

Control equipment ETIREL

Power relays VS116K, VS316K



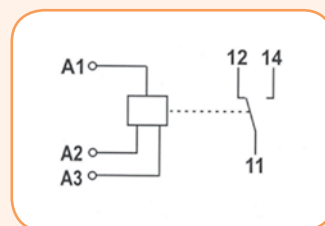
Application: Control signals in low-power circuits, combined with buttons, switches, for automation systems

Advantages:

- Voltage range AC230 or AC / DC 24V,
- 1 module, DIN rail mounting
- Changeover contact 1x16A or 3x16A,
- Output status LED indication

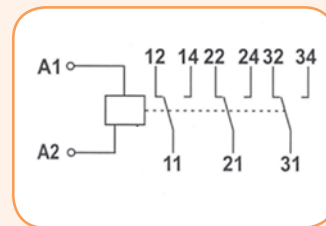
Power relays VS116K, VS316K

Type	Code No.	Voltage Un	Number of contacts	Weight [g]	Packaging [pcs]
VS116K	002471211	AC230V / AC/DC 24V	1P	58	1/10
VS316/230V	002471220	AC230V	3P	84	1/10
VS316/24V	002471225	AC/DC 24V	3P	84	1/10



VS116K

A1 - A2 230V AC
A1 - A3 24V AC/DC



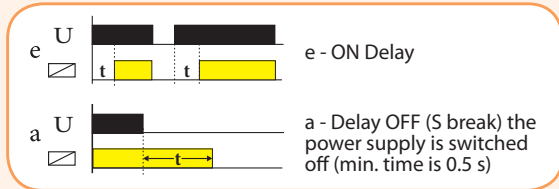
VS316K

Delay OFF without supply voltage CRM-82TO

- „True OFF“ relay - relay timing without supply voltage
- Sample of use: back-up source for Delay OFF in case of voltage failure (emergency lighting, emergency respirator, or protection of el. controlled doors - in case of fire)
- 2 time functions adjustable by rotary switch:
 - a - Delayed return after disconnecting of supply
 - e - Delayed start
- Time range (adjustable by rotary switch and fine setting by potentiometer): 0.1 s - 10 min
- Universal supply voltage AC/DC 12 - 240 V
- Output contact: 2x changeover/DPDT 8 A
- Output status indicated by LED (only in case of supply voltage connection)
- Clamp terminals
- 1-MODULE, DIN rail mounting

Delay OFF without supply voltage CRM-82TO

Type	Code No.	Weight [g]	Packaging [pcs]
CRM-82TO	002470074	93	1/10

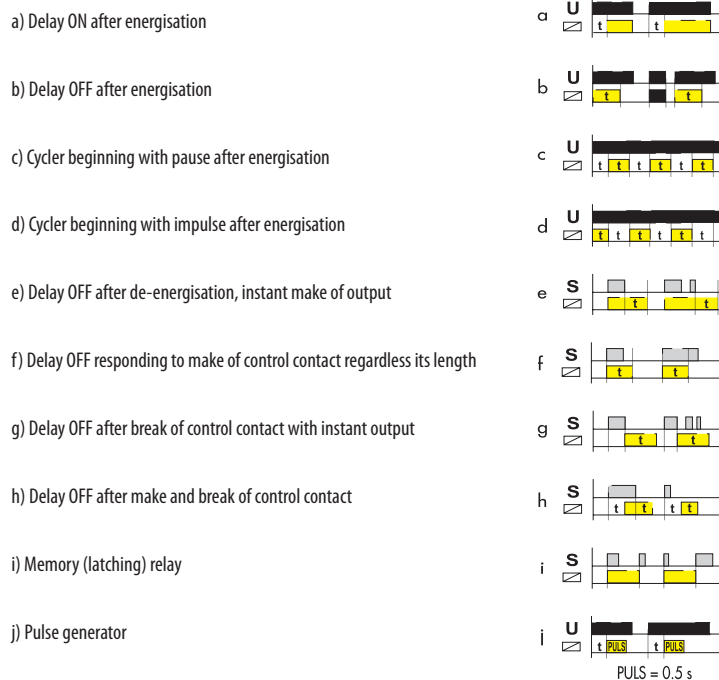


Multifunction time relay CRM-91H, CRM-93H

Advantages

- 1-module, DIN rail mounted
- Universal supply voltage: AC/DC 12V - 240V
- 10 functions:
 - 5 time functions controlled via supply voltage
 - 4 time functions controlled via control input
 - 1 function of memory (latching) relay
- Time scale 0.1 s - 10 days divided into 10 ranges
- User-friendly setting of functions and time via rotary switch
- Output contact:
 - CRM-91H 1x16A changeover
 - CRM-93H 3x8A changeover
- Output indication: multifunction red LED, flashing at certain states

