



Reasons why to choose relays ELKO EP



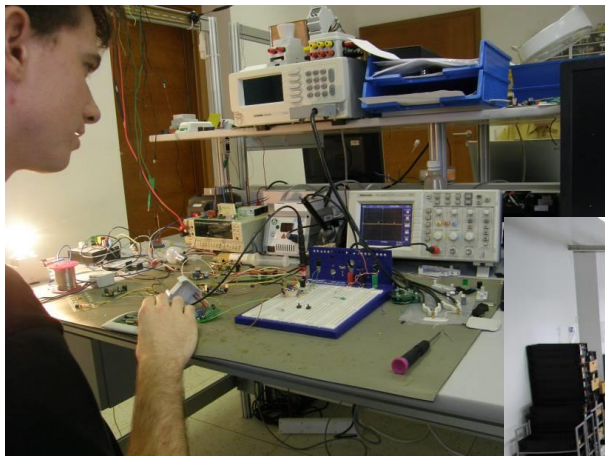
www.elkoep.cz

Company presentation



Development & Production

We have our own R&D center, licence and production. We know our direction and goals. We listen your requests for further development, we produce bespoke relays. Our experiences with manufacturing lasts over 23 years and we export our products to more than 60 countries.

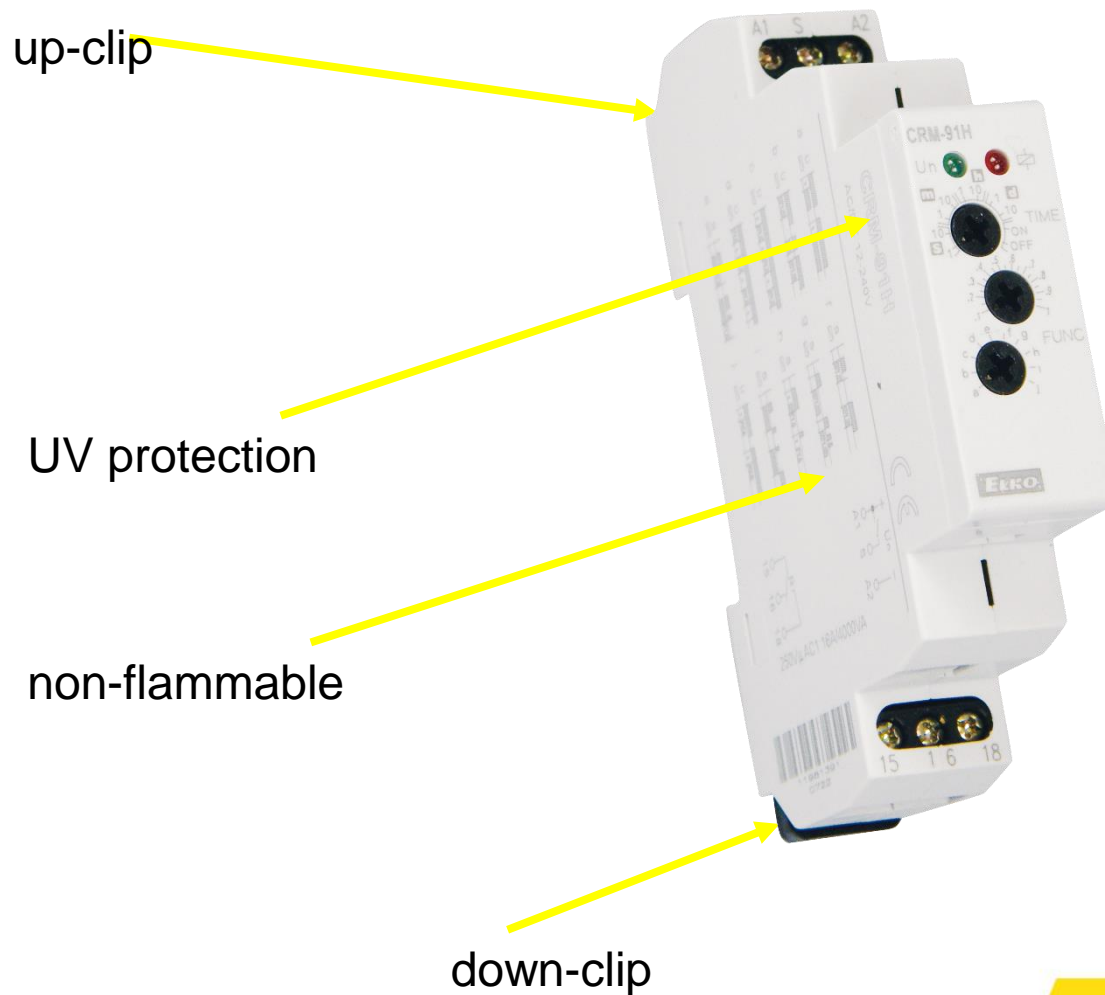


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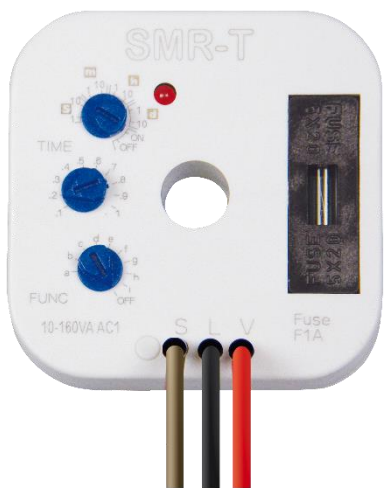


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Box & mounting



