

## UNDER / OVER SINGLE-PHASE A.C. CURRENT RELAYS



### 1RSLI - Under current relay 1RSHI - Over current relay

- Multiple Choice Inputs: 2A, 5A and 10A AC
- BURDEN 2W
- FREQUENCY 50 ÷ 60 Hz
- POWER SUPPLY STANDARD 230V 50Hz ±10%
- DC power supplies, galvanically insulated, on request
- ACCURACY 5%
- TEMPERATURE operating -10°C ÷ +55°C / storage -25°C ÷ +70°C
- SIGNALLING operating relay red led light  
power supply (ON) green led light  
operating time flashing green led
- GALVANIC SEPARATION BETWEEN INPUTS AND OUTPUTS
  - insulation between inputs, outputs, power supply 2kV for 1min at 50Hz
  - insulation between the all circuits and earth 4kV for 1min at 50Hz
- OUTPUT RELAY 16A 250V ~ resistive load
- HYSTERESIS 1 ÷ 45% adjustable potentiometer on front
- DELAY TIME 1 ÷ 30 sec adjustable potentiometer on front
- CALIBRATION 30 ÷ 100% adjustable potentiometer on front
- OVERLOADING 2 I<sub>n</sub> for 10 sec
- DIMENSIONS 3 DIN modules
- WEIGHT Kg. 0,25
- For the connection diagram see page 90

## UNDER / OVER SINGLE-PHASE A.C. VOLTAGE RELAYS



### 1RSLV - Under voltage relay 1RSHV - Over voltage relay

- Multiple Choice Inputs: 100V, 300V and 500V AC
- BURDEN 2W
- FREQUENCY 50 ÷ 60 Hz
- POWER SUPPLY STANDARD 230V 50Hz ±10%
- DC power supplies, galvanically insulated, on request
- ACCURACY 5%
- TEMPERATURE operating -10°C ÷ +55°C / storage -25°C ÷ +70°C
- SIGNALLING operating relay red led light  
power supply (ON) green led light  
operating time flashing green led
- GALVANIC SEPARATION BETWEEN INPUTS AND OUTPUTS
  - insulation between inputs, outputs, power supply 2kV for 1min at 50Hz
  - insulation between the all circuits and earth 4kV for 1min at 50Hz
- OUTPUT RELAY 16A 250V ~ resistive load
- HYSTERESIS 1 ÷ 45% adjustable potentiometer on front
- DELAY TIME 1 ÷ 30 sec adjustable potentiometer on front
- CALIBRATION 30 ÷ 100% adjustable potentiometer on front
- OVERLOADING 2 V<sub>n</sub> for 10 sec
- DIMENSIONS 3 DIN modules
- WEIGHT Kg. 0,25
- For the connection diagram see page 91

## UNDER / OVER SINGLE-PHASE D.C. CURRENT RELAYS



### 1RSLIC - Under current relay 1RSHIC - Over current relay

- Multiple Choice Inputs: 1mA, 10mA and 20mA (4 ÷ 20 mA)
- BURDEN 2W
- FREQUENCY 50 ÷ 60 Hz
- POWER SUPPLY STANDARD 230V 50Hz ±10%
- DC power supplies, galvanically insulated, on request
- ACCURACY 5%
- TEMPERATURE operating -10°C ÷ +55°C / storage -25°C ÷ +70°C
- SIGNALLING operating relay red led light  
power supply (ON) green led light  
operating time flashing green led
- GALVANIC SEPARATION BETWEEN INPUTS AND OUTPUTS
  - insulation between inputs, outputs, power supply 2kV for 1min at 50Hz
  - insulation between the all circuits and earth 4kV for 1min at 50Hz
- OUTPUT RELAY 16A 250V ~ resistive load
- HYSTERESIS 1 ÷ 45% adjustable potentiometer on front
- DELAY TIME 1 ÷ 30 sec adjustable potentiometer on front
- CALIBRATION 30 ÷ 100% adjustable potentiometer on front
- OVERLOADING 2 I<sub>n</sub> for 10 sec
- DIMENSIONS 3 DIN modules
- WEIGHT Kg. 0,25
- For the connection diagram see page 90

