STABILISED SUPPLIES BATTERY CHARGERS

1RAL12 - 1RAL24

The 1RAL12 and 1RAL24 delivers 1A continuously to batteries that are completely discharged. Once batteries are fully charged, the 1RAL12 and 1RAL24 will maintain the charged state by intermittent recharges as required.
The specification of the 1RAL12 and 1RAL24 includes internal protection against short circuits, inversion of polarity and protection against overheading while limiting the supply of current until normal operating temperatures are restored.

		1RAL12	1RAL24
POWER SUPPLY		230V ± 10%, 50/60 Hz	
STABILISED OUTPUT	as supplier	12 VDC ± 2% - 0,5 A	24 VDC ± 2% - 0,25 A
OUTPUT	as battery charger	13 VDC - 1 A	26 VDC - 0,5 A
GALVANIC SEPARATION		between input and output	
PROTECTED AGAINST SHORT-CIRCUITS, THE POLARITY INVERSIONS AND OVERTEMPERATURE			
THESE DEVICES CAN BE CONNECTED IN PARALLEL			
example: with two suppliers in **parallel** there is a stabilised output at		12 V - 1 A	24 V - 0,5 A
DIMENSIONS		3 DIN modules	
WEIGHT Kg.		0,40	

For the connection diagram see page 92

1RAL122 - 1RAL242

These supplies are made by an integrated transformer and an electronic accessory switching technology, high efficiency, low losses, low thermic dispersions and low emmission of noises through the net.
The 1RAL122 and 1RAL242 delivers 2A continuously to batteries that are completely discharged. Once batteries are fully charged, the 1RAL122 and 1RAL242 will maintain the charged state by intermittent recharges as required.
The specification of the 1RAL122 and 1RAL242 includes internal protection against short circuits, inversion of polarity and protection against overheading while limiting the supply of current until normal operating temperatures are restored.

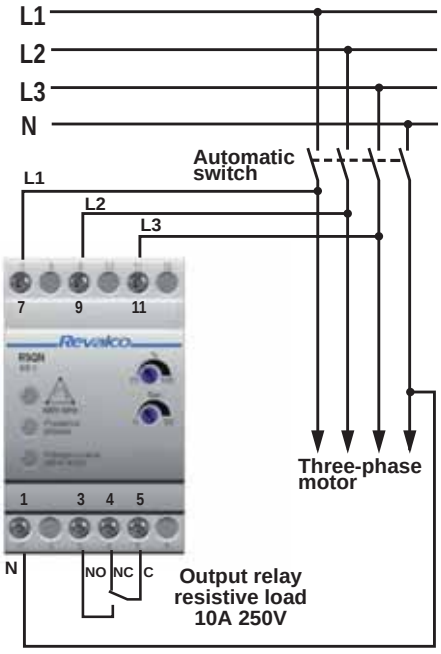
	1RAL122	1RAL242
POWER SUPPLY	230V ±10%	
POWER	55VA	
OUTPUT VOLTAGE	14 VAC (2A)	28 VAC (2A)
STABILISED OUTPUT	13 VDC - 2 A	26 VDC - 2 A
GALVANIC SEPARATION	between input and output	
PROTECTED AGAINST SHORT-CIRCUITS, POLARITY INVERSIONS AND OVERTEMPERATURE		
SIGNALLING LED	light-on green led = ON	
OUTPUT PULSE NO (0,5 A / 40 VDC) FOR REMOTE SIGNAL		
DIMENSIONS	8 DIN modules	
WEIGHT Kg.	0,50	