Design



Box



Din



Plug



Digital

Inside power part



ELKO EP

Source with electronic switching at zero = reliable operation in a wider range of switching power supply. The high-quality capacitors designed for serial supply.



Cheap competitor

Simple capacitor supply, where used type of capacitor is not recommended for serial supply.

PCB



ELKO EP

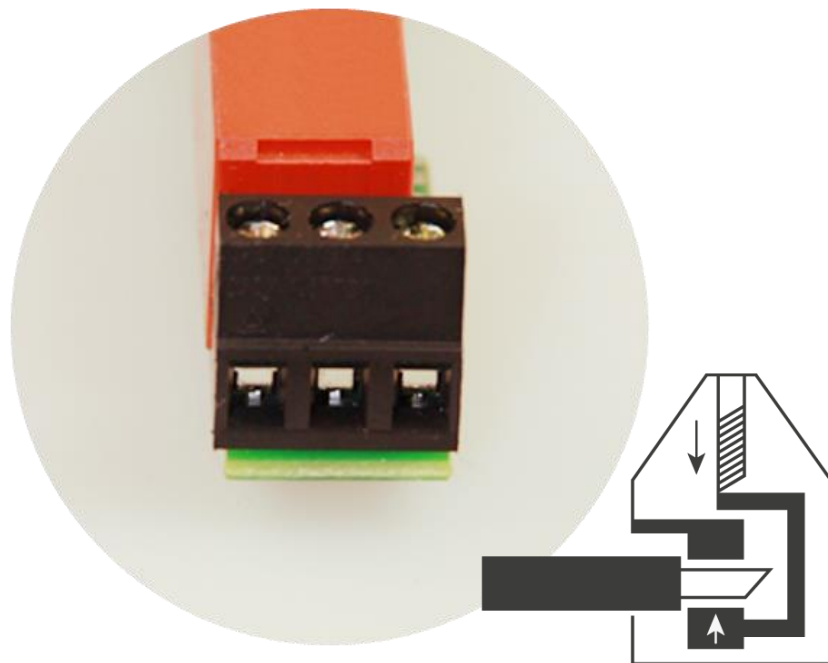
Quality coating increases the reliability and durability of products.



Cheap competitor

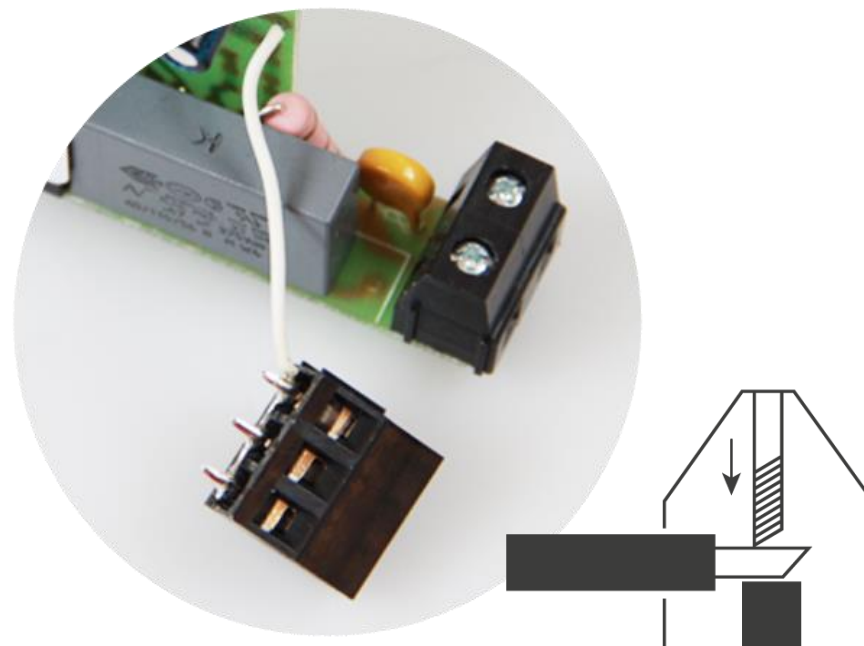
(Not) good quality of counting can in case of humidity damage devices.