Functions





Multifunction time relay CRM-91H, CRM-93H

Type	I _n [A]	Code No.	Weight [g]	Packaging [pcs]
CRM-91H	16	002470001	68	1/10
CRM-93H	8	002470002	93	1/10

Time relay CRM-2H



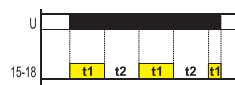
Advantages

- 1-module, DIN rail mounted
- Universal supply voltage: AC/DC 12V - 240V
- 2 time functions:
 - cycler beginning with pulse
 - cycler beginning with pause
- Time scale 0.1s - 100 days divided into 10 time ranges
- Rough time setting by rotary switch
- Output contact: 1x 16 A changeover
- Output indication: multifunction red LED

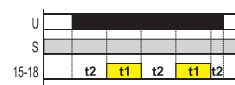
Time relay CRM-2H

Type	I _n [A]	Code No.	Weight [g]	Packaging [pcs]
CRM-2H	16	002470003	68	1/10

Cycler beginning with pulse



Cycler beginning with pause



Delay ON star/delta relay CRM-2T

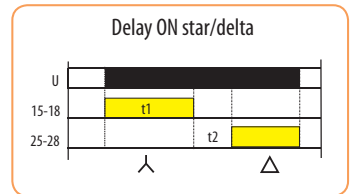
Advantages

- 1-module, DIN rail mounting
- Supply voltage: AC/DC 12V - 240 V
- Generates motor starting cycle star-delta
- Time t1 (star)
 - time scale 0.1 s - 100 days is divided into 10 time ranges
 - rough time setting by rotary switch
 - fine time setting by potentiometer (from 0,1 to 1)
- Time t2 (delay) between star/delta:
 - time range 0.1 s - 1 s is set by potentiometer
- Output contact: 2x 16 A (AC1)
- Output indication: multifunction red LED



Delay ON star/delta relay CRM-2T

Type	I _n [A]	Code No.	Weight [g]	Packaging [pcs]
CRM-2T UNI	3	002470013	95	1/10



Staircase switch CRM-4

Advantages

- 1-module, DIN rail mounted
- Supply voltage: AC 230 V
- Protection against control push-button blocking
- Time range: 0,5 - 10 min
- Selector switch:
 - AUTO: normal function acc. to set time
 - OFF: permanent off
 - ON: permanent on
- Time setting via potentiometer
- Output contact: 1x 16 A changeover (load up to 4000 VA/AC1)



Staircase switch CRM-4

Type	I _n [A]	Code No.	Weight [g]	Packaging [pcs]
CRM-4	16	002470012	53	1/10

Programmable staircase switch CRM-42



Advantages

- 1-module, DIN rail mounted.
- Supply voltage: AC 230 V
- Intelligent staircase switch, the same use as CRM-4, but with increased possibility of control. In mode "PROG" it is possible to select the time of delayed OFF by number of button-pressing sequences. Each pressing multiplies the time set by potentiometer, which that the time is set to 5 min and the button is pressed on 3 times, the output is automatically prolonged to 15 min. The output can also be switched off earlier (reset) by a long pressing of button (longer than 2 sec)
- Output relay contact 16A/AC1 with inrush current up to 80 A enables switching of electrical bulbs and also fluorescent lights.
- Selector switch:
 - ON - Output permanent ON
 - AUTO - timing according to adjusting by potentiometer in range of 30 s - 10 min
 - PROG - timing with time prolongation option by a number of button pressing
- Timing (in mode AUTO and PROG) can be stopped by long pressing of the button (longer than 2 sec)
- Output indication: multifunctional red LED, flashing at certain states
- Possibility to connect up to 100 buttons equipped with glow lamps (up-to 100mA)
- 3-wire or 4-wire connection (it is possible to control input S by potential A1 or A2)
- Warning before switch OFF- output double flash 40 and 30 sec before switch OFF

Programmable staircase switch CRM-42

Type	In [A]	Code No.	Weight [g]	Packaging [pcs]
CRM-42	16	002470078	65	1/10

Digital time switch SHT-1, SHT-1/2, SHT-3 and SHT-3/2



Advantages

- 2-modules, DIN rail mounting
- Daily, weekly program in one device (SHT-1; SHT-1/2)
- Daily, weekly, monthly, yearly program (SHT-3, SHT-3/2)
- Supply voltage AC230 V or AC/DC 12-240 V
- Switching: according to the program (AUTO)/constantly manual/manually until next program change/random (CUBE)
- Automatic conversion summer/winter time
- Sealable cover of the front panel
- 100 memory places, clear LCD display
- Min. interval 1s
- Pulse/cyclic output
- Output contact: 1x 16A changeover → SHT-1, SHT-3.
- Output contact: 2x 16A changeover → SHT-1/2, SHT-3/2.

