA.

Temperature input unit TI3-40B is designed for connecting 4x temperature sensors TC, TZ, Ni1000, PT1000 or PT100.

Temperature input unit TI3-60M is designed for connecting 6x temperature sensors TC, TZ, Ni1000, PT1000 or PT100.





Room controller with DALI dimmer



Combined actuator 10 inputs, 8 outputs



Fan coil control actuator

Technical parameters	RC3-610M/DALI	IOU3-108M	FA3-612M
Output	8x NO contacts (10 A), 2x analog (0-10 V), 16 DALI address, DIN-4	8x switching, 10 A	4x (0)-10V, 4x switching, 4x SSR
Input	6x digital (NO/NC)	1x temperature, 8x digital	3x analog, 3x digital
Supply voltage	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	110 mA (at 27 V DC)	110 mA (at 27 V DC)	5 mA (at 27 V DC)
Housing	6-MODULE	6-MODULE	6-MODULE
Dimensions	90 x 105 x 65 mm	90 x 105 x 65 mm	90 x 105 x 65 mm
Order code	8466	8188	3257

The unit is designed to control hotel rooms. The unit is equipped with 6 binary inputs, of which 2 can be configured as temperature inputs and 8 independent relays with switch contacts. It also includes two analog outputs and a DALI bus for controlling up to 16 DALI ballasts.

Actuator can switch the appliances, light circuits, thermodrives, etc., possibility of connecting wired buttons and temperature sensors. Outputs supports zero-crossing mode.

Actuator is designed to control fan coil units using analog/digital inputs and analog/relay outputs. The unit has 3 analog inputs and 3 galvanically separated digital inputs.



WALL SWITCH CONTROLLERS



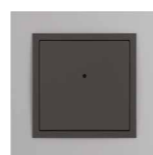
Wall switch button 2 buttons



Wall switch button 4 buttons



Digital room thermo-regulator



Wall card reader 2 buttons

Technical parameters	WSB3-20, WSB3-20H	WSB3-40, WSB3-40H	IDRT3-1	WMR3-21
Number of buttons	2	4	2 (for temperature correction)	2
Supply voltage	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	25 mA (at 27 V DC)	25 mA (at 27 V DC)	20 mA (at 27 V DC)	50 mA (at 27 V DC)
Internal temp. sensor	yes	yes	yes	-
Inputs	2x temperature or 2x digital	2x temperature or 2x digital	2x temperature or 2x digital	-
Dimensions plastic	85.6 x 85.6 x 42 mm	85.6 x 85.6 x 42 mm	85.6 x 85.6 x 42 mm	85.6 x 85.6 x 42 mm
Dimensions other materials	94 x 94 x 36 mm	94 x 94 x 36 mm	94 x 94 x 50 mm	94 x 94 x 36 mm
Order code - electronics*	20: 3234* 20H: 3247*	40: 3233* 40H: 3304*	device + cover: IDRT3-1/BR**	3275*

* Covers and frames for the devices must be ordered separately
** Frame must be ordered separately.

Wall controllers, 2x button, built-in temperature and humidity sensor (version H), 1x LED indication. In LOGUS³⁰ design.

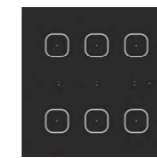
Wall controllers, 4x button, built-in temperature and humidity sensor (version H), 2x LED indication. In LOGUS³⁰ design.

Control unit for heating/cooling. Temperature correction ±5 °C or direct input of requested temperature. Built-in temperature sensor. In LOGUS³⁰ design.

Wall reader with RFID can read chip cards, key fobs and control the entrance. Available in black and white color in Logus³⁰ design.



Order code of all color combinations are available in the price list.



Glass wall card reader 6 buttons



4 buttons



Glass switch button controllers (SHARP edges) 6 buttons



9 buttons

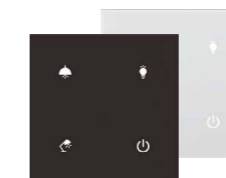
Technical parameters	GMR3-61	GSB3-40	GSB3-60	GSB3-90
Number of buttons	6	4	6	9
Supply voltage	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	50 mA (at 27 V DC)	25-40 mA (at 27 V DC)		
Internal temp. sensor	yes	yes	yes	yes
Inputs	-	1x temperature or 1x digital		
Dimensions	94 x 94 x 36 mm			
Order code	61/B: 5585 61/W: 5579	40/B: 8879 40/W: 8880	60/B: 8877 60/W: 8878	90/B: 8827 90/W: 8828

Glass wall reader with RFID and buttons can read chip cards, key fobs and control the entrance. Available in black and white color in Logus³⁰ design.