Terminals



ELKO EP

Terminals are located direct on PCB.
Lift system: secure holding of wires.



Cheap competitor

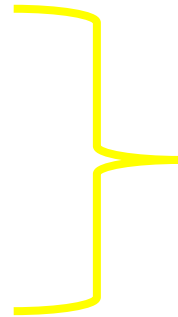
Classical holding of wires. The possibility of disconnecting the wire.

Output contact

1x 16 A

or

3x 16 A



in one module

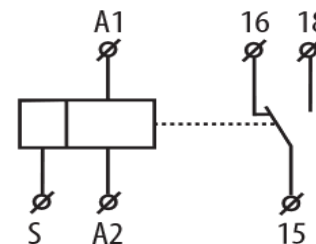
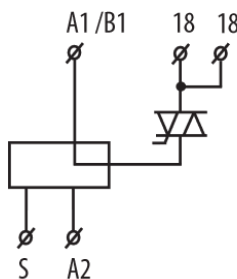


Material of contacts

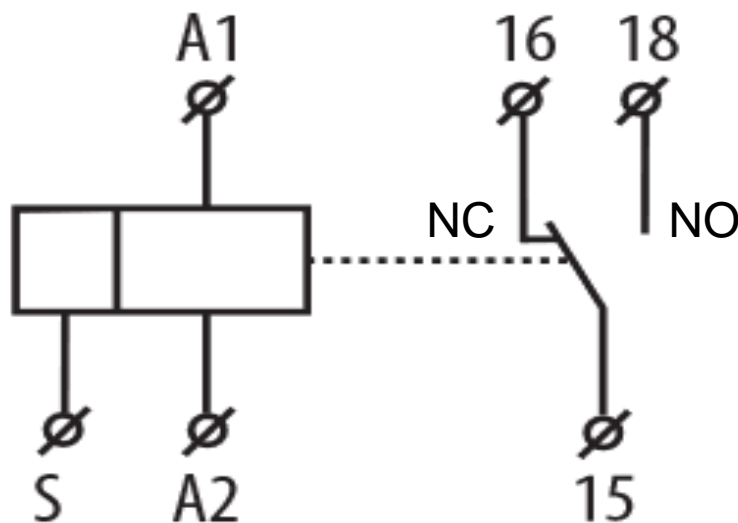
AgNi – designed for switching resistive loads, it switches well and transmits (does not oxidize) low currents/voltage, not designed for surges and loads with a portion of an inductive component.

AgSnO – appropriate for switching loads with a portion of an inductive component, it poorly switches low currents/voltage, it is more resistant to surges, appropriate for switching DC voltage, less appropriate for switching loads of an ohmic nature.

Triak – noise-less switching



Change-over contacts in 90% of relays



Advantage: - from this contact you can make anytime normally open (NO) or normally close (NC)

Product load (relays contacts) – by type

RELAY CONTACT 16 A	LOADS					LOADS			
						AC1	AC3	AC15	DC1 (24/110/220 V)
AgSnO ₂	2000 W	1000 W	1000 W	750 W	500 W	4000 VA	0.9 kW	750 VA	16 A/0.5 A/0.35 A

RELAY CONTACT 16 A	LOADS					LOADS			
						AC1	AC3	AC15	DC1 (24/110/220 V)
AgNi	1000 W	x	x	x	x	4000 VA	0.9 kW	750 VA	16 A/0.5 A/0.35 A

RELAY CONTACT 8 A	LOADS					LOADS			
						AC1	AC3	AC15	DC1 (24/110/220 V)
AgNi	500 W	x	x	x	x	2000 VA	x	375 VA	8 A/0.4 A/0.25 A

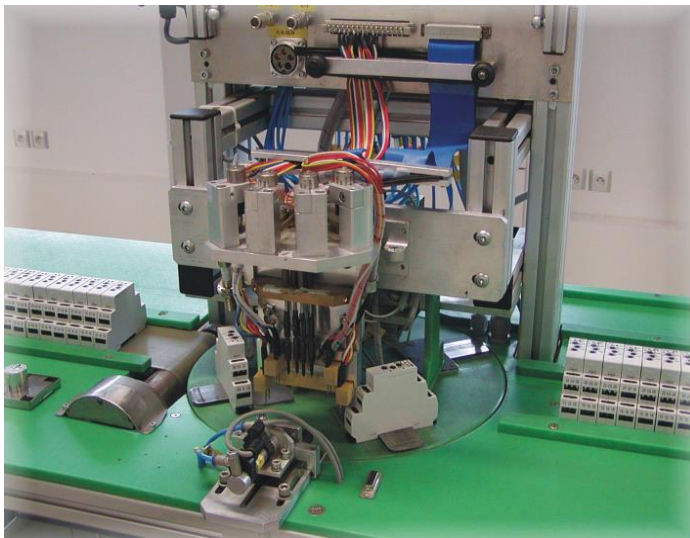
RELAY CONTACT	MIN LOAD	
	mW	V / mA
AgSnO ₂	1000	10/100

