RDA-RT Electronic Earth-leakage Protection Relay



Código *code*	Tipo *Type*	Sensibilidad (A) Sensivity	Retardo disparo (s) *Tripping delay*
D1L0110900	RDA-RT	0,03-0,1-0,3-0,5-1-3 por ajuste directo/*by direct setting* 5-10-30 por/*by* SETUP	INS-SEL-0,02-0,1-0,2-0,3-0,4-0,5-0,75-1 por ajuste directo / *by direct setting* 3-5-10 por/*by* SETUP

GENERAL DESCRIPTION

Super-inmunized Type A electronic relay. Built-in core balance transformer, Ø28 mm. Device with self-reclosing system. Symbol REC on display. It has programmables relays, 3 outputs. Main trip and 2 pre-alarm signals. It has 1 free voltage input for external ON / OFF. Mounting in DIN rail 46277 (En50022) or PANEL 72x72 by means of accesories M5ZFF1. Displays setting values and instantaneous earth leakage current value (TRMS)

PRELIMINARY CONSIDERATIONS

CHECKS ON RECEPTION

On receving the instrument, check the following points:

- The unit's specifications are the same as those on your order.
- Check that the device has not suffered any damage during transport.

You can download more information from Vector website, www.vectorenergy.com

SAFETY PRECAUTIONS

The staff using or handling the unit must follow the common safety measures and warnings included in the instruction manual.

The RDA-RT unit has been specifically designed for its installation in a electric board, enclosure to a DIN rail or mounted in panel by means of accesories. It has a flashing green led (ON) when it is operation and, therefore, it shows that there is voltage and current in the electronic circuit. The user must make sure that the equipment is not conected to the power supply at all the times, even when the LED is not flashing.

INSTALLATION AND START-UP

The user must take into account and observe the informations and warnings included in this instruction manual to guarantee the correct operation of the equipment and comply whit the safety specifications. The equipment must not turned on until is fully installed in the electrical panel.

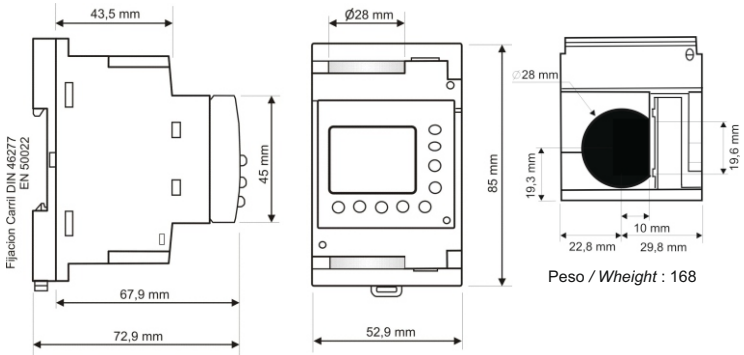
¡ IMPORTANT !

The unit´s protections systems might not be effective if the unit is used for purpose other than those specifications by the manufacturer.

Disconnect the equipment from the power supply when the unit´ssafety protection systems are not working or there are signs of a problem (in case of visible damage). In this case, contact a qualified technical service or with our own technical service (TAS).

INSTALLING THE EQUIPMENT

DIN rail installation. On the inside of the hole must pass all live conductors supplyng electrical energy to loads or part of the installation which requires it to earth leakage protection with this device. In single-phase installation (phase and neutral, L and N), three phase - 3 wires (three phases, L1, L2 and L3) or three phases - 4 wires (L1, L2, L3 and N). Depending on the level of wiring insulation can be pass through the hole of 28 mm (inner diameter) 4-wire 35 mm² of section, although it advisable is 25 mm². All connections should be inside the electrical board. Please note that with the connected equipment, terminals and opening covers or removing elements, can give access to dangerous parts to touch. The equipment must not be used until it has completely finished installation. The unit must be connected to a power supply circuit protected by fuses in line with the range and power consumption. In turn, the supply circuit must be provided with a circuit breaker or equivalent device to disconnect the equipment from the mains. During the wiring cable is advisable a section permitted between 1 - 1.5 mm². A recommended torque of 0.5-0.6 Nm. Cable Stripping Tools length 7 mm.