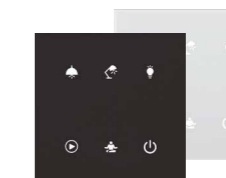
Glass touch controllers with symbols GSB3-40, GSB3-60 and GSB3-90 are part of a comprehensive range of glass iNELS control units with four, six and nine touch buttons whose functions can easily modify by the software. The glass touch controllers is equipped with an integrated temperature sensor. It is also equipped with analog-to-digital input (AIN/DIN), which can be used to connect potential-free contact or external temperature sensor TC/TZ. Available in elegant black (GSB3-40/B, GSB3-60/B, GSB3-90/B) and white (GSB3-40/W, GSB3-60/W, GSB3-90/W) versions. The individual capacitive buttons are point-illuminated by a white LED indicating the status of the controlled output.



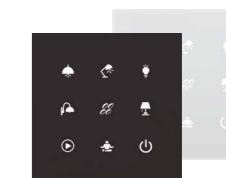
GLASS TOUCH CONTROLLERS WITH SYMBOLS



Glass switch button with symbols 4 buttons



Glass switch button with symbols 6 buttons



Glass switch panel 9 buttons

Technical parameters	GSB3-40/S	GSB3-60/S	GSB3-90/S
Number of buttons	4	6	9
Supply voltage	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	27-35 mA (at 27 V DC)	27-35 mA (at 27 V DC)	25-50 mA (at 27 V DC)
Inputs	1 x external temperature for TC/TZ or 1 x digital input	1 x external temperature for TC/TZ or 1 x digital input	1 x external temperature for TC/TZ or 1 x digital input
Dimensions	94 x 94 x 36 mm		
Order code	40/SB: 5623 40/SW: 5624 40/SBP: 8888 40/SWP: 8889	60/SB: 8875 60/SW: 8871 60/SBP: 8886 60/SWP: 8887	90/SB: 8825 90/SBP: 8884 90/SW: 8826 90/SWP: 8885

Glass touch controllers with symbols GSB3-40/SP, GSB3-60/SP and GSB3-90/SP are part of a comprehensive range of glass iNELS control units with four, six and nine touch buttons whose functions can easily modify by the software. Engraving of symbols on each button are possible upon a request. The glass touch controllers is equipped with an integrated temperature sensor. It is also equipped with analog-to-digital input (AIN/DIN), which can be used to connect potential-free contact or external temperature sensor TC/TZ. Available in elegant black (GSB3-40/B, GSB3-60/B, GSB3-90/B) and white (GSB3-40/W, GSB3-60/W, GSB3-90/W) versions. In addition to all the features in symbol models, The glass touch controllers are also coming in proximity variant. In the SBP/SWP version, controllers are equipped with a proximity sensor, which can light up the symbols by approaching the unit to approx. 0.25 m. Based on information from the ambient light intensity sensor it can switch back light of symbols or perform various actions in the iDM3 software.





Hotel control unit with touch screen



Glass room thermo-regulator



Control unit with touch screen

Technical parameters	EHT3	GRT3-50	EST3
Number of buttons	touch screen	7	2x2 / 2x3 / 3x3 / 3x4
Supply voltage	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)	150 mA (at 27 V DC)
Measurement	-	internal thermometer and humidity sensor, 1x external input for TC/TZ or 1x digital	-
Dimensions	94 x 94 x 36 mm	94 x 94 x 36 mm	94 x 94 x 36 mm
Order code	available in the price list	50/B: 5630 50/W: 5634	in the pricelist

The control unit with touch screen EHT3 is a suitable control element for iNELS3 in places where it is required to control multiple devices. The unit replaces multiple controllers and reduces the number of switches on the wall. In LOGUS⁹⁰ design.



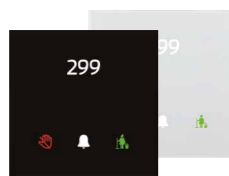
Glass room thermo-regulator GRT3-50 is part of a comprehensive range of glass iNELS3 control units for guest room management system (GRMS) and serves to regulate the temperature in the room. Thermo-regulator is also equipped with 3 symbols for controlling fancoil speed.