For the connection diagram see page 92

CONNECTION DIAGRAMS

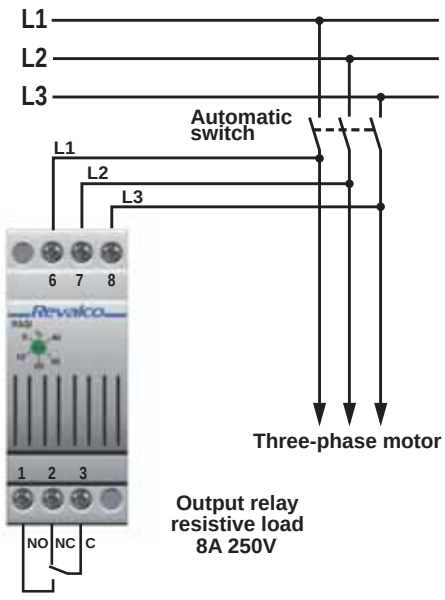
1RSQN

To control the correct sequence and presence of the three phases, neutral and control of the voltage values within the limits (70-100%)



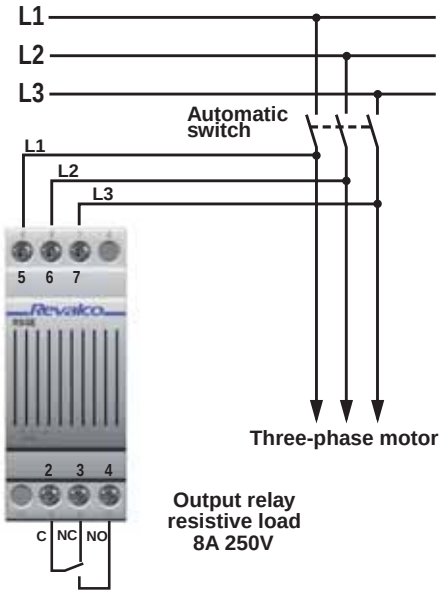
1RSQI

To control the correct sequence and presence of the three phases



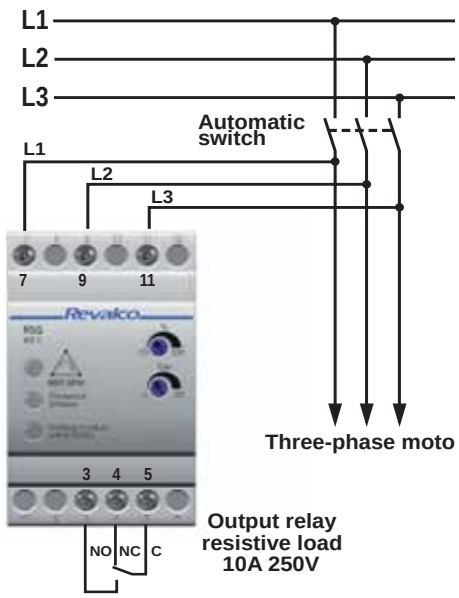
1RSQE

To control the correct sequence and presence of the three phases



1RSQ

To control the correct sequence and presence of the phases and the control of the voltage values within the limits (70-100%)