Digital time switch SHT-1 and SHT-1/2

Type	I _n [A]	Code No.	Weight [g]	Packaging [pcs]
SHT-1 UNI	16	002470051	130	1
SHT-1 230V	16	002470050	110	1
SHT-1/2 UNI	16	002470054	130	1
SHT-1/2 230V	16	002470053	110	1
SHT-3 UNI	16	002470056	110	1
SHT-3 230V	16	002470055	130	1
SHT-3/2 UNI	16	002470058	110	1
SHT-3/2 230V	16	002470057	130	1

Analog electromechanical time switch APC-D1, APC-DR1

Advantages

- The APC time switch controls any electrical installation by means of daily programs.
- Without (D1) or with (DR1) battery backup.
- Manual switch with permanent ON position.
- Supply voltage : AC 230V
- Sealable cover of frontal panel
- Output contact : 1x NO 16A
- Simple dial time setting. Minimum switching time is 15 min.
- 1 module, DIN rail mounting.

Analog electromechanical time switch APC-D1, APC-DR1

Type	I _n [A]	Code No.	Weight [g]	Packaging [pcs]
APC-D1	16	002472001	87	1/10
APC-DR1	16	002472002	87	1/10



Multifunction relay SMR-T, SMR-H, SMR-B

Advantages

- Multifunction relay designated for installation into a wiring box, under wall-switch into an existing installation (SMR-T doesn't need neutral to function)
- Fast solution for exchanging standard wall-switch for a switch controlled by time or for a memory relay controlled by a button

SMR-T

- 3-wire connection, works without neutral wire
- Output: 10-160 VA (resistive load)
- It cannot be used for fluorescent lights and energy saving lights (loads of capacitive type)

SMR-H

- 4-wire connection
- Output 0-200 VA
- It cannot be used for fluorescent lights and energy saving lights (loads of capacitive type)

SMR-B

- 4-wire connection
- 10 functions
- Output contact 1x 16A / 4000 VA, 250V AC1
- Enables switching of fluorescent lights and also energy saving lights (see instruction manual technical data)
- Independent galvanically separated input AC/DC 5-250 V (for example for control from a security system)

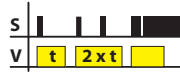
Multifunction relay SMR-T, SMR-H, SMR-B

Type	Code No.	Weight [g]	Packaging [pcs]
SMR-T	002470004	29	1/14
SMR-H	002470005	31	1/14
SMR-B	002470021	53	1/14



Function

Function a - delay on entering edge
output times when it is switched. Each following pressing (max. 5x) increases time
Long pressing switches output off



Function b - delay off on downward edge
output times after button is switched off, switches immediately



Function c - delay off on downward edge
after switching off output switches on and times.



Function d - cycler - flasher impulser
output cycles in regular interval, cycler starts with an impulse



Function e - puls shift
delay on after the switch is switched on and delay on after it is switched off



Function f - delay on
delay on after switch is switched on until it is switched off



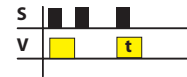
Function g - pulse relay

switches on by a press, another pressing switches the output off. The length of pressing doesn't matter, it is possible to set reaction delay by a potentiometer and thus eliminate rebound of a button



Function h - impulse relay with delay

one press switches on, another one switches the output off in case it is done before the end of timing



Function i - delay on after switched off

output cycles in regular intervals, cycler starts with a gap



Function j* - cycler starting with gap

delay on after switching on until it is de-energized or a switch is pressed again.



*function j is valid only for SMR-B

Memory and latching relays MR-41, MR-42



Advantages

- 1-module, DIN rail mounted
- Supply voltage:
 - UNI AC/DC 12V - 240V
 - 230 AC 230V
- Keeps state in memory when supply disconnected. When energized again, relay returns to the state before disconnecting.

MR-41

- Output contact: 1x changeover 16A/ AC1

MR-42

- Options - 2x paralel contacts or the other relay is latching
- Function selected via external wire link between B1-B2
- Output contact: 2x changeover 16A/ AC1

Memory & latching relays MR-41, MR-42

Type	Code No.	Weight [g]	Packaging [pcs]
MR-41 UNI	002470007	64	1/10
MR-42 UNI	002470008	89	1/10
MR-41 230	002470094	60	1/10
MR-42 230	002470095	85	1/10