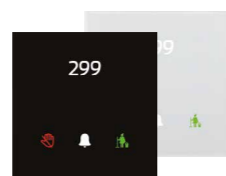
EST3 is equipped with a 3.5" color touch screen. On the screen you can have 2x2, 2x3, 3x3 or 3x4 buttons for controlling anything. In Logus90 design.



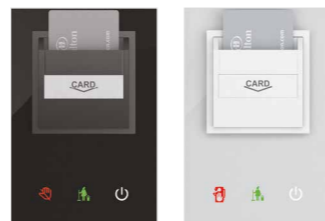
HOTEL UNITS - GRMS



Glass card reader



Glass door bell



Glass card holder

Technical parameters	GCR3-11	GDB3-10	GCH3-31
Number of buttons	3	1	3
Supply voltage	BUS 27 V DC	BUS 27 V DC	BUS 27 V DC
Rated current from BUS	100-130 mA (at 27 V DC)	100-130 mA (at 27 V DC)	100-120 mA (at 27 V DC)
Inputs	internal temperature and brigtness sensor	internal temperature sensor, 1x external input for TC/TZ	brightness sensor
Dimensions	94 x 94 x 36 mm	94 x 94 x 36 mm	142 x 94 x 36 mm
Order code	11/B: 5747 11/W: 5748	10/B: 5726 10/W: 5727	31/B: 5627 31/W: 3494

Glass card reader GCR3-11 is designed for reading smart cards, which are intended to enter the hotel room or any other part of the building. The GCR3-11 unit is a design component of the iNELS system and 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 iNELS3 control units for guest room management system (GRMS), and is used to indicate the requested status of guest room - "Do Not Disturb" and "Make Up Room". It is available in elegant black (GCR3-11/B) and white (GCR3-11/W) variants.



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.



Glass bedside panel - right and left



Technical parameters	GBP3-60R	GBP3-60L
Number of buttons	6	
Supply voltage	BUS 27 V DC	
Rated current from BUS	25-50 mA (at 27 V DC)	
Measurement	1x external input for TC/TZ or 1x digital, brightness sensor	

Order code: 5728

Order code: 3533

GBP3-60 is available in several designs and is very flexible and efficient solution for a wide range of projects.

The following variants are available:

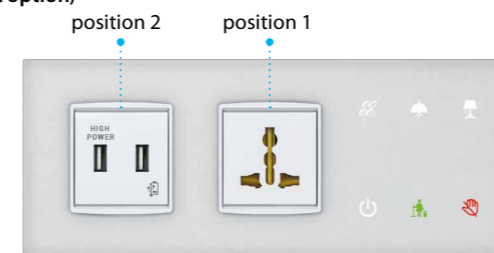
- Left / right design providing the same comfort of control from both sides of the bed.
 - Accessories like power sockets, network sockets, HDMI or USB can be easily added in the bedside panel by changing the VIMAR modules.
 - Black / white elegant design suitable for almost any interior.
- GBP3-60 can be equipped with a number of modules, eg:
- AC power sockets: UNI, Schuko, French, British.
 - other types of modules: 2xUSB, USB, LAN, HDMI



GBP3 variants

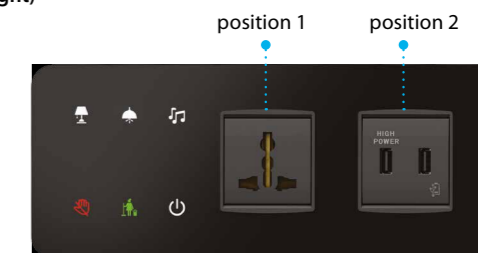
Configure bedside panel according to your request.

L (left option)



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

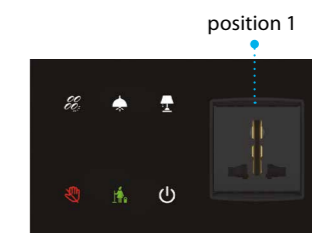
R (right)