RELAY CONTACT	MIN LOAD	
	mW	V / mA
AgNi	300	5/10

Double vendor inspection

We are purchasing components only from well-known and proofed suppliers. Prior dispatchment, our products are tested twice during the final check-out:

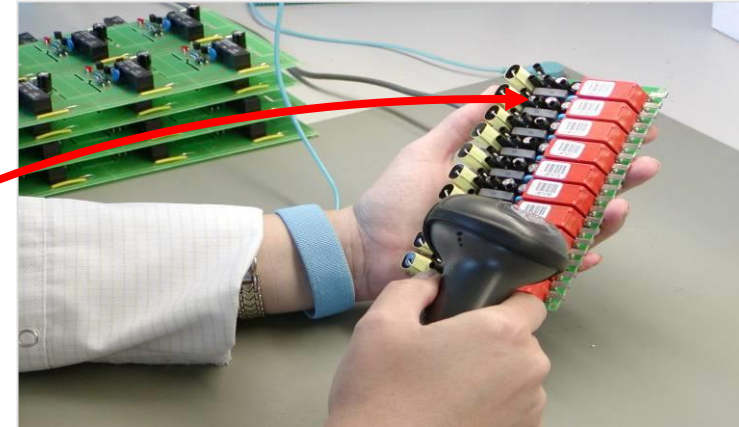
1x automatic tester



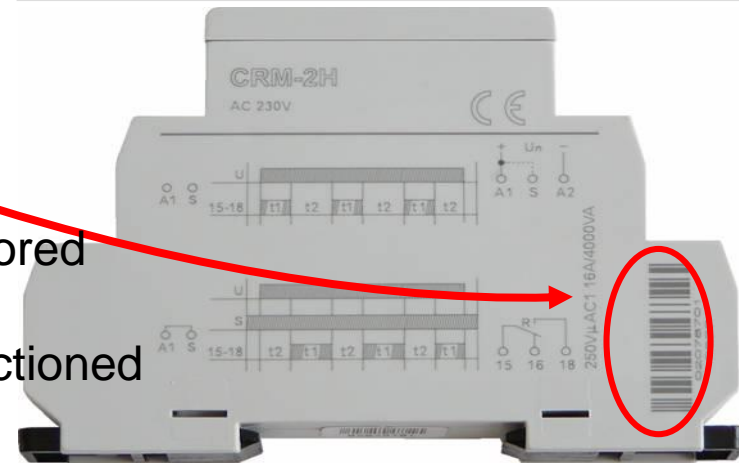
2x manually



Follow serial number

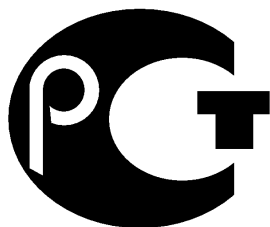


00239500451020



- whole manufacturing process of each unit is monitored and controlled through its EAN code
- easy searching for faulty series or malfunctioned component from supplier, etc.
- each product has unique marking number – easy tracking of product history (backwards up to its ordering)
- unquestionable product identification in claim issues

Certification & warranty





Our partners

SIEMENS

EATON

Schneider Electric

hager

Projection support



<http://www.elkoep.com/support/planner-support/database-for-sw-projection/>



Technical support

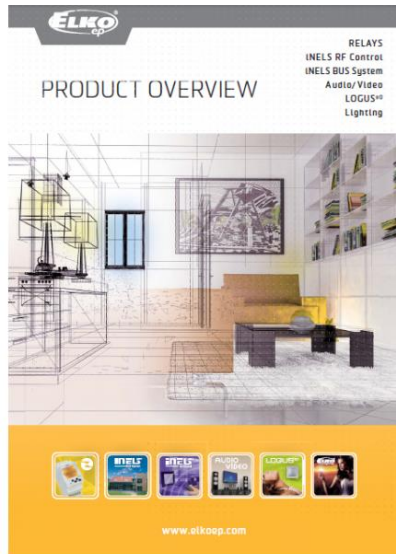
Our sales representatives is always at your disposal to help you business and technical questions. Anytime will help you to choose a correct relay.