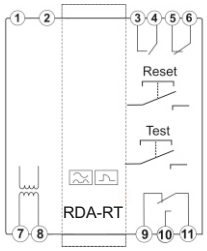


Peso / *Wheight* : 168

Power supply	Operating conditions	Safety
Voltage 230 Va.c.+/- 30% Frequency 50/60 Hz Burden 4,5 VA	Temperature -20...70 C Relative humidity 95% Max. Altitude 2.000 m Protection IP20	Category III - 300 Vac (En61010) Double - insulated electric shock protection Class II- UL 1053 UL LISTED Certification - IEC 60755 - IEC 60947-2 Annex M

CONNECTIONS BY MEANS OF PLUG-IN CONNECTORS

TERMINAL DESCRIPCIÓN		FEATURES
1 - 2	EXTERNAL INPUT TRIP / RECLOSE	Free voltage, not isolated
3	PRE-ALARM OUTPUT RELAY, NO	Rated current: 0,25 Ac.a. Rated voltage: 230 Vc.a. Rated Load: 62,5 V·A
4	PRE-ALARM OUTPUT RELAY COMMON	
5	LOCKED OUTPUT RELAY, NC	
6	LOCKED OUTPUT RELAY COMMON	
7	SUPPLY 230 Va.c. (Phase or Neutral)	Protected by varistor: 420 Vc.a. - 10 Ac.a.
8	SUPPLY 230 Va.c. (Neutral or Phase)	
9	TRIPPING OUTPUT RELAY, NC	Rated current: 5 Ac.a. Rated voltage: 250 Vc.a. Rated Load: 1.250 V·A
10	TRIPPING OUTPUT RELAY, NA	
11	TRIPPING OUTPUT RELAY COMMON	
12	WITHOUT USE	



Technical Assistance Service (T.A.S)

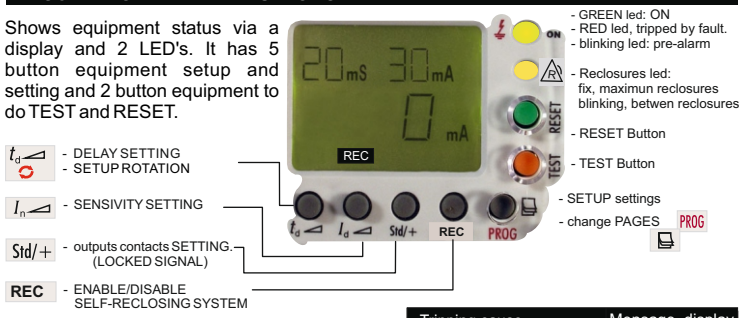
If you have any doubts about the running of the equipment or any faults, contact the service staff.

C/ Montcada 7, - Pol. Ind. Les Pereres
08130 Santa Perpètua de Mogoda (Bacelona) SPAIN

Tel: (+34) 93 574 82 06
email: info@vectorenergy.com
www.vectorenergy.com

DESCRIPTION LED AND BUTTONS

Shows equipment status via a display and 2 LED's. It has 5 button equipment setup and setting and 2 button equipment to do TEST and RESET.



INDICATION BY LED AND DISPLAY

- **MAIN TRIP RELAY.** LED and display signals a change of status by changing from green to red. Display event type messages or values.
- **PREALARM SIGNAL.** The LED green is blinking betwen green and red.
- **BETWEN RECLOSURES.** LED is blinking
- **LOCKED BY RECLOSURES.** The yellow LED is fixed. The equipment arrives al maximun number of reclosures established by the self-reclosing sequence. Red display shows the cause.
- **No OF RECLOSURES.** By short press on the display shows the number of reclosures by earth leakage faults, partial and total number. The partial number are floating pages. In these pages it can configure the self-reclosing sequence by press button.

Tripping cause	Mensage display
Test	TESt
Remote signal trip/reclose	EXT
Earth leakage fault	DIF / value

Other mesages by display	
SAVE	Enter setting values
EXIT	Exits setting mode
OVR	Value reading off scale

RECLOSING THE EQUIPMENT.

- BY **TRIP LOCKED BY RECLOSURES**
  1. Automatic (earth leakage fault or manual). Is REC shown on display.
  2. Manual reclose by pushing button **RESET**.
  3. External reclose sytem by remote or communications signal. When it forces a trip by remote signal, only it can reclose by another remote signal. In the case 2 and 3 the partial counters of reclosures returns to a zero.

¡ IMPORTANT !

The relay only self-recloses after a trip by earth leakage current fault. The Test (red button) only verifies the relay trips the protection. It recloses only by manual pressing RESET button.