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

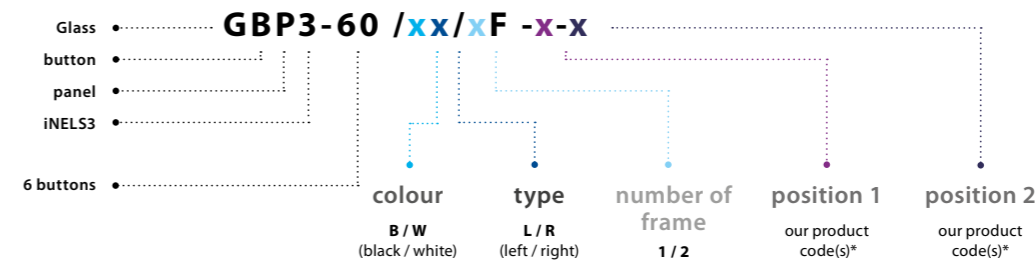


GBP3-60/WL/1F-21W45W



GBP3-60/BR/1F-26B

Part number















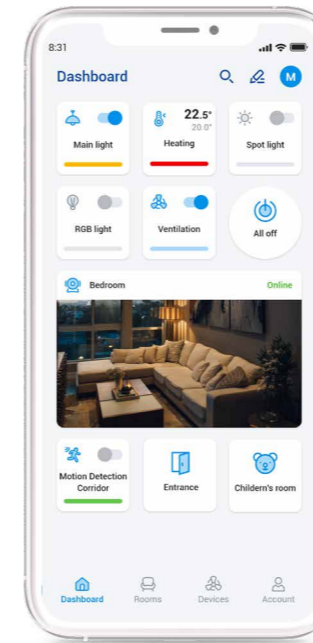
* In case of 1-MODULE choice it is necessary to pick 2x 1-module to fill up the 1 position, for example GBP3-60/WL-21W45W.

The application allows you to easily control connected devices in Wireless and BUS gateways such as socket switching, dimming of lights, control of blinds or garage doors, control of heating circuits and compatible air conditioning. Of course, the display of available values, such as temperature, the status of a motion, window, door or flood detectors, or the current status of all controlled devices.

It now brings a clear Dashboard, on which it is possible to display the most used devices, previews of connected cameras or created scenes. With one click, you can control several devices at once. It is also now possible to integrate sip enabled Intercoms and you will get call notification and unlock the door from anywhere in the world. As a new feature you will get notifications on event of units connected to the account. Enter a whole new stage with the new iNELS mobile application, expanding the functions and integration options of the iNELS 2023 system.

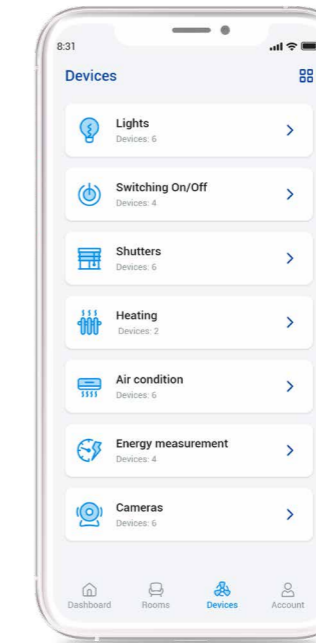
Electroinstallation

		Lighting control	•
		Garage doors and gates	•
		Switching appliances	•
		RGB bulbs and LED strips	•
		Scenes	•
		Detectors/sensors	•
		Heating	•
		Air conditioning	•
		Recuperation	•
		Cameras	•
		Weather station	•
		Intercoms	•
		Home appliances	•
		Google Home	•
		Amazon Alexa	•
		Automation	•
		Notification	•
		Favourites/overview	•
		Log history	•
		Weather data	•
		Users management	•



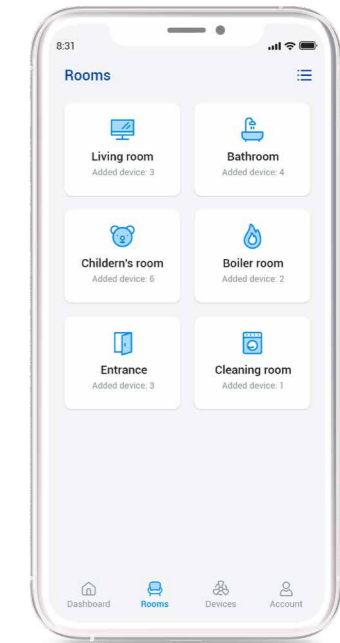
Dashboard

Absolute control over the state of all technologies.