We will be pleased to advise you also at:

HOT-LINE 00420-800-100-671



Marketing



<http://www.elkoep.com/downloads/promotion materials/product overview en web.pdf>



<http://www.elkoep.cz/downloads/promotion materials/rele A 1 web.pdf>



<http://www.elkoep.com/downloads/promotion materials/Relay.pdf>

Here you can buy: <http://eshop.elkoep.com/>

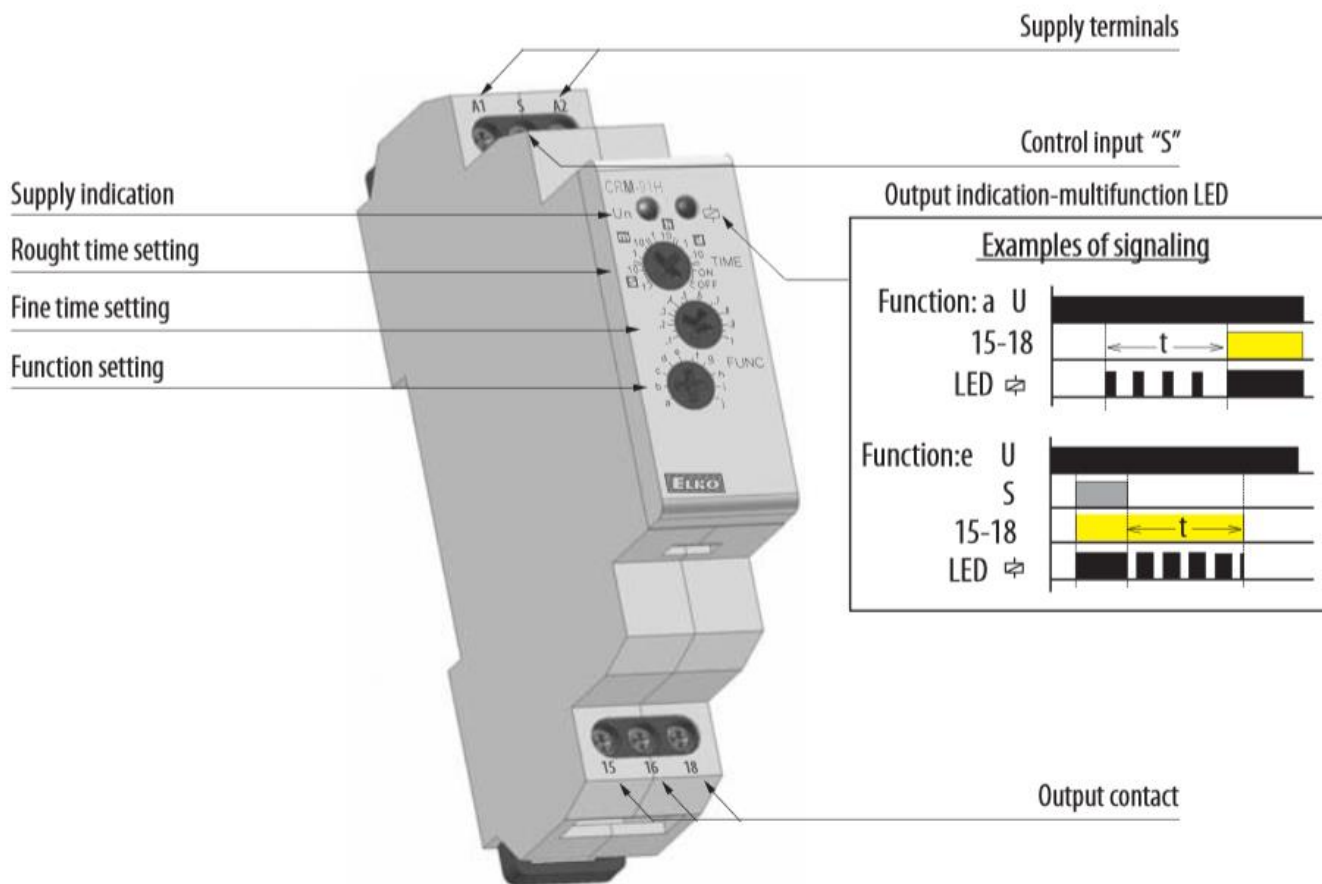


Relay overview

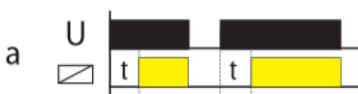
- Time relays
- Installation contactors
- Latching (memory) relays
- Auxiliary relays
- Staircase switches
- Time switch clock
- Twilight switches
- Dimmers
- Thermostats
- Level switches
- Power supplies
- Control and signal devices
- Monitoring voltage relays
- Monitoring current relays
- Power factor monitoring
- Thermo regulatory

Top product

multifunction time relay CRM-91H



On Delay (Power On)
When the input voltage U is applied, timing delay t begins. Relay contacts R change state after time delay is complete. Contacts R return to their shelf state when input voltage U is removed. Trigger switch is not used in this function.