MAIN RELAY PARAMETER SETTING (t_d, I_d and std/+)

- **SETTING TRIP DELAY**, t_d. The PROG message and two values appear on the screen after pressing the t_d button. The lowest value indicates the current set value and the highest is the values to be configured which are displayed by pressing ↻. The selected value to be saved is displayed by showing the message SAVE.
- **SENSITIVITY SETTING,** I_d. The same operation as above setting is carried out by pressing I_d.
- **SIGNALLING CONTACTS RELAY STATE, std/+** . Select the default position of the relay contacts 4-5-6 that indicates the situation of locked by reclosures of the device . In (Std) 4-6 NO / 4-5 NC and (+) 4-5 NC / 4-6 NO and appears the symbol in display +.
- **SELF-RECLOSING SYSTEM, REC**. In reclosure partial numbers by press **REC** button we configure the self-reclosing sequence referred at the page which it's showing us. By default is configured nº1 by earth leakage protection.

SREC	No RECLOSURES	TIME SEQUENCES	RESET TIME
0		DISABLED	
1	6	8, 16, 30, 59, 115 y 224 s	15 minutes
2	30	20, 40 s y 5 min. to the end.	15 minutes
3	8	30 s, 1, 2, 3, 4, 5, 6 y 7 min	15 minutes
4	6	10, 20, 30, 60, 130 y 600 s	15 minutes
5	6	2, 4 y 8 min. to the end.	15 minutes
6	7	30 s, 1, 2, 3, 4, 8 y 16 min	30 minutes
7	10	1 min	30 minutes
8	10	90 s	30 minutes
9	8	2, 4 y 6 min. To the end.	15 minutes
10	10	3 min	30 minutes
11	7	2, 4, 8, 16, 32, 32 y 32 min	15 minutes
12	31	2, 4 y 6 min. to the end.	60 minutes
13	3	2, 4 y 8 min	15 minutes
14	...	...	...

SETUP SETTINGS PROG

With the **PROG** button the submenus are browsed and with the ↻ button the values to be selected are displayed.

Press **PROG** to enter the value. The equipment configures the value by displaying "**SAVE**" on the display and then exits Setting Mode. If the keypad remains inactive for a certain time, the equipment automatically exits Setting Mode and displays

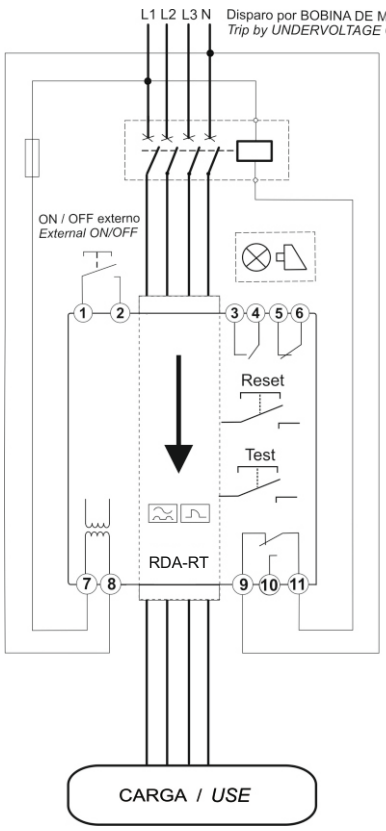
Default values in *SETUP*

- **FREQ**, (**50**) frecuency (Hz)
- **LIM**,(**1s, 3A**), range of values (Id / td)
- **ALAR**, pre-alarm.
  - . Id (**OFF**), It´is not pre-alarm.
  - . Td (**20 ms**), time.
  - . SP (**NO**),contact states. 3-4 [**NA**/NC]
  - .AU (**AutO**), Relay reclaim the state.
- **RSTC**, (**NO**), Reset the partial reclosures.

FREC			50 Hz / 60 Hz
LIM			10 s, 30 A / 1 s, 3 A
ALAR	I_d	Pre-alarm current %	OFF, 50, 60, 70, 80, MAIN
	t_d	Delay pre-alarma seg.	0,02, 0,1, 0,2, 0,3, 0,4, 0,75, 1, 3
	SP	Contact NO/NC	NO / YES
	AU	Reconectable	AUTO / MANU
RSTC			NO / YES

Button PROG →, Button ↻

WIRING DIAGRAM





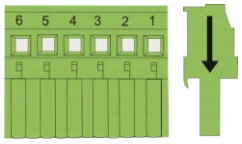
Earth leakage protection and self-reclosing system by means of external breaking element asociated to output contacts 9-11.

CONTACTOR

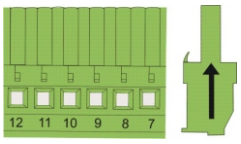
SELF-RECLOSING SEQUENCES SETUP



ACCESORIES



PLUG IN
CONNECTORS





SETUP MENU