Dimmers - compatibility with various types of light bulbs

Product	automatically detects type of load	R	L	C	ESL	LED	
		Standard and halogen light bulbs	Low voltage light bulbs (12-24V), wounded transformer	Low voltage light bulbs (12-24V), electronic transformer	Dimmable Energy Saving Lamps (ESL)	CATEGORY 1: „LOW COST“ LED LAMPS - MULTILED SYSTEMS WITH INTEGRATED LINEAR POWER SUPPLY	CATEGORY 2: 1-3 DIMMABLE POWER LED LAMPS WITH INTEGRATED SWITCHING POWER SUPPLY
DIM-2	×	✓	✓	×	×	×	×
DIM-14	✓	✓	✓	✓	×	×	×
DIM-15	×	×	×	×	✓	✓	✓
SMR-M	×	×	×	×	✓	✓	✓
SMR-S	×	✓	✓	×	×	×	×
SMR-U	✓	✓	✓	✓	×	×	×

Staircase switch with dimming DIM-2

Advantages

- 1-module, DIN rail mounted
- Supply voltage AC 230V
- Function of gradual dim-up and dim-down, controlling inputs for push button and switch
- Protection against button dead locking
- Potentiometers adjust:
 - speed (fluency) of switching on
 - maximum intensity of light
 - time of maximum intensity light
 - speed (fluency) of switching off
- Contactless output: 1 x triac
- Load AC1 2A / 500W



Staircase switch with dimming DIM-2			
Type	Code No.	Weight [g]	Packaging [pcs]
DIM-2	002470009	70	1/10

Dimmer DIM-14

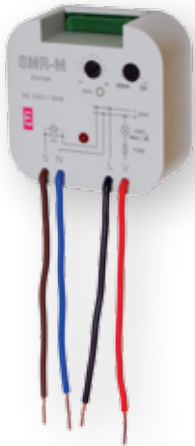


Advantages

- 1-module, DIN rail mounting
- Supply voltage: AC 230 V
- Designed for dimming of electrical bulbs and halogen lights with wound or electronic transformer
- For switching and dimming of lights, control inputs for a button
- Short pressing switches ON/OFF, longer pressing (more than 0.5 s) enables gradual light intensity setting when switched off, brightness level is stored in a memory and when switched on again last brightness level is restored
- Output without contacts: 2x MOSFET
- LED output indication (with any level of brightness)
- Possibility of parallel connection of control buttons
- Resistive, inductive or capacitive load, up to 300 W, for a short term up to 500 W
- Simultaneous connection of inductive and capacitive load is not allowed.
- Electronic overvoltage protection
- Protection against temperature overrun inside a device – output off and signalization of overheat by LED flashing

Dimmer DIM-14				
Type	In [A]	Code No.	Weight [g]	Packaging [pcs]
DIM-14	2	002470023	58	1

Dimmers for LED bulbs and dimmable fluorescent lamps DIM-15 and SMR-M



Advantages

- Designated for dimming of:
 - a) LED bulbs and LED light sources
 - b) dimmable saving fluorescent lamps
- Enables gradual setting of luminance by push-button (non-detent) or parallel buttons
- Returns to last state upon re-energization
- Type of light source (LED or saving fluorescent lamp) is set by switch-over on the front panel of device
- Minimal luminance, set by potentiometer on the front panel, eliminates flashing of some types of saving fluorescent lamps

DIM-15

- Supply voltage 230V AC
- Output status is indicated by red LED:
 - shines when output is active
 - flashes while heating overload, at the same time output is disconnected
- 1-MODULE version, DIN rail mounting, saddle terminalh)

SMR - M

- Button-controlled dimmer intended to be installed in an installation box (e.g. KU-68) into the existing electrical wiring
- Protection against excessive temperature inside the device - switches off the output



Dimmer DIM-15, SMR-M			
Type	Code No.	Weight [g]	Packaging [pcs]
DIM-15	002470290	57	1/10
SMR-M	002470291	38	1/14

Dimmer SMR-S, SMR-U

Advantages

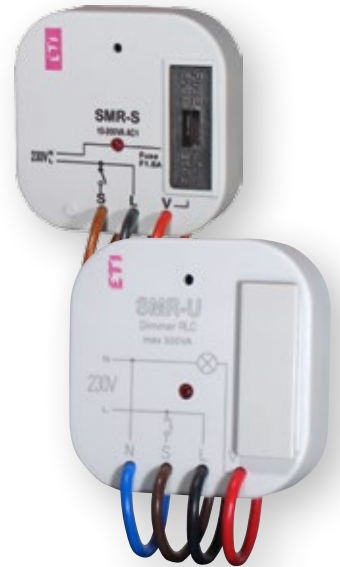
- Button-controlled dimmers designated for flush mounting into a wiring box, into an existing installation (SMR-S doesn't need neutral to function)
- Controlling lamp brightness
- Dimming, control from more places (parallel button connected), possible protection against temperature overrun inside the device – output off.
- By changing wall-switch for a switch with SMR-S/SMR-U installed below effective brightness control can be reached. SMR-S enables dimming of electrical bulbs and wound transformers 12V, halogen lights (inductive load), SMR-U also enables dimming of electronic transformers 12V, halogen lights (capacitive load). It cannot be used for dimming fluorescent lights or energy saving lights.

