Electron

THERMAL RELAY – RT-49

Manual

INDEX

INTRODUCTION

The RT-49 Relay is used for thermal protection of transformers and motors (ANSI-49) through PTC sensors (DIN 44081 and DIN 44082), and can be connected in each of the 2 independent inputs up to 4 sensors in series, and for each input has a NAF relay that operates when the temperature of the PTC is reached that can also be checked on the front of the instrument through indicative LEDs.

The RT-49 is equipped with a system of continuous verification of the integrity of the sensors that indicate any type of failure or rupture in the sensors through LED on the front of the instrument and also has a unique test system where the operator at any time can operate the relays without the need to raise the temperature, in order to check your installations and operation of alarms in the control room.

The RT-49 is manufactured under the strictest quality standards and was designed thinking of bringing facilities to the designers and assemblers of panels that use them, its box manufactured in ABS is very compact (22.5mm) which considerably reduces the space in the project, also has an exclusive system of fitting of electrical terminals (connectors) that facilitate in the moments when it is necessary to disconnect the terminals for tests of voltage applied in the transformer and maneuvers.

MAIN FEATURES

- Universal Power from 48 to 265 Vdc/Vac;
- Operating Temperature: -10°C to +70°C;
- 2 inputs for PTC sensors (DIN 44081 and DIN 44082);
- Up to 4 sensors connected in series per input;
- 2 NAF relays of 10 A at 200 Vac or 0.5Amp at 125 Vdc to operate up to 100,000 times;
- Insulation of 1.5KV / 60 Hz / 1 min.
- Compact Box with 22.5x100x133.5 mm in ABS for DIN rail 35 mm;
- Connectors with exclusive Pluggable System;
- Easy Installation and Application;
- 2 years warranty;

TYPE TESTS CARRIED OUT

- Applied Voltage (IEC 60255-5): 1.5 kV / 60 Hz / 1 min. (Counter-earth);
- Immunity to Electrostatic Transients (IEC 60255-22-1): 2.5kV / 1.1 MHz / 2 sec. / 400 outbreaks/sec.
- Voltage Impulse (IEC 60255-5): 1.5 msec. / 5kV / 3 neg. and 3 posts. / 5 sec. interval

TECHNICAL DATA

Thermal Relay – RT-49	
Operating voltage range	28 to 265 Vdc/Vac.
Insulation 60HZ/1Min	2KV
Operating temperature	-10ºC to +70°C
Temperature measurement input	Supports up to 2 PTC sensors (DIN 44081 and DIN 44082)
Sensors connected in series	Up to 4 sensors connected in series per input
Relay output contacts	3 (PAL) Potential Free for Alarm Indication
Maximum Switching Voltage	250 Vac / Vdc
Maximum Driving Current	10 Amps.
Maximum current 220VAC	10 A
Maximum current 125VDC	0.5 A
Dimension	22.5x100x133.5 mm
Fixation	DIN rail 35 mm;