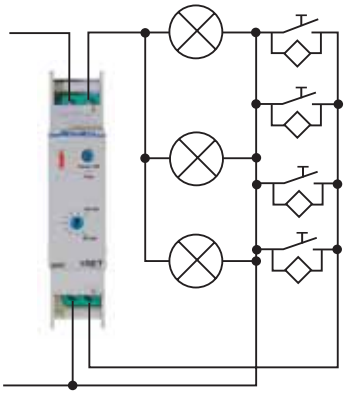


1RSA

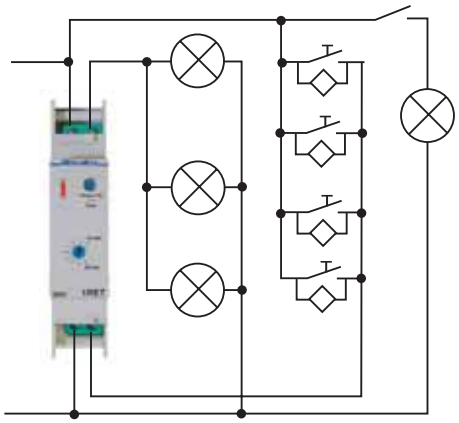
Alarm

1RET

Connection examples



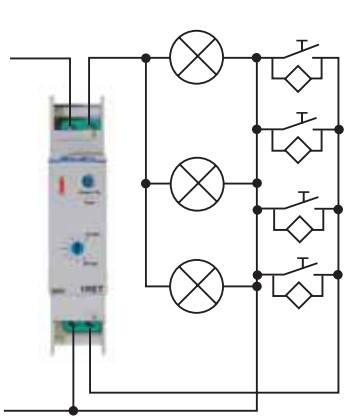
3 wires connection



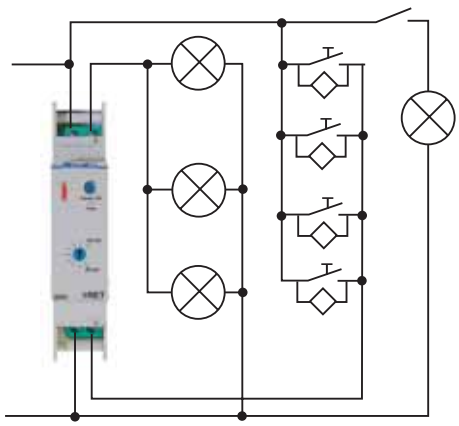
4 wires connection

1REP

Connection examples



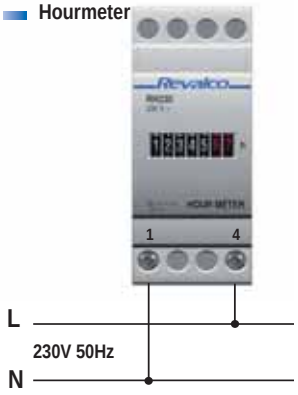
3 wires connection



4 wires connection

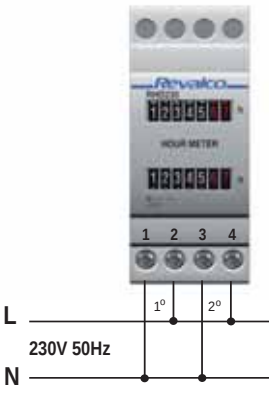
1RH24 - 1RH110 - 1RH230 - 1RH400 - 1RH36C

Hourmeter

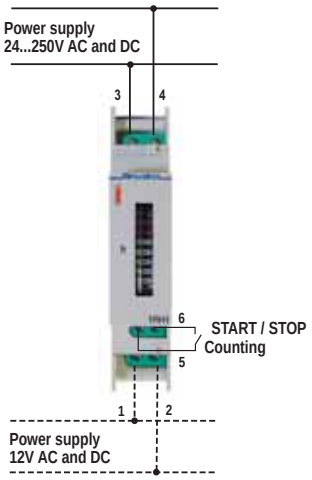


1RHD230

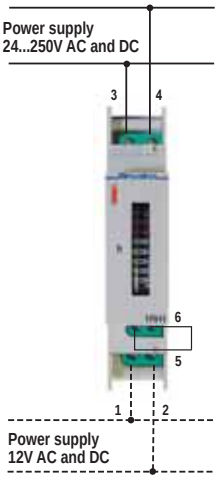
Double hourmeter



1RH1



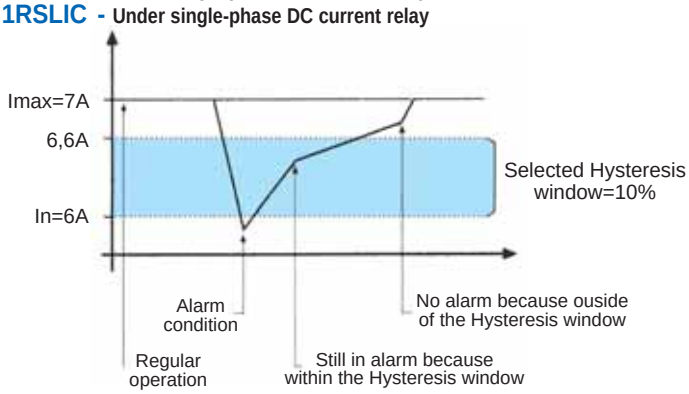
START = closed contact, counting phase
STOP = open contact, not counting phase