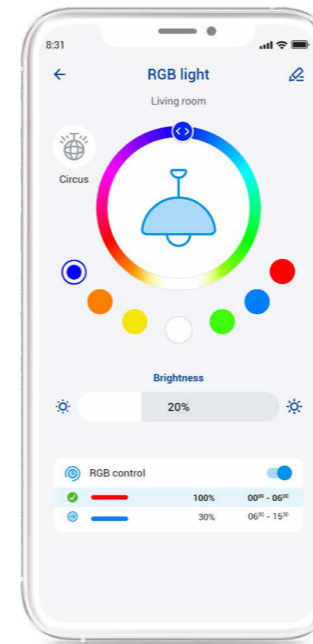
Device list

Control the device from anywhere.



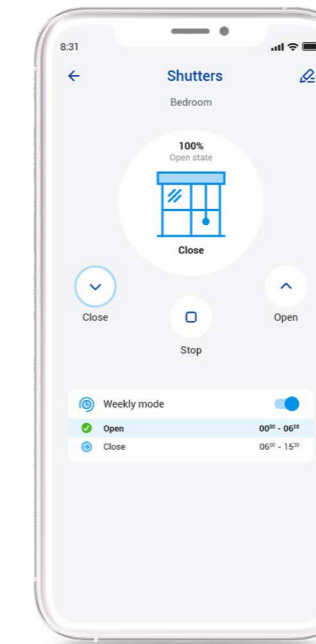
Rooms management

Settings according to individual rooms.



Colour setting

Easy adjustment of the light scene with one touch - switching, dimming, colour.



Shutters/Blinds

Possibility of individual or joint control of shading technology.



Temperature

You can set the temperature in each room exactly as you like.



LOGUS⁹⁰

Luxurious design for any interior

LOGUS⁹⁰

SWITCHES AND SOCKETS

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.

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.

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.

BASE

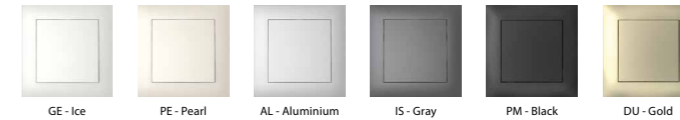
Smart finish. Discrete shape of function.



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/Cerna UG - Gold/Ice UU - Gold/Gold

CRYSTAL

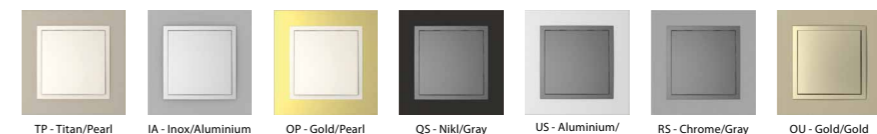
Brightness and clarity. Shades that bring the shine of crystals into a honed experience.



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 refinement 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

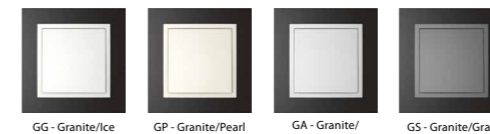
Selection of natural materials. Warm shades of wood with their varying structures create a room full of happiness and sincere comfort.



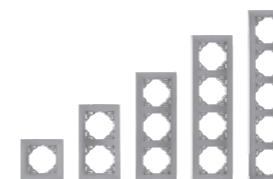
FP - Beech Wood/Pearl JP - Cherry Tree/Pearl MS - Mahogany/Gray NA - Walnut Tree/Aluminium

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



UNITS OF THE iNELS SYSTEM IN LOGUS[®] DESIGN

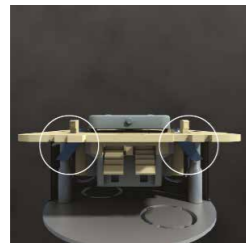


DEVICES OVERVIEW

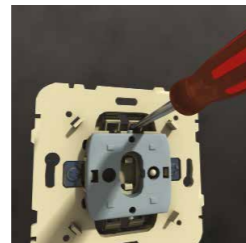
- switches
- switches with lock
- time switches
- over-switches
- rotary switches
- dimming switches
- two-pole switch
- pushbuttons
- switch, pulling switch
- orientation lighting
- shutters controllers
- shutters controllers with IR sensor
- digital time switch motion detectors
- card switch
- standard 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

ADVANTAGES MECHANISMS

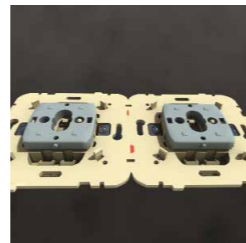
Mechanism are made of special alloy of non-flammable plastics that prevent in destruction or damage of device body thanks to their strenght and elasticity. The plastic design of the mechanism simultaneously ensures safe insulation from conductive parts of installation. The mounting frame is an integral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



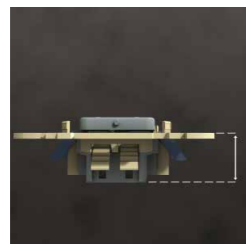
Quick Clips allow installation to adjust the frame on an uneven wall (two positions for the "snap" frame). Inequality walls will allow the deal and floating fingerboard.