## UNDER / OVER SINGLE-PHASE D.C. VOLTAGE RELAYS



### 1RSLVC - Under voltage relay 1RSHVC - Over voltage relay

- **Multiple Choice Inputs:** 1V, 5V and 10V (60mV and other voltages on request)
- **BURDEN** 2W
- **FREQUENCY** 50 ÷ 60 Hz
- **POWER SUPPLY STANDARD** 230V 50Hz ±10%
- **DC power supplies, galvanically insulated, on request**
- **ACCURACY** 5%
- **TEMPERATURE** operating -10°C ÷ +55°C / storage -25°C ÷ +70°C
- **SIGNALLING** operating relay **red** led light  
power supply (ON) **green** led light  
operating time flashing **green** led
- **GALVANIC SEPARATION BETWEEN INPUTS AND OUTPUTS**
  - insulation between inputs, outputs, power supply 2kV for 1min at 50Hz
  - insulation between the all circuits and earth 4kV for 1min at 50Hz
- **OUTPUT RELAY** 16A 250V ~ resistive load
- **HYSTERESIS** 1 ÷ 45% adjustable potentiometer on front
- **DELAY TIME** 1 ÷ 30 sec adjustable potentiometer on front
- **CALIBRATION** 30 ÷ 100% adjustable potentiometer on front
- **OVERLOADING** 2 Vn for 10 sec
- **DIMENSIONS / WEIGHT Kg.** 3 DIN modules / 0,25
- For the connection diagram see page 91

## INSULATION CONTROL RELAYS



### 1RCI

- **POWER SUPPLY** 230V CA ±20% (others on request)
- **MAXIMUM VOLTAGE OF THE SYSTEM TO CONTROL** ≤ 400V CA
- **MEASUREMENT VOLTAGE** ≤ 24V CC
- **FREQUENCY OPERATING AND SYSTEM TO CONTROL** 50÷60 Hz
- **BURDEN** 2 W
- **MAXIMUM MEASUREMENT CURRENT** ≤ 25µA
- **INTERNAL RESISTANCE** ≥ 1 Mohm
- **CALIBRATION** 30÷300 and 300÷800 Kohm adjustable potentiometer on front (the range is selectable by a switch located under a removable section of the upper case wall)
- **ACCURACY** ±10%
- **INSULATION VOLTAGE** 2,5 kV for 1 minute
- **TEMPERATURE** operating -10°C ÷ +55°C / storage -25°C ÷ +70°C
- **DIMENSIONS / WEIGHT Kg.** 3 DIN modules / 0,35
- For the connection diagram see page 92

The **1RCI** is a relay used to monitor the insulation in a singlephase or threephase system, with or without a neutral insulated to earth. This device operates under the principle of a continuous voltage applied between the system voltage and earth. The **1RCI** indicates the current absorbed by the system after the application of the aforementioned voltage. The effective value of the insulation resistance of the system is given by the relation between the applied voltage and the current pointed out.

## OVER SPEED CONTROL RELAYS



### 1RSV 1224

- **POWER SUPPLY** 12 VDC and 24 VDC present on the same relay
- **For petrol and diesel engines, input by pick-up**
- **Speed limit adjustable from 0 to 6000 Hz**
- **Two output relays:** one for engine operating  
the second for the overspeed control
- **DIMENSIONS** 3 DIN modules
- **WEIGHT Kg.** 0,19
- For the connection diagram see page 92