SMR-S

- 3-wire connection, functional without neutral
- Max. load: 300 VA (resistive loads)
- Contactless output - 1x triac
- With exchangeable fuse

SMR-U

- 4-wire connection
- Max. load: 500 VA
- Contactless output - 2x MOSFET
- Electronic overload and overtemperature protection – output off in case of short-circuit or overvoltage



Dimmer SMR-S, SMR-U

Type	Code No.	Weight [g]	Packaging [pcs]
SMR-S	002470010	32	1/14
SMR-U	002470022	32	1/14

Twilight switch in IP65 ETS-16b

Application

Used for remote control of external lighting. time delay prevents accidental activation of the short-term changes in the intensity lighting. Designed to be mounted on a flat surface (eg a wall, disc).

Advantages:

- robust and simple design,
- adjustable-sensitivity threshold,
- IP 65



Twilight switch in IP65 TS-16b

Type	Code No.	Weight [g]	Packaging [pcs]
ETS-16b	002471102	160	1/10

Twilight switch SOU-1 + sensor



Advantages

- 1-module, DIN rail mounted
- Supply voltage: AC 230 V
- Switches according to level ambient light intensity
- Adjustable time pause to eliminate short-term illumination peaks
- Adjustable level of light intensity in 2 ranges 100-50000 Lx and 1-100 Lx
- Controlling input for additional control inputs, e.g. time switch
- External sensor, protection degree IP55, suitable for mounting on the wall (supplied by switch)
- Output contact: 1x changeover 16A / AC1
- LED output indication

Twilight switch SOU-1

Type	Code No.	Weight [g]	Packaging [pcs]
SOU-1	002470011	65	1

* Sensor for twilight switch SOU-1 also available separately (code No. 002470052)
 Sensor tolerance ±33%

Twilight switch with digital time switch SOU-2 + sensor



Advantages

- 2-module, DIN rail mounting
- Supply voltage: AC 230 V
- Adjustable light intensity 1-50000 lx
- Serves for control of lights on the basis of ambient light intensity and real time (combination of SOU-1 and time switch clock SHT-1 in one device)
- The advantage of real time consists in the blocking function of the twilight switch in the case of an uneconomical use of lights (night hours, weekends etc.)
- Function of random switching enables simulation of presence when nobody is in the building
- Switching: according to the program (AUTO) /permanently manual / random (CUBE)
- External sensor IP56 is suitable for mounting on the wall/ in panel (cover and sensors are part of delivery)

Twilight switch with digital time switch SOU-2 + sensor

Type	In [A]	Code No.	Weight [g]	Packaging [pcs]
SOU-2 + sensor	16	002470020	130	1

* Sensor for twilight switch SOU-1 also available separately (code No. 002470052)
 Sensor tolerance ±33%

Time switch ASTROCLOCK-2

Description

The ASTROCLOCK-2 is a time switch designed to control luminous loads in function of dawn and dusk times. It includes a program that automatically adjusts the dawn lighting-up and dusk switching-off times, without sensors and any need for maintenance. The geographic position location is set up by entering geographic coordinates of location where operating or with selecting nearest city from built in list. This product successfully replaces twilight switches with dusk(light) sensor (photo cell).

Its small size of only two modules makes it ideal for installation on distribution boards with little available space. The unit includes 40 memory spaces in two independent circuits that can be programmed in an astronomic or with fixed time operation or combination.

Advantages

- 2 module – DIN rail mounting.
- Supply voltage: 230V 50/60 Hz.
- Two independent programmable output contacts 2x16A (AC1).
- 40 daily and weekly programs with astronomical or fixed-time manoeuvres.
- Daily astronomical adjustment with offset possibility(±delay).
- Option of automatic switching between summer and winter time.
- Backup power supply: Replaceable CR2032 battery(included).
- High-contrast backlit display.
- Menu languages: ENG, SLO, HR/SRB/BiH, POL, RUS.
- Countries with biggest cities directly supported: Poland, Slovenia, Estonia, Lithuania, Latvia, Russia, Ukraine, Bosnia and Herzegovina, Croatia, Macedonia, Serbia.
- Other cities and countries supported through entering geographic coordinates (zone latitude and longitude).