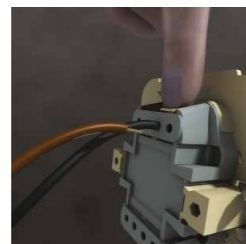
Ability to test electrical functionality of your device without disassembly.



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



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

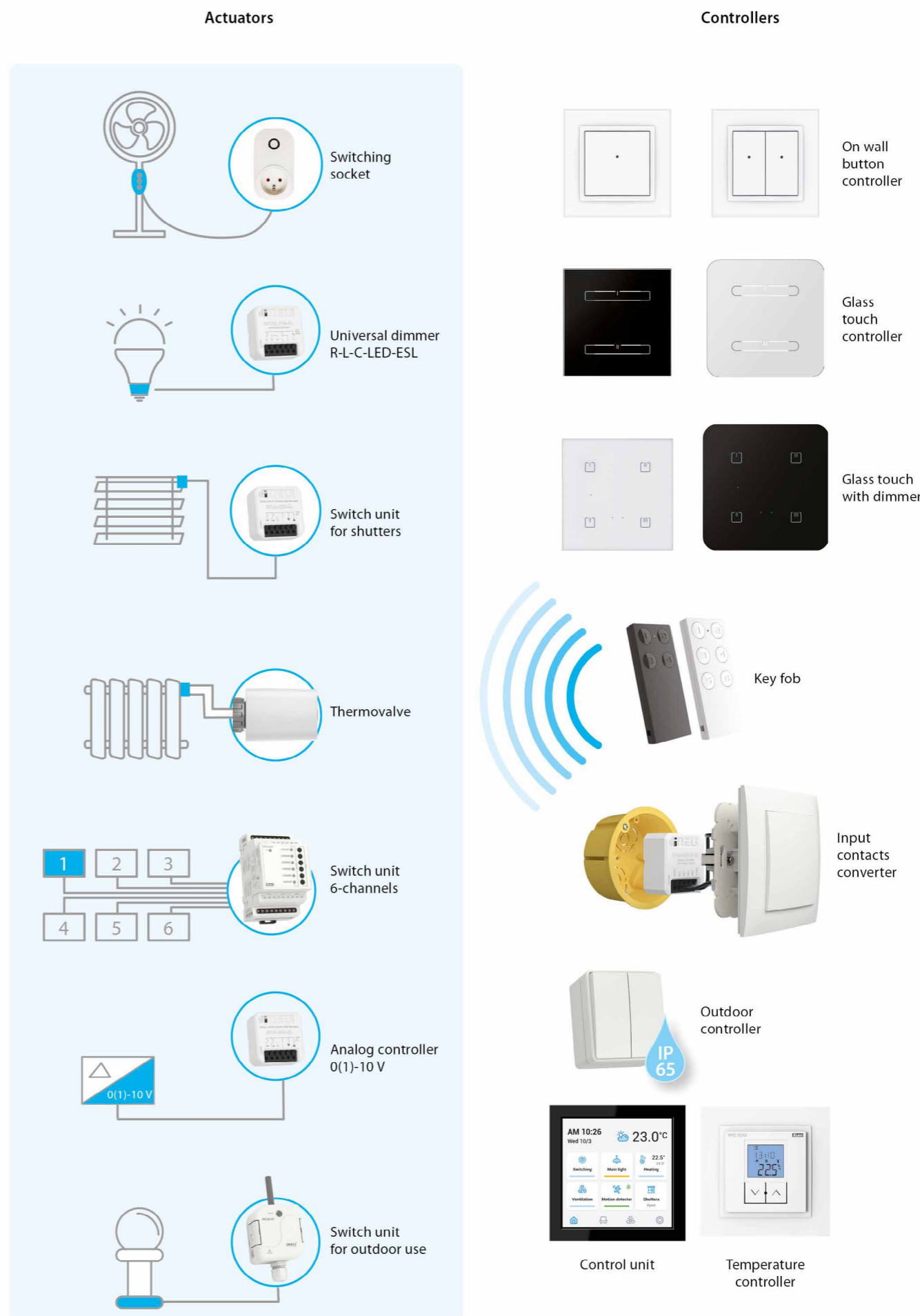
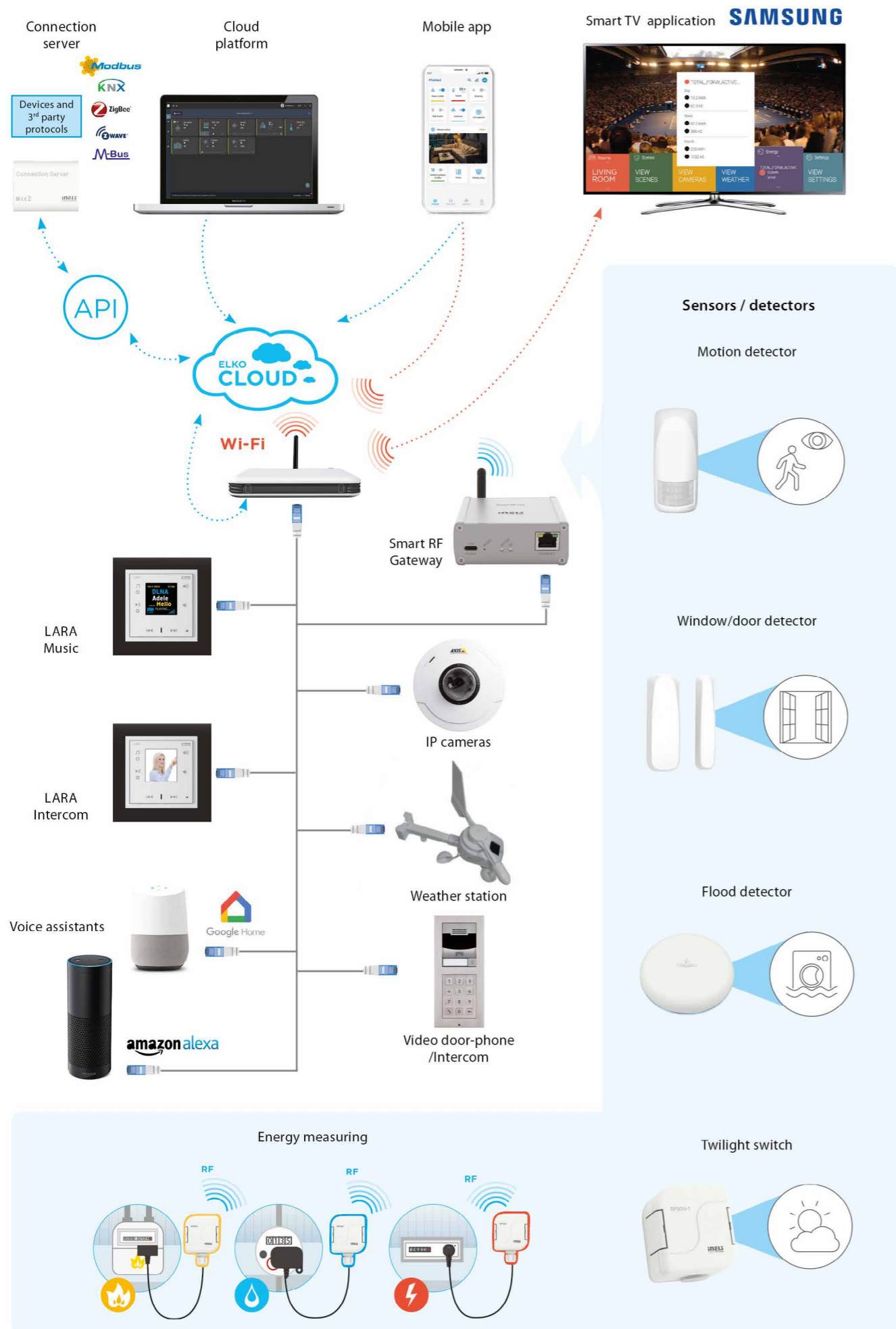