If the continuous conting is necessary, make a bridge between terminals 5 and 6

EXPLANATION OF HOW A MINIMUM AND MAXIMUM CURRENT RELAYS WORK

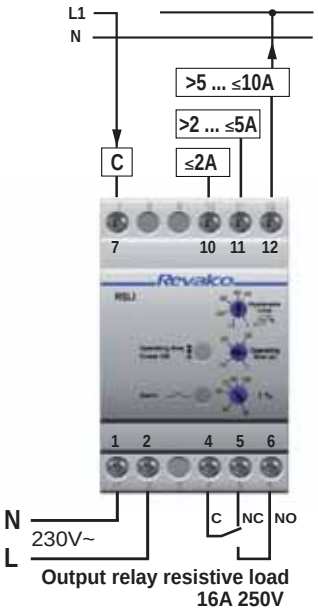
1RSLI - Under single-phase AC current relay
1RSLIC - Under single-phase DC current relay



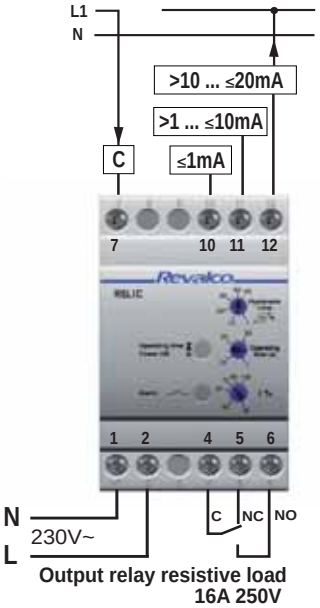
Supposing to control a load with the following ratings:
In=7A rated regular operating current
Imin=6A current at which 1RSLI relay is requested to trip

Connect as shown in diagram (terminals 7 and 12 as Imin=6A)

1RSLI



1RSLIC



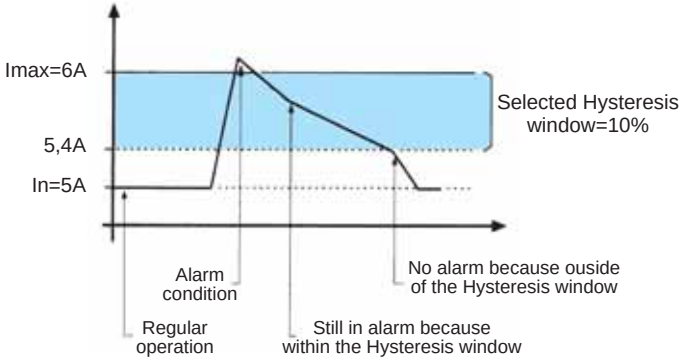
Set "Current %" trimmer (Ex. to 60%) since:

$$I\% = \frac{6\ (I\ min)}{10\ (I\ limit)} \times 100 = 60\%$$

Set "Hysteresis %" trimmer to 10%. Obtain a tripping window of 6 to 6,6 A (6A+10% = 6,6A).
The relay will trip at 6A and regular operation will start again at 6,6A.

Set "Operating time" trimmer. This makes it possible to delay the relay tripping time from 1 to 30 seconds; during the delay the "Power ON" led will flash, at the end of the delay the "Alarm" led will turn on and the relay will trip.