Off Delay
When input voltage U is applied, relay contacts R change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage U is removed, contacts will also return to their shelf state. Trigger switch is not used in this function.



Repeat Cycle (Starting Off)
When input voltage U is applied, time delay t begins. When time delay t is complete, relay contacts R change state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.



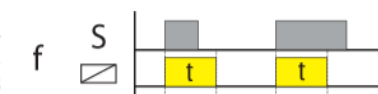
Repeat Cycle (Starting On)
When input voltage U is applied, relay contacts R change state immediately and time delay t begins. When time delay t is complete, contacts return to their shelf state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.



Off Delay (S Break)
Input voltage U must be applied continuously. When trigger switch S is closed, relay contacts R change state. When trigger switch S is opened, delay t begins. When delay t is complete, contacts R return to their shelf state. If trigger switch S is closed before time delay t is complete, then time is reset. When trigger switch S is opened, the delay begins again, and relay contacts R remain in their energized state. If input voltage U is removed, relay contacts R return to their shelf state.



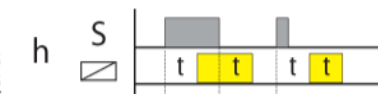
Single Shot
Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. During time-out, the trigger signal S is ignored. The relay resets by applying the trigger switch S when the relay is not energized.



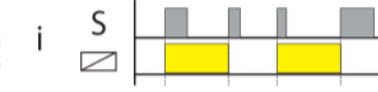
Single Shot Trailing Edge (Non-Retriggerable)
Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. At the end of the preset time t, the relay contacts R return to their normal condition unless the trigger switch S is opened and closed prior to time out t (before preset time elapses). Continuous cycling of the trigger switch S at a rate faster than the preset time will cause the relay contacts R to remain closed. If input voltage U is removed, relay contacts R return to their shelf state.



On/Off Delay
Input voltage U must be applied continuously. When trigger switch S is closed, time delay t begins. When time delay t is complete, relay contacts R change state and remain transferred until trigger switch S is opened. If input voltage U is removed, relay contacts R return to their shelf state.



Latching relay
Input voltage U must be applied continuously. Output changes state with every trigger switch S closure. If input voltage U is removed, relay contacts R return to their shelf state.



Pulse generator
Upon application of input voltage U, a single output pulse of 0.5 seconds is delivered to relay after time delay t. Power must be removed and reapplied to repeat pulse. Trigger switch is not used in this function.



puls=0.5s

10 functions: - 5 time functions controlled by supply voltage
- 4 time functions controlled by control input
- 1 function of latching relay

Power supply & time range

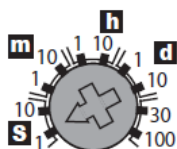


230V AC / 50Hz

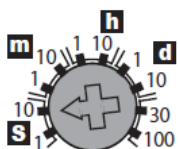
UNI 12-240V AC/DC / 50/60Hz

Time ranges:

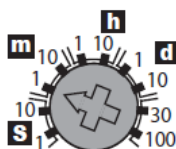
1s	10s	1min	10min	1h	10h	1day	10days	30 days	100 days
0,1-1s	1-10s	0,1-1min	1-10min	0,1-1h	1-10h	0,1-1day	1-10days	3-30days	10-100days



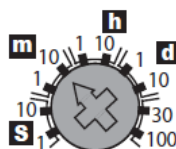
0.1 - 1 s



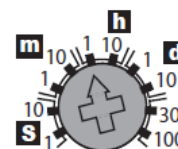
1 - 10 s



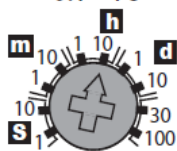
0.1 - 1 min



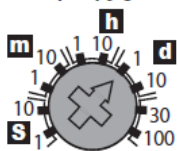
1 - 10 min



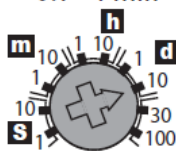
0.1 - 1 h



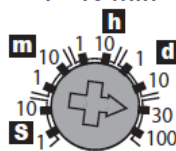
1 - 10 hrs



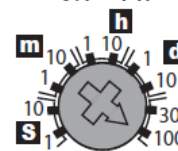
0.1 - 1 day



1 - 10 days



3 - 30 days



10 - 100 days



TOP products...