Time switch ASTROCLOCK-2

Type	In [A]	Code No.	Weight [g]	Packaging [pcs]
ASTROCLOCK-2	16	002472051	166	1/120

Digital time switch ETICLOCK-R1

Description

ETICLOCK-R1 is a digital time switch designed to control an electrical installation. Different types of operations: ON and OFF at a set time, shortterm operations or pulses (1 to 59 seconds) and repetitive cycles (1 to 59 seconds or 1 minute to 23 hours and 59 minutes) applied to one channel (C1). It includes a series of additional functions such as: automatic DST changes, 4 holiday periods, adjustable screen brightness. Menus can be displayed in several languages (ENG, SLO, HR/SRB/BiH, POL, RUS). One voltage free changeover output (channel) allows programming of up to 40 operations (programs).

Advantages:

- Rated voltage and frequency: As indicated on the device (230 V AC 50-60Hz)
- Voltage free programmable changeover output contact: 1x16 (10) A / 250 V AC
- Automatic DST change by country can be disabled
- On-screen operating schedule
- Display screen: Back-lit LCD, Menu languages: English, Slovenian, HR/SRB/BiH, Polish, Russian.
- Memory spaces: 40 programs (operations)
- Power reserve:
 - 10 years (with 4 years replaceable CR2032 battery and no network connection)
 - 48 h (without battery or empty and no network connection)
- Types of operations: ON/OFF, PULSE (1 to 59 sec.) and CYCLES (1 to 59 sec. or 1 min to 23h and 59 min)
- Size: 2 DIN modules (35 mm)



Digital time switch ETICLOCK-R1

Type	In [A]	Code No.	Weight [g]	Packaging [pcs]
ETICLOCK-R1	16	002472053	136	1/10

Current monitoring relay PRI-51



Advantages

- To monitor heating of rods in shunts, heating of cables, to indicate current flowing, to monitor consumption of one-phase electrical loads
- 1-phase, 1-module, DIN rail mounting
- Universal supply voltage AC 24 V - 240 V and DC 24 V
- Output contact: 1x changeover 8 A/AC1

- Supply is not galvanically separated from measured current, it must be in the same phase
- Adjustable delay 0,5 - 10 s to eliminate short current peaks
- Fluent adjusting actuating current via potentiometer, choice of 5 ranges: AC 0.1 - 1 A, AC 0.2 - 2 A, AC 0.5 - 5 A, AC 0.8 - 8 A, AC 1.6 - 16 A

Current monitoring relay PRI-51

Type	I_n [A]	Code No.	Weight [g]	Packaging [pcs]
PRI - 51/1	1	002471816	58	1/10
PRI - 51/2	2	002471817	58	1/10
PRI - 51/5	5	002471818	58	1/10
PRI - 51/8	8	002471819	58	1/10
PRI - 51/16	16	002470019	58	1/10

Voltage monitoring relay HRN-33, HRN-34, HRN-35



Advantages

- Serves to control/monitor supply voltage for appliances sensitive to supply tolerance, protects devices against under/over voltage
- 1-module, DIN rail mounting, 1-phase monitoring
- Supply from monitored voltage (monitors level of its own supply)
- 3-state indication - LEDs indicating normal state and 2 fault states
- Adjustable time delay for all types is 0 - 10 s (to eliminate short voltage drops or peaks) voltage U_{min} adjusted as % of U_{max}
- Time delay and voltage adjusted via potentiometer
- **HRN-33**
 - monitors voltage in range AC 48 - 276 V
 - U_{max} and U_{min} can be monitored independently
- **HRN-34**
 - like HRN-33, but voltage range is DC 6 - 30 V
 - monitoring of battery circuits (12, 24 V)
- **HRN-35**
 - like HRN-33, but independent output relays for each voltage level
 - switching of other loads possible

Voltage monitoring relay HRN-33, HRN-34, HRN-35

Type	I_n [A]	Code No.	Weight [g]	Packaging [pcs]
HRN-33	16	002470015	73	1/10
HRN-34	16	002471400	73	1/10
HRN-35	16	002471401	85	1/10

Over/undervoltage monitoring relay HRN-54, HRN-54N

Advantages

- Serves to monitor voltage , phase failure and sequence in switchboards, protection of devices in 3-phase mains
- 1-module, DIN rail mounting
- It is possible to set upper and lower level of monitoring voltage
- Adjustable time delay eliminates short voltage peaks and failures in the mains
- Faulty state is indicated by red LED and by breaking output relay contact
- Output contact: 1x changeover 8 A /250 V AC1
- If the supply voltage falls below 60% U_n (U_{off} lower level) the relay immediately breaks with no delay
- **HRN-54** - supply from all phases which means that the relay is functional also in case when one phase is faulty
- **HRN-54N** - supply L1-N, means that relay monitors also failure of neutral wire