## HOUR RUN METERS



### SINGLE: 1RH24 - 1RH110 - 1RH230 - 1RH400 - 1RH36C | DOUBLE: 1RHD230

BURDEN	1 W	2 x 1 W	
FREQUENCY	50 or 60 Hz in AC to be specified when ordering		
POWER SUPPLY	24 V AC $\pm$ 10% Type 1RH24 110 V AC $\pm$ 10% Type 1RH110 230 V AC $\pm$ 10% Type 1RH230 400 V AC $\pm$ 10% Type 1RH400 12-36 V DC Type 1RH36C	2 x 230V $\pm$ 10%	
PROTECTION CLASS		IP20	
INSULATION CLASS		II	
ACCURACY	1RH24, 1RH110, 1RH230, 1RH400 1RH36C	1/100h (36 sec) 1/10h (6 min)	2 x 1/100h (36 sec)
TEMPERATURE		operating -10°C $\div$ +55°C / storage -25°C $\div$ +70°C	
DISPLAY	AC DC	99999,99 h 99999,9 h	2 x 99999,99 h
DIMENSIONS		2 DIN modules	
WEIGHT Kg.		0,10	0,12
For the connection diagram see page 90			

## MULTIVOLTAGE HOUR RUN METER



### 1RSA

BURDEN	0,5 W
FREQUENCY	50/60 Hz
POWER SUPPLY	12V AC and DC or from 24 to 250V AC and DC
PROTECTION CLASS	IP20
INSULATION CLASS	II
ACCURACY	1/100h
TEMPERATURE	operating -10°C $\div$ +55°C / storage -25°C $\div$ +70°C
DISPLAY	99999,99 h
COUNTING INPUT	not insulated respect to the power supply
DIMENSIONS	1 DIN module
WEIGHT Kg.	0,08
For the connection diagram see page 90	

## ALARMS



### 1RSA

POWER SUPPLY	230 VAC
MULTI-USE EMPLOYMENT	
PIEZOELECTRIC TECHNOLOGY	
BURDEN	5 mA at 230VAC
ACOUSTIC POWER	84 db at 1 meter
DIMENSIONS	2 DIN modules
WEIGHT Kg.	0,19
For the connection diagram see page 89	

## EMERGENCY STATIC LAMP

### 1RLE

An emergency lamp which automatically switches on after the auxiliary power supply is interrupted, giving sufficient light to continue working at switchboards and similar locations.

The device is provided by two leds that inform about the working condition of the unit:

- Red light indicating level of charge
- Green light indicating fully charged and ready for use in the event of auxiliary power failure.

**STATIC ILLUMINANT ELEMENT WITH UNLIMITED DURATION (Absence of batteries, ecologic device) WITH HIGH LUMINOSITY INTENSITY (8000 mcd peak). The unlimited duration produces an ideal device for the use in the cases of the certainty of work when the auxiliary power supply is fundamental.**

POWER SUPPLY	230 VCA 50/60 Hz
WORKING TEMPERATURE	-20 °C $\div$ +70 °C
USEFUL AUTONOMY ILLUMINATION	2 h
RECHARGE TIME	2 h
DIMENSIONS	2 DIN modules
WEIGHT Kg.	0,15
For the connection diagram see page 92	





## 1REP

■ STANDARDS	EN60669
■ BURDEN	< 2W
■ FREQUENCY	40 ÷ 60 Hz
■ AUXILIARY POWER SUPPLY	230V( ±10%)
■ TEMPERATURES	operating 0°C ÷ +50°C / storage -25°C ÷ +70°C
■ SIGNALLING LED	red led light-on
■ FUNCTION SELECTOR	clockwise:
■ NOMINAL CURRENT	always OFF - Automatic 1 - Automatic 2 - always ON
■ MAXIMUM CURRENT	16A
■ POWER	2 times the $I_n$ (equal to 32A) for 0,5 seconds
■ N.O. CONTACT RELAY	2300W AC1 - 1500W AC3
■ DIMENSIONS / WEIGHT kg.	16A - 250VCA AC1
■ For the connection diagram see page 89	1 DIN module / 0,80

- "Step-step relay" permits, by using push-buttons positioned on various rooms, to light-on (by the first pressure) and to light-off by the further pressure of the same button, the load connected to the relay (example: lights, ventilation).
- Function selection is made by a rotating selector as per the following drawing:



- with selector in "OFF" position the relay never will be activate.
- with selector in "AUTO 1" position the relay will be activate and deactivate by every short pressure of external push-button (pressure less than 3 sec)
- with selector in "AUTO 2" position the relay will be activate every long pressure of external push-button (pressure more than 3 sec) and will be deactivate every short pressure of external buttons (pressure less than 3 sec)
- with selector in "ON" position the relay will be always activate.