Table 1 – Technical data of the RT-49

DIMENSIONS

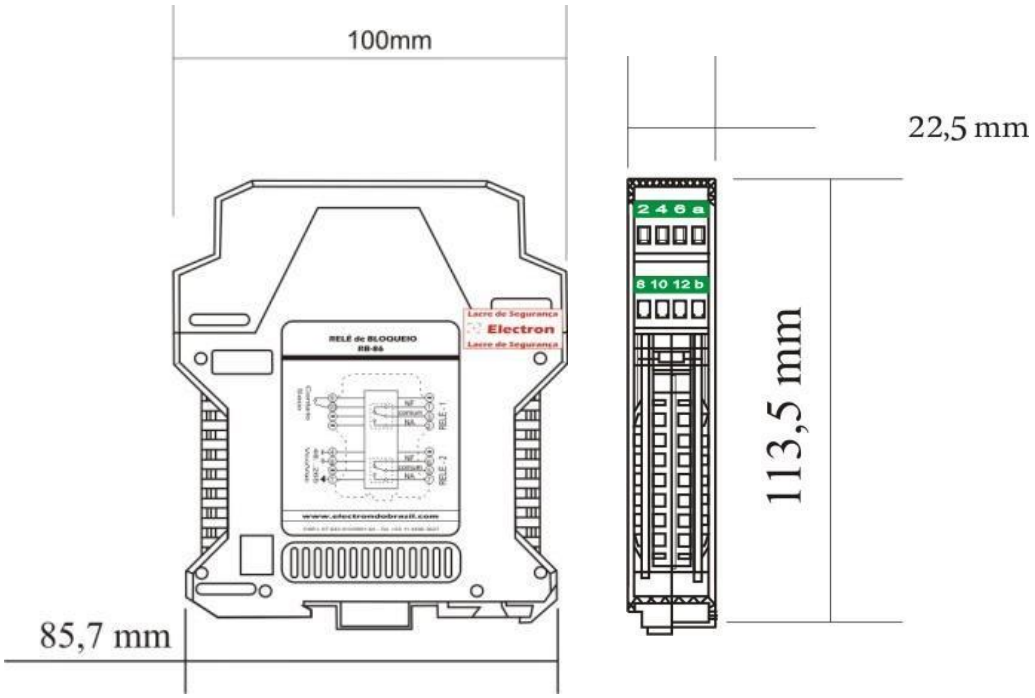
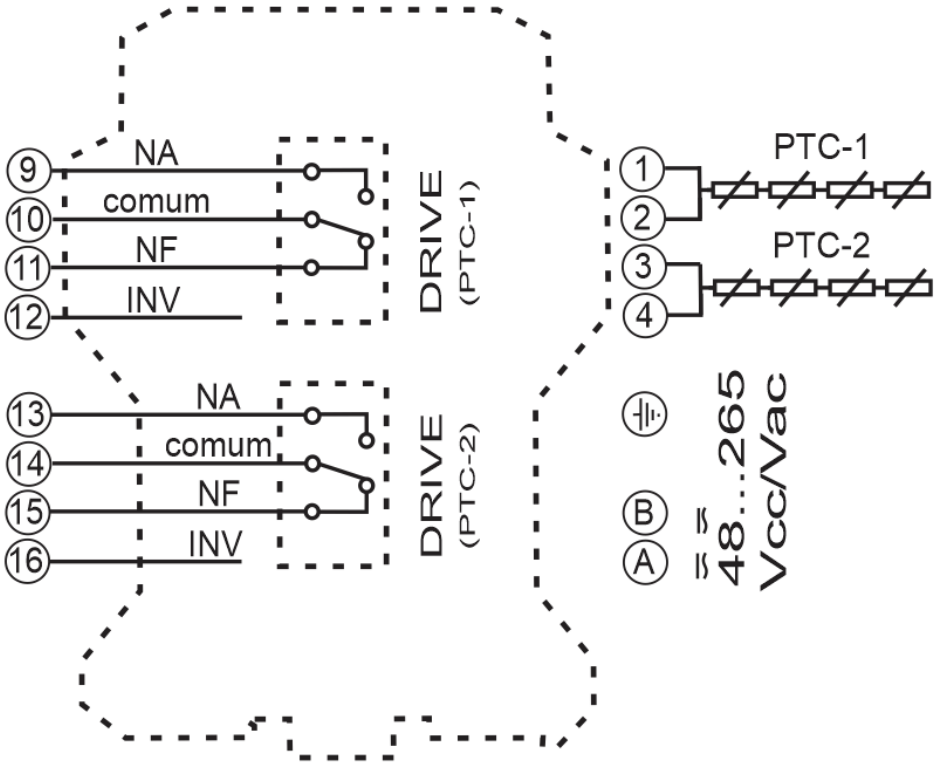


Fig. 1 – Dimension

CONNECTION DIAGRAM



NA (9-13) = Normally open contact.
Common (10-14) = Common input.
NF (11-15) = Normally closed contact.
INV (12-16) = Channel for inversion of the logics of the relays.
A-B = Food.
1-2 / 3-4 = PTC sensor input.
= Earth