Over/undervoltage monitoring relay HRN-54, HRN-54N				
Type	I_n [A]	Code No.	Weight [g]	Packaging [pcs]
HRN-54	8	002471416	69	1/10
HRN-54N	8	002471412	67	1/10

Level switch HRH-5

Advantages:

- Relay is designated for monitoring levels in wells, reservoirs, pools, tanks....
- In one device you can choose the following configurations:
 - one-level switch of conductive liquids (by connecting H and D)
 - two-level switch of conductive liquids
- One-state device monitors one level, two-state device monitors two levels (switches on one level and switches of on another level).
- Choice of function PUMPUP, PUMPDOWN
- Adjustable time delay on the output (0.5 - 10s)
- Sensitivity adjustable by a potentiometer (5-100k Ω)
- Measuring frequency 10Hz prevents polarization of liquid and raising oxidation of measuring probes
- Galvanically separated supply voltage UNI 24.. 240 VAC/DC
- Output contact 1xchangeover 8A/250V AC1
- 1-module type, mounting onto a DIN rail



Level switch HRH-5			
Type	Code No.	Weight [g]	Packaging [pcs]
HRH-5	002471715	72	1/8

Sensors HRH

Sensors HRH				
Type	Code No.	Description	Weight [g]	Packaging [pcs]
Sensor SHR-1-M	002471205	Brass sensor without cable, max. wire profile 2,5mm ² , op. temp. (-25 to...+60°C)	9,7	1
Sensor SHR-1-N	002471709	Stainless steel sensor without cable, max. wire profile 2,5mm ² , op. temp. (-25 to...+60°C)	9,7	1
Sensor SHR-2	002471203	Stainless steel sensor without cable, max. wire profile 2,5mm ² - IP68, op. temp. (+1...+80°C)	48,6	1
Sensor SHR-3	002471230	Stainless steel sensor with 3m cable PVSC 2x0,75mm ² - IP67, op. temp. (< 95°C)	239	1
Sensor HRH-10	002471703	Sensor with 10m cable	30	1
Sensor HRH-15	002471704	Sensor with 15m cable	35	1
Sensor HRH-20	002471705	Sensor with 20m cable	40	1
Sensor HRH-30	002471706	Sensor with 30m cable	48	1
Sensor HRH-40	002471707	Sensor with 40m cable	62	1

Thermostat relay TER-3 (A, B, C)



Advantages

- 1-module, DIN rail mounting
- Red LED indicates status of output, green LED indicates energization of the device
- Single thermostat for temperature monitoring and regulation in range of -30...+70 °C in six ranges
- Can be used for monitoring temperature e.g. in switchboards, heating systems, cooling systems, liquids, radiators, motors, devices, open spaces etc.
- Function of short-circuit or sensor disconnection monitoring
- Possibility to set function "heating" / "cooling" (setting is done by DIP switch)
- Adjustable hysteresis (sensitivity), switching by potentiometer in range 0.5 -5 K
- Universal supply AC/DC 24V -240 V, not galvanically separated
- Output contact: 1x NO 16 A /250 V AC1
- It is possible to place the sensor directly on terminal block – for temperature monitoring in a switchboard or in its surroundings
- Choice of external thermo sensors with double insulation in standard lengths 3, 6 and 12 m

Thermostat relay TER-3 (A, B, C)

Type	temp. range or sensor length	Code No.	Weight [g]	Packaging [pcs]
TER-3A	-30...+10 °C	002471801	73	1/10
TER-3B	0...+40 °C	002471813	73	1/10
TER-3C	+30...+70 °C	002471802	73	1/10

*Note: Order sensor TZ from the table below

Multifunction digital thermostat TER-9

Advantages

- Digital thermostat with 6 functions and in-built time switch clock, with daily and weekly program (as SHT-1). Thermo functions can be managed also in real time
- Complex control of heating and water heating in buildings, solar heating etc
- 2 thermostats in one, 2 temperature inputs, 2 outputs with potential free contact
- Functions: two independent thermostats, 1x dependent, differential thermostat, 2-stage thermostat, thermostat with dead zone, heating functions
- Program setting of output function, calibration of sensors according to reference temperature (off set)
- Thermostat is inferior to a program of digital switch clock
- 2 -module, DIN rail mounting
- Supply AC 230 V or AC/DC 24 V galvanically separated
- Output contact 1x changeover 8 A / 250 V AC1 for each output
- Memory for the most often used temperatures
- Well-arranged display of set and measured data, illuminated LCD by backlight
- Zero error when value setting
- Function of monitoring short-circuits or sensor disconnection