Staircase switch – CRM-4

- Used for delayed switching of lights in the corridors, entrances, stairways, halls or for delayed finish (OFF) of fans (WC, bathrooms,...)
- Operating system switch:
 - AUTO – normal function according to the set time
 - OFF – permanently OFF (e.g. when changing bulbs)
 - ON – permanently ON (e.g. while cleaning, servicing)
 - Time range: 0.5 – 10 min, time setting by potentiometer



Programmable staircase switch with signaling before switch off – **CRM-42**

- Intelligent staircase switch, the same use as CRM-4, but with enlarged possibility of control in mode „PROG“, it is possible to select time of delayed OFF number of button pressing
- Warning flashes 40s and 30s before switch off output
- Operating system switch:
 - ON – output is constantly ON (service mode)
 - AUTO – functions according to set time 30s – 10min
 - PROG – timing with time prolongation option by number button pressing



Digital time switch clock - **SHT-1/2**

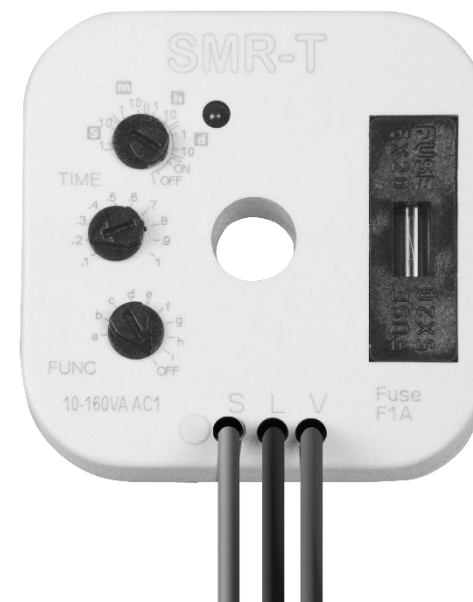
- Control appliances depending on real time, automatic control, switching lights, time-controlled el. heating, etc.
- Switching according the program: AUTO, CUBE, MANUALLY
- Winter / summer time, 100 memory locatins
- Backup: real time 3 years, program data 10 years



Super-multifunction relay – **SMR-T**

- Relay designed for installation into a wiring box or under wall-switch in an existing electrical installation

- 9 function – 3-wire connection, works without the connection of a neutral conductor



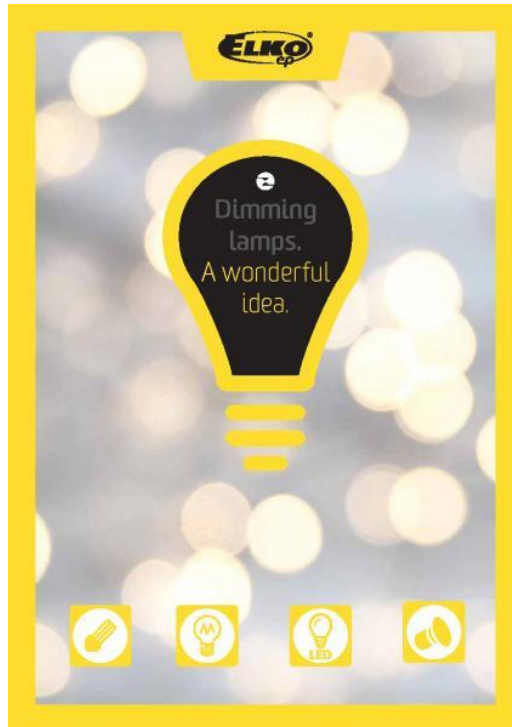
Dimmer for LED bulbs and dimmable energy-saving lamps – **DIM-15**

Designed for dimming of:

- R - resistive resistive bulb, halogen lamp
 - L – inductive inductive coil transformer for low-voltage halogen lamps
 - C – capacitive electronic transformer (capacitive load) for low-voltage halogen
 - LED LED lamps and LED light sources, 230V
 - ESL dimmable energy-saving tubes
-
- Supply voltage 230V AC
 - Output status is indicated by red LED:
 - shines when output active
 - flashes while heating overload, at the same time output is disconnected
 - 1-MODULE version, DIN rail mounting, saddle terminals



Dimmer for LED bulbs and dimmable energy-saving lamps – DIM-15



Rating of the light source ELKO lighting on dimmers ELKO EP
Zátěžitelnost svetečných zdrojů ELKO lighting na stmívače ELKO EP