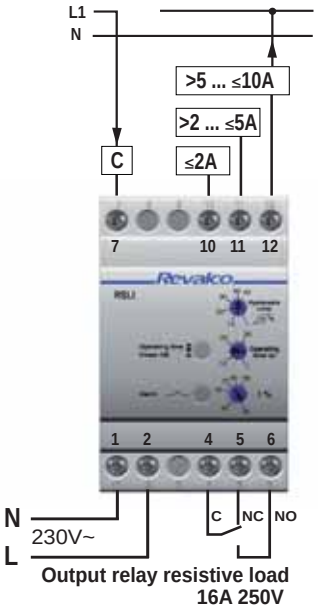
1RSHI - Over single-phase AC current relay
1RSHIC - Over single-phase DC current relay



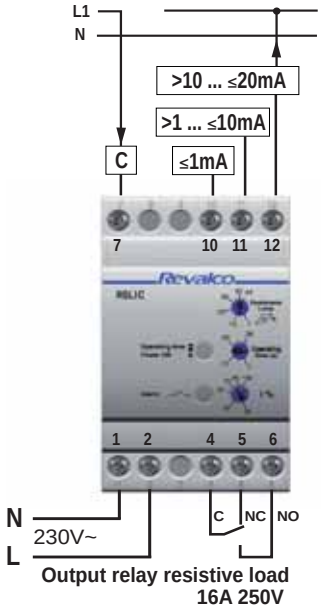
Supposing to control a load with the following ratings:
In=5A rated regular operating current
Imax=6A current at which 1RSHI relay is requested to trip

Connect as shown in diagram (terminals 7 and 12 as Imax=6A)

1RSHI



1RSHIC



Set "Current %" trimmer (Ex. to 60%) since:

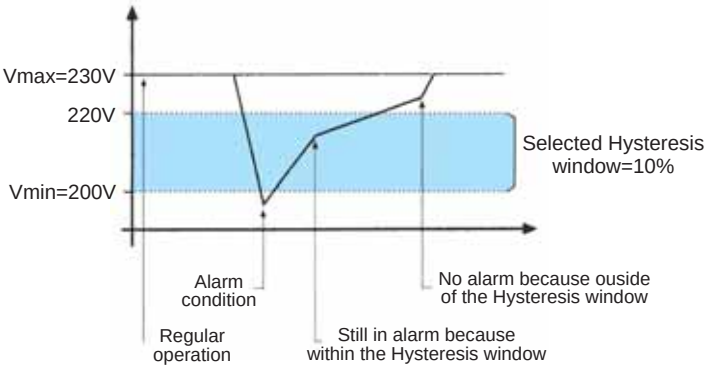
$$I\% = \frac{6\ (I\ max)}{10\ (I\ limit)} \times 100 = 60\%$$

Set "Hysteresis %" trimmer to 10%. Obtain a tripping window of 5,4 to 6 A (6A-10% = 5,4A).
The relay will trip at 6A and regular operation will start again at 5,4A.

Set "Operating time" trimmer. This makes it possible to delay the relay tripping time from 1 to 30 seconds; during the delay the "Power ON" led will flash, at the end of the delay the "Alarm" led will turn on and the relay will trip.

EXPLANATION OF HOW A MINIMUM AND MAXIMUM VOLTAGE RELAYS WORK

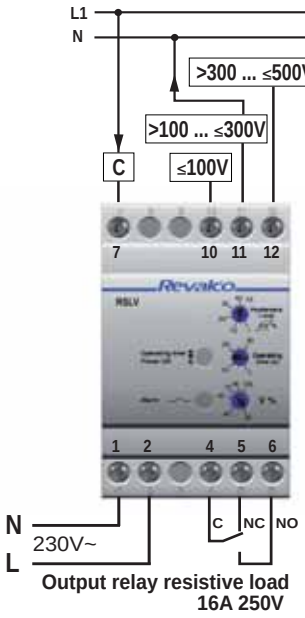
1RSLV - Under single-phase AC voltage relay
1RSLVC - Under single-phase DC voltage relay