Fig. 2 – Connection diagram

OPERATION CHART

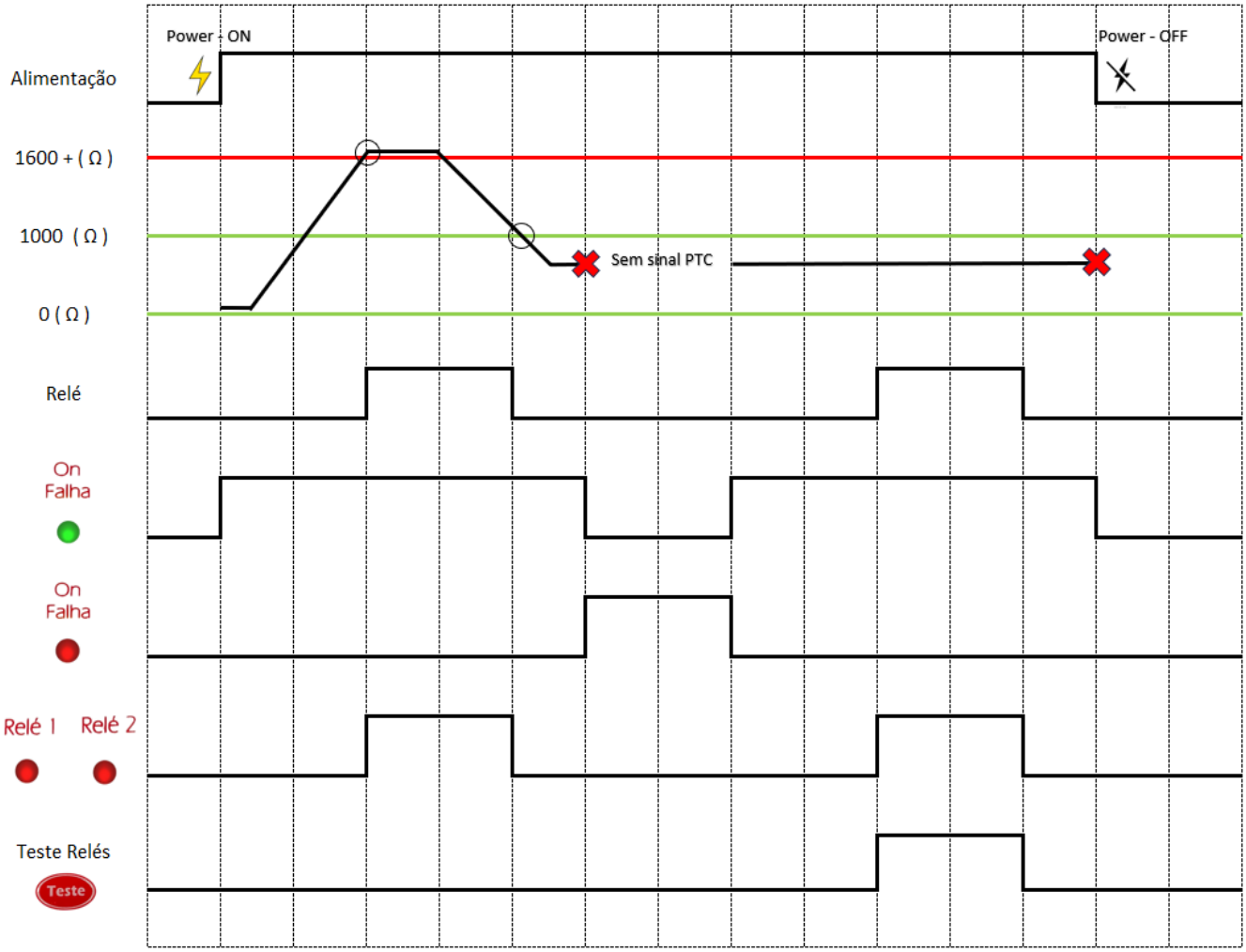


Fig. 3 – Operation chart

COLOR CODE PTC – CONF. DIN 44081 / DIN 44082

60	70	80	90	100	105	110	115	120	125	130
branco	branco	branco	verde	vermelho	azul	marrom	azul	cinza	vermelho	azul
cinza	marrom	branco	verde	vermelho	cinza	marrom	verde	cinza	verde	azul

135	140	145	150	155	160	165	170	180	190
vermelho	branco	branco	preto	azul	azul	azul	branco	branco	preto
marrom	azul	preto	preto	preto	vermelho	marrom	verde	vermelho	marrom

Fig. 4 – PTC color code

IMPORTANT RECOMMENDATIONS

Before putting into operation the equipment check the following recommendations:

1. All sensors as well as equipment must be grounded, do not use the same grounding point for power and for the sensor if it is used to ensure that there is no potential difference between them. Properly grounded sensors and power supply prevent malfunction or damage in cases of disturbances, surges, and inductions in the equipment.

2. Do not use the **RT-49** directly in the sun, whenever it is urged in the field it is important to have a panel with smoked glass, in order to filter the ultraviolet rays that attack the front polycarbonate, in this way the life of the equipment will be prolonged.

WARRANTY TERM

The **RT-49** Electron has a warranty term of two years from the date of sale consigned in the invoice, with coverage for any manufacturing defects that make it unsuitable or unsuitable for the applications it is intended for.

Disclaimer of Warranty

The warranty does not cover transportation expenses for technical assistance, freight and insurance for shipment of product with evidence of defect or malfunction. The following events are also not covered: Natural wear of parts by continuous and frequent use, damage to the outside caused by falls or improper packaging; attempted repair / violation of seal with damage caused by persons not authorized by Electron and in disagreement with the instructions that are part of the technical description.

Loss of Warranty

The product will automatically lose its warranty when:

• The instructions for use and assembly contained in this manual and the installation procedures contained in Standard NBR 5410 are not observed;

• Subjected to conditions outside the limits specified in the respective technical descriptions;

• Violated or repaired by a person other than Electron's technical team;

• The damage is caused by a fall or impact;

• Infiltration of water or any other liquid occurs;

• Overload occurs that causes degradation of components and parts of the product.

Use of Warranty

To take advantage of this guarantee the customer must send the product to Electron along with a copy of the purchase invoice duly packed so that there is no damage in transport. For an emergency service it is recommended to send as much information as possible, referring to the defect detected. This will be analyzed and subjected to full functional tests. The analysis of the product and its eventual maintenance will only be carried out by the technical team at the headquarters of Electron do Brasil.