- The device permits the use of bright push-buttons (neon lamp incorporated) with the minimum burden of 0,1A relative to this function.
- This relay, when powered (L1-N) and if in "AUTO" mode, has the internal relay in N.O. (rest) condition.
- This relay works with 3 wires or 4 wires connection, independently by the electrical contest, **simplifying its connection**.

## "AUTO 1" and "AUTO 2" FUNCTION EXAMPLES

- Assume to have a light installation with double lamp. It is possible to connect one electronic step-step relay in "AUTO 1" mode to the first lamp and another in "AUTO 2" mode to the second lamp with a push-button command. By a short pressure light-on and light-off one lamp only (low brightness) or by a long pressure (recognized by both relays) light-on both lamps (high brightness), further, by a short pressure both lamps can be lighted-off.

It is also possible:

- by short pressure, light-on the lamp linked to "AUTO 1" after, by a long pressure, light-on "AUTO 2" lighting-off "AUTO 1".
- by short pressure light-off "AUTO 2" and light-on "AUTO 1"
- by further short pressure light-off "AUTO 1" while "AUTO 2" is already light-off.

In this way it is possible to obtain every combination about light-on and light-off of 2 lamps.

In any case by a series of short pressures the lamps can be light-off completely.

## NOTE:

In "AUTO 1" mode, the functioning of this device is equivalent to an electromechanical relay normally in commerce that have the same function.

## STAIRS LIGHT ELECTRONIC RELAY



## 1RET

■ STANDARDS	EN60669
■ BURDEN	< 2W
■ FREQUENCY	40 ÷ 60 Hz
■ AUXILIARY POWER SUPPLY	230V( ±10%)
■ TEMPERATURES	operating 0°C ÷ +50°C / storage -25°C ÷ +70°C
■ SIGNALLING LED	red led light-on
■ ROTATIVE SELECTOR	permits to select the light-on time of the lamps (from 30 sec to 15 min)
■ FRONTAL PUSH BUTTON	permits to select the function "always ON" or "Timer"
■ NOMINAL CURRENT	16A
■ MAXIMUM CURRENT	2 times the $I_n$ (equal to 32A) for 0,5 seconds
■ N.O. CONTACT RELAY	16A - 250VCA AC1
■ DIMENSIONS / WEIGHT kg.	1 DIN module / 0,80
■ For the connection diagram see page 89	

- This device permits, by using push-buttons positioned on various rooms, the temporized light-on of lamps connected to it.



- Functioning time can be selected between 15 sec to 15 min turning the proper rotative selector.
- By pressing one of the connected push-button, lamp will light-on. Further pressure, with light-on lamp, generates a new cycle of light-on time extending the brightness time.
- This relay forecast the function "end-time notice" that carry out by a short light-off and immediate light-on of lamps 30 seconds before the end of the selected time. This fact permits the prolongation (by pressing the nearest push-button) the brightness time.

- The device permits the use of bright push-buttons (neon lamp incorporated) with the minimum burden of 0,1A relative to this function.
- This relay permits to select a 1 hour time cycle, simply maintaining pressure on any push-button for more than 5 seconds. Lamp lights-on at the beginning of the pressure of push-button and after 5 seconds of continuous pressure the device informs about learning of 1 hour time selection by a short light-off and immediate light-on of lamp. This cycle, once activate, goes out and the relay works again with the previously selected time.
- When powered (L-N) it makes autonomously a time cycle as help from a possible black-out.
- This relay works with 3 wires or 4 wires connection, independently by the electrical contest, **simplifying its connection**.
- By pressing the frontal push-button when the temporization is activate, it is possible to stop it forcing the lamps light-off. If lamps are light-off it is necessary light-on them permanently and after by further pressure, light-off them.