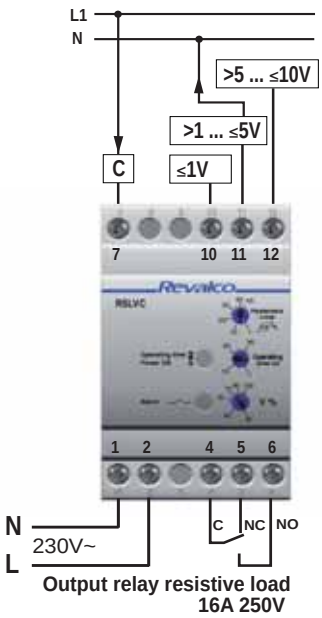
Supposing to control a load with the following ratings:
Vn=230 VCA rated regular operating voltage
Vmin=200 VCA voltage at which 1RSLV relay is requested to trip

- Connect as shown in diagram (terminals 7 and 11 as Vmin=200V)

1RSLV

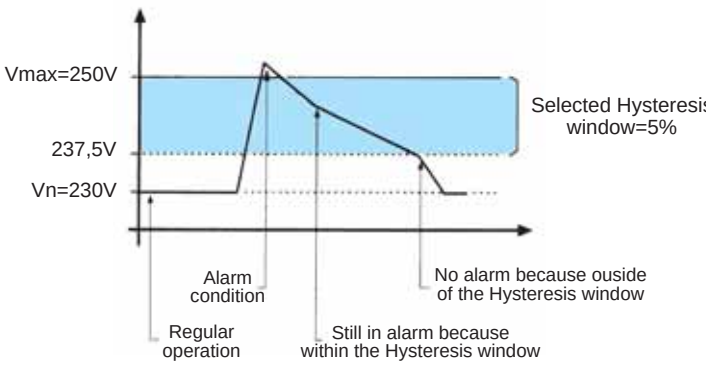


1RSLVC



- Set “Voltage %” trimmer (Ex. to 66,7%) since:
  $V\% = \frac{200\ (V\ min)}{300\ (V\ limit)} \times 100 = 66,7\ \%$
- Set “Hysteresis %” trimmer to 10%. Obtain a tripping window of 200 to 220V (200V+10% = 220V).
  The relay will trip at 200V and regular operation will start again at 220V.
- Set “Operating time” trimmer. This makes it possible to delay the relay tripping time from 1 to 30 seconds; during the delay the “Power ON” led will flash, at the end of the delay the “Alarm” led will turn on and the relay will trip.

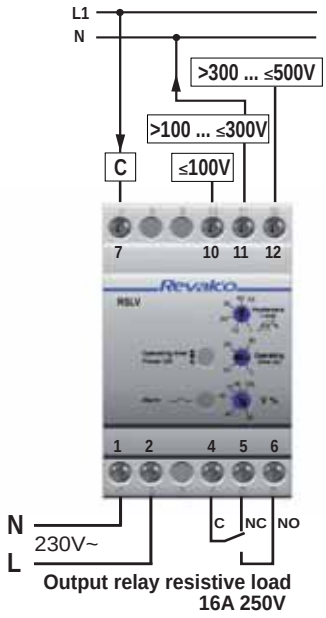
1RSHV - Over single-phase AC voltage relay
1RSHVC - Over single-phase DC voltage rela



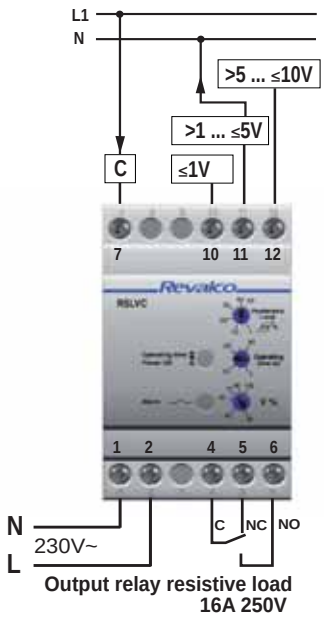
Supposing to control a load with the following ratings:
Vn=230 VCA rated regular operating voltage
Vmax=250 VCA voltage at which 1RSHV relay is requested to trip