Multifunction digital thermostat TER-9

Type	In [A]	Code No.	Weight [g]	Packaging [pcs]
TER-9 24V AC/DC	8	002471803	140	1
TER-9 230V AC	8	002471824	140	1

*Note: Order sensor TZ from the table below

Thermal sensors TZ

Type	length of sensor cable [A]	Code No.	Weight [g]	Packaging [pcs]
sensor TZ-0	0,11 m.	002471809	4,5	1
sensor TZ-3	3m.	002471810	103	1
sensor TZ-6	6m.	002471811	216	1
sensor TZ-12	12 m.	002471812	418	1



Thermostat for monitoring temperature of motor winding TER-7

Advantage:

- Monitors temperature of motor winding of motors with built in PTC sensor
- Fixed levels of switching
- MEMORY function - active by DIP switch
- RESET of faulty state:
 - button on the front panel
 - by external contact (remote by two wires)
- Function of short-circuit or sensor disconnection monitoring, red LED flashing indicates faulty sensor
- Output contact: 2x changeover 8 A / 250 V AC1
- Red LED shines and indicates exceeded temperature
- Multivoltage supply AC/DC 24-240 V (UNI)
- 1-module, DIN rail assembly possible

Thermostat relay TER-7

Type	Code No.	Weight [g]	Packaging [pcs]
TER-7	002471804	65	1/10



Hour meter HM-1



Applications

- Gen-sets
- Compressors
- Pumps
- Medical equipment
- Control panels
- Air conditioning

Advantages

- 2-module size
- DIN rail mounting
- Long lifetime
- IP40 protection – front
- Operating voltage 230V AC

Hour meter HM1

Type	Supply voltage [U _e AC]	Code No.	Weight [g]	Packaging [pcs]
HM-1	230	002472045	35	1

Electronic fuse monitor EFM



- Recognize fuse failure in three-phase or mono-phase system
- Can be used for all sizes and types of fuses
- Signals operation even if loads are switched off
- Automatic reset after replacing the fuse
- Working properly even if:
 - Asymmetrical mains
 - Independence of phase sequence
 - Mains with harmonic waves
 - Motors providing feedback
- Internal resistance > 2000 Ω/v
- Output relay 1 pole changeover contact
- Size 2 modules - 35mm - DIN rail mounting EN50.022
- Self-extinguished material UL94 v0
- Typical application: fuses monitoring on 3-ph motor mains
- EU directives - CE marking:
 - 2014/30/UE - EMC
 - 2014/35/UE - LVD

Electronic fuse monitor EFM

Type	In [A]	Un [V AC]	Code No.	Description	Weight [g]	Packaging [pcs]
EFM230	8	230	002472213	Fuse Monitor 3X230 volts - 1 RelayCO 250VAC 8A	175	1
EFM400	8	400	002472214	Fuse Monitor 3X400 volts - 1 RelayCO 250VAC 8A	175	1

Power supplies PS-30

Description

- galvanically separated
- AC/DC switching stabilized power supplies, 3-module size, DIN rail mounting
- PS-30-12 - stabilized power supply with fixed output voltage 12 V/30 W (2,5A)
- PS-30-24 - stabilized power supply with fixed output voltage 24 V/30 W (1,25A)

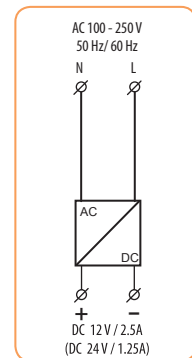
Advantages

- Output current is limited by electronic fuse, in case maximal current is exceeded, the device switches off and after a shot time interval it again switches on.
- Indication of output voltage by green LED on front panel
- Temperature protection – if temperature is exceeded, the device switches off and after cooled down, it switches on again.



Switching power supply PS 30W

Type	I _{out} [A]	U _{out} [V]	Code No.	Weight [g]	Packaging [pcs]
PS-30-12	2,5	12	002470132	160	1
PS-30-24	1,25	24	002470133	160	1



Switching Power Supply

Description

- High efficiency up to 90%
- 150% Peak load capability
- 105 °C long life capacitors
- Metal housing, IP20
- DIN rail mounting (en50.022)

Protection:

- Short circuit
- Overload
- Overvoltage
- Overtemperature (PS-240-24 & PS-480-24)

EU Directives - CE Marking:

- > 2014/30/UE - EMC
- > 2014/35/UE - LVD

Switching power supply

Type	I _{out} [A]	U _{out} [V]	Code No.	Weight [g]	Packaging [pcs]
PS-48-24	2	24-28	004656680	310	1
PS-72-24	3	24-28	004656681	360	1
PS-120-24	5	24-28	004656682	540	1
PS-240-24	10	24-28	004656683	810	1
PS-480-24	20	24-28	004656684	1600	1