	LED bulb / žárovky	LED spot lights / bodovky				LED panels / panely		LED / RGB strip / pásek											
		ELKO 47-40-07	ELKO 47-40-08	ELKO 47-40-09	ELKO 47-40-10	ELKO 47-40-11	ELKO 47-40-12	ELKO 47-40-13	ELKO 47-40-14	ELKO 47-40-15	ELKO 47-40-16	ELKO 47-40-17	ELKO 47-40-18	ELKO 47-40-19	ELKO 47-40-20				
DMR-01	✓	11	✓	11	✓	25	✓	13	✓	13	-	-	-	-	-	-	-	-	-
UC-1	✓	21	✓	21	✓	45	✓	25	✓	25	-	-	-	-	-	-	-	-	-
DMR-1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DMR-1A	✓	36	✓	36	✓	74	✓	40	✓	40	-	-	-	-	-	-	-	-	-
DMR-1B	✓	21	✓	21	✓	45	✓	25	✓	25	-	-	-	-	-	-	-	-	-
DMR-1C	✓	145	✓	145	✓	300	✓	165	✓	165	-	-	-	-	-	-	-	-	-
MDR-11 / MDR-12	✓	21	✓	21	✓	45	✓	25	✓	25	-	-	-	-	-	-	-	-	-
MDR-13	✓	11	✓	11	✓	25	✓	13	✓	13	-	-	-	-	-	-	-	-	-
MDR-14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MDR-15	✓	2x29	✓	2x29	✓	2x60	✓	2x33	✓	2x33	-	-	-	-	-	-	-	-	-
MDR-16	-	-	-	-	-	-	-	-	-	-	✓	50	✓	50	-	-	-	-	-
UC3-030	-	-	-	-	-	-	-	-	-	-	✓	50	✓	50	-	-	-	-	-

Notes:
 - May lead to different results based on the state of network cable length and other factors.
 - This table contains the results of tests that were conducted internally and therefore is ONLY for customers only informative.
 - The products were tested in test laboratories ELKO EP, and therefore the company assumes no responsibility for any imitation test environment.

http://www.elkoep.com/downloads/promotion_materials/Dimming_Lamps_A_wonderful_idea_brochure.pdf

<http://www.elkoep.com/products/relay-modular-electronic-devices/dimmers/led-est/dimmer-for-led-bulbs-and-dimmable-fluorescent-lamps-dim-15-13142/>

Twilight switch – **SOU-1**

- Used for switching street illumination and garden lights, illumination of advertisements, shop window, etc.
- Adjustable time delay to eliminate short term fluctuation in illumination
- External sensor IP56 suitable for mounting on the wall – maximum length of lead wire 50m
- Relay contacts: 1x16A/AgSnO2



Digital time switch with an astronomical program – **SHT-4**

- Used for controlling the lighting (billboards, advertisements, shop windows, etc.) with no light sensor required
- By entering the geographic coordinates, the lighting can be switched on/off by sunrise and sunset
- Astro-clock with adjustable interruption
- Operating hours counter for each channel
- Timer - switching on the basis of real – time
- Two channel design, where each channel is programmable independently of the other
- Automatic switching between winter and summer time



Power relays modular type - **VS316**

- **VS316/230** Power supply: AC 230V/50-60Hz
- **VS316/24** Power supply: AC/DC 24V (AC 50-60Hz)

- Relay contact: 3x16A/AgSnO₂
- Enables switching of different phases or 3 phase voltage

- Different colors of LED lights
 - red, green, yellow, blue, white



Power relays modular type - **VS116**

- designed to switch higher output (load) than is the capacity of a switching element = amplifier - auxiliary relays help, amplify, extend ...
- **VS116K VS116U** Relay contact: 1x16A/AgSnO₂
- Power supply: AC 230V/50-60Hz – „K“
- UNI AC/DC 12-240V (AC 50-60Hz) – „U“
- **VS116B/230** in design MINI, mounting into an installation k



Latching (memory) relays – **MR-42**

- Monostable flip-contact, pulse control from more locations via two wires, lights in stairs, hallways, etc..
- Options:
 - 2x parallel contacts or the other relay is latching
 - function selected via external jumper between B1 - B2
 - output contact: 2x changeover /SPDT 16 A



Monitoring voltage relay – HRN 55N

- Relay monitors phase sequence and failure, exceeding of monitored voltage in 3 phase main
- Supply L1-N, it means that relay also monitors break of neutral point
- Output contact 1x changeover 8A / 250V AC1



Level switch – HRH-5

- Level switch – used for monitoring levels in wells, reservoirs, pools, tanks ...
Relay contact 1x8A/AgNi
- Options:
 - single-state monitoring (full/empty)
 - double-state monitoring (ON – 1st, OFF – 2nd)
 - PUMP IN/PUMP OUT/combination
 - adjustable time delay 0,5-10s
 - adjustable sensitivity 5-100kohm
- Galvanically isolated power supply (from circuit)
- Measuring parameters: AC3,5V/10Hz
- Set of level switch, switchboard ECH-4G with IP 65 protection and gland



Thermostat with the switch clock – TER-9

- Multifunction digital thermostat – Temperature monitoring and control based on real-time with two temperature inputs NTC, two thermostats in one device with 6 functions
- Relay contact 2x8A/AgNi
- Options:
 - two independent thermostats
 - 1x dependent
 - differential thermostat
 - 2-stage thermostat
 - zone thermostat
 - thermostat with dead zone
- Other functions:
 - monitoring of short-circuit and sensor disconnection
 - SW settings
 - reference temperature calibration



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Thank you for your attention!