- Connect as shown in diagram (terminals 7 and 11 as Vmax=250V)

1RSHV



1RSHVC



- Set “Voltage %” trimmer (Ex. to 83,33%) since:
  $V\% = \frac{250\ (V\ max)}{300\ (V\ impostata)} \times 100 = 83,33\ \%$
- Set “Hysteresis %” trimmer to 5%. Obtain a tripping window of 237,5 to 250V (250V-5% = 237,5V).
  The relay will trip at 250V and regular operation will start again at 237,5V
- Set “Operating time” trimmer. This makes it possible to delay the relay tripping time from 1 to 30 seconds; during the delay the “Power ON” led will flash, at the end of the delay the “Alarm” led will turn on and the relay will trip.

1RCI

- Insulation control relay

Switch to the left side = 300-800 kΩ

Switch to the right side = 30-300 kΩ

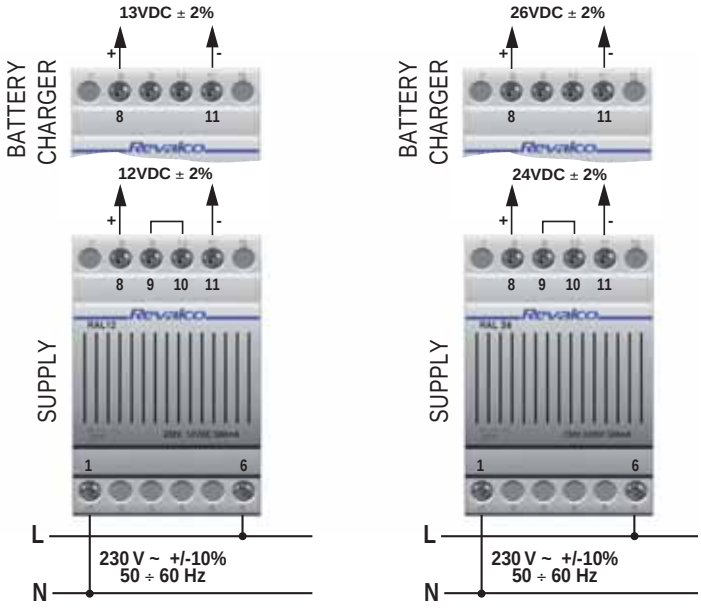
1RSV1224

- Over speed control relay

10A (cosφ1)

1RAL12 - 1RAL24

- Stabilised supply: connect terminals 9 and 10
- Battery charger: NO connection between terminals 9 and 10