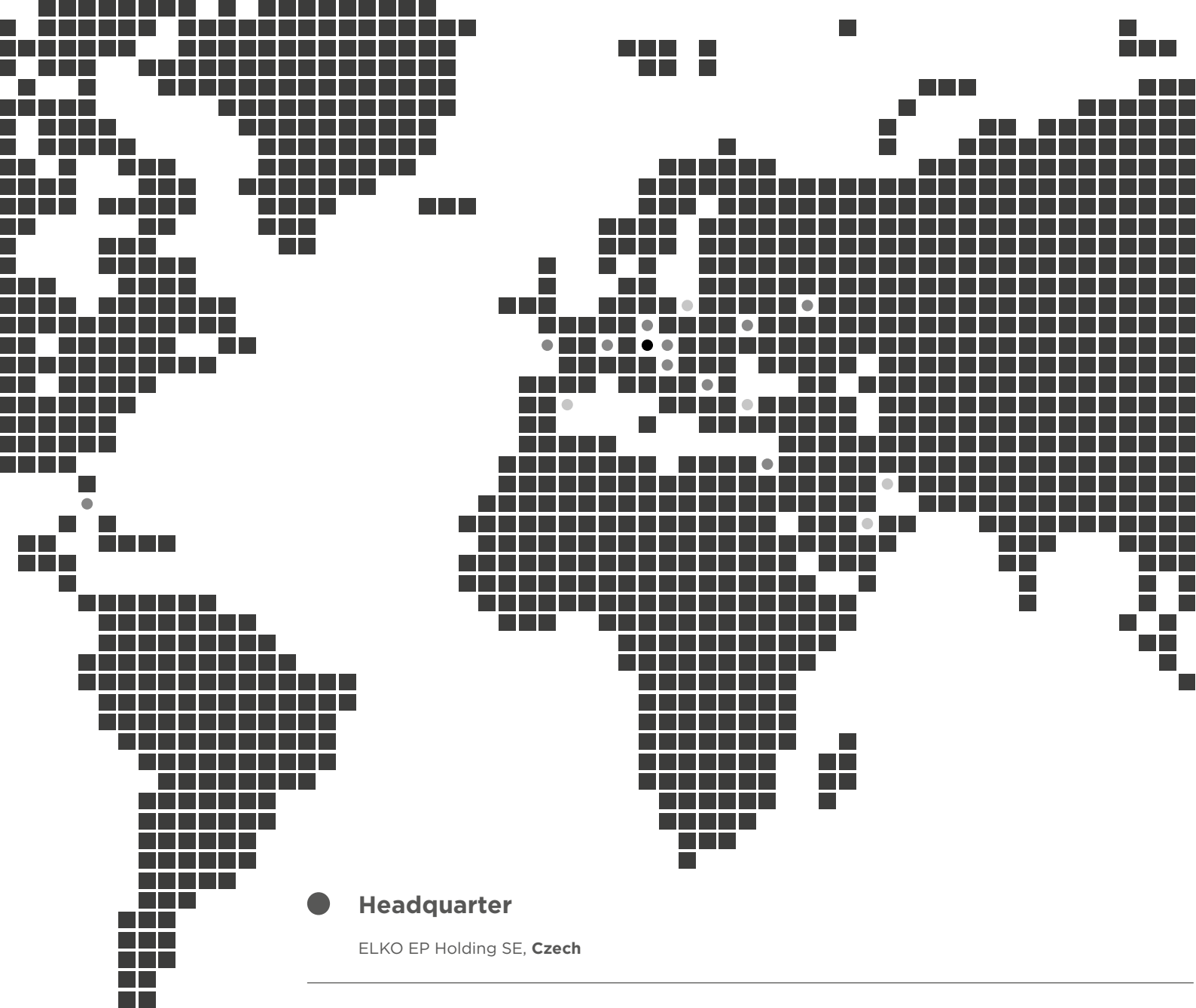
Screwless terminals provide fast and quality connection without need of instrument usage. Double terminals on every pole provide multiple connection without need of extra terminals usage.



Ability to test electrical functionality of your device without disassembly.

	Order code	Box (Un)		Order code	Colour	Box (Un)
	21033	1		90733 T	BR MF GE PE AL IS PM DU	1
	21040	1		90745 T	BR MF GE PE AL IS PM DU	1
	21403	10		90403 T	BR MF GE PE AL IS PM DU	1
	21404	10				
	21234	1		90746 T	BR MF GE PE AL IS PM DU	1
	21218	1		90747 T	BR MF GE PE AL IS PM DU	1
	21388	10		90782 T	BR MF GE PE AL IS PM DU	20 2
	21389	10				
	21384	1		90673 T	BR MF GE PE AL IS DU PM	1





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