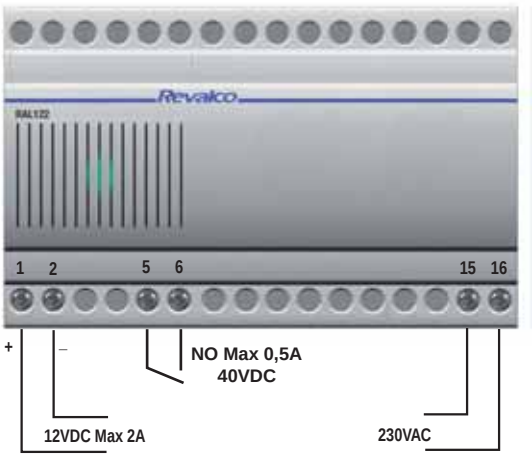


1RLE

- Static emergency lamps

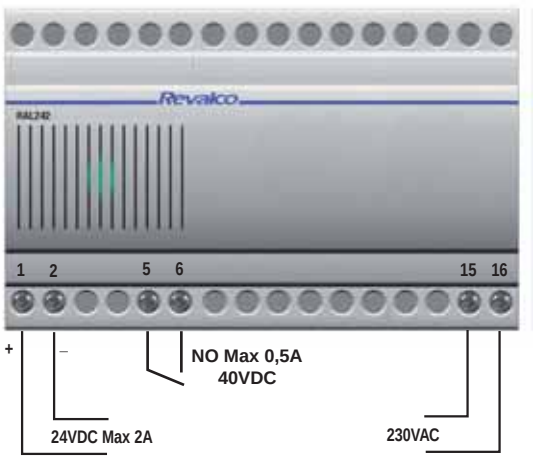
1RAL122

- Stabilised supply 2A, output 12 VDC
- Battery charger



1RAL242

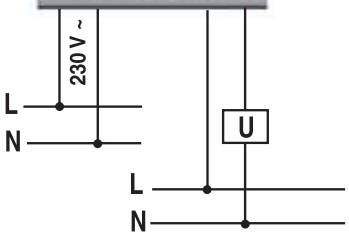
- Stabilised supply 2A, output 24 VDC
- Battery charger



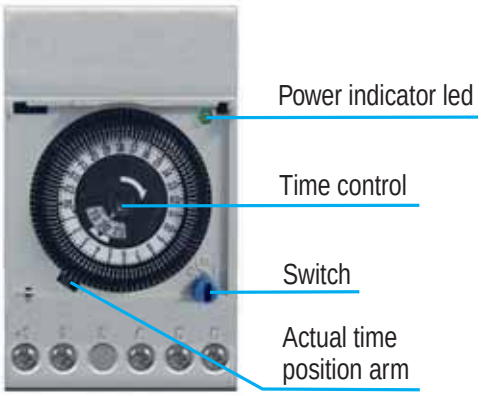
1ROM1R - 1ROM1RE - 1ROM7R

Analogue time switches

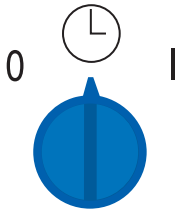
Contact
16A-250V
(2A for inductive load)



Functions



Manual selector

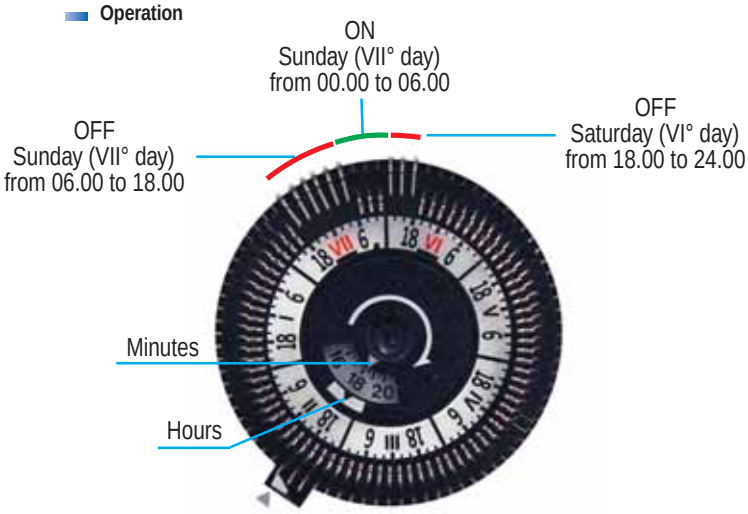


0 = Permanent OFF

I = Permanent ON

= Automatic

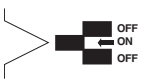
Operation



1ROM1DR

Analogue time switches

- Move the pins to the right (Off) or the left(On), as per the neaded times of connection on which the contact 1-2 will be closed.



- Turn the dial till the index is on current time
- Manual operating switch 2 positions:
  Automatic
  Permanent ON

1ROM2ER

Digital time switches