



Catalogue

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INTRODUCTION

The **MoniTemp Temperature Monitor** was developed to supervise 3 (three) temperature channels simultaneously, it is used to protect and monitor transformers (ANSI 49) Dry or oil, machines, furnaces or any other type of process that requires high precision and reliability equipment, Monitemp also commands ventilation and heating (on / off), Alarms and Trip (shutdown) .

The **MoniTemp** was built obeying strict quality standards and uses state-of-the-art electronic components (SMD), its hardware was designed to withstand severe working conditions, and can be installed directly in power transformers and reactors, in panels in the yard of power substations, offshore platforms and chemical industries. Meets the levels of requirements, supportability and reliability according to IEC, DIN, IEEE, ABNT standards.

As signal input the **MoniTemp** allows 3 (three) Pt100 temperature sensors, 1 (one) universal analog output configurable between 0 to 10, 0 to 20 or 4 to 20 mA, which mirrors the highest temperature measured at the moment or any of the channels, just configure directly on the display, digital output (RS485) with Modbus RTU or DNP 3.0 protocol that allows access to all MoniTemp parameters including remote control of the drives in time It also has 3 (three) independent temperature setpoints for each sensor and 3 (three) isolated (NAF) and independent drive relays that can be used for alarm, shutdown and activation of fans or pumps, and also has 1 (one) relay for fault indication (watchdog).

The display mode on the **MoniTemp** display is fully configurable, being able to show the highest temperature at the moment, or fix on the display the channel temperature that the operator wants, or using the "SCAN" function, which is made a complete scan in all channels continuously. Through the front indicative LEDs and through the data communication port it is possible to identify which of the channels caused the alarm, the shutdown or the activation of the fans, all the functions and parameterizations are easily configured directly on the instrument panel or through the RS-485 communication port.

The MoniTemp is built in aluminum housing measuring 48x96x140mm, within the DIN standards for panel fixing.

MAIN FEATURES

- 4-digit high-luminosity LED display (red);
- Accuracy of 0.5% (FS) and indication of 1 decimal place;
- Temperature measuring range from 0 to 200°C;
- Compensated input for Pt100 3-wire sensors;
- RS-485 Digital Output with Modbus RTU or DNP 3.0 protocol;
- Auto Baud Rate from 1,200 to 57,600 bps (Automatically Detects Communication Network Speed)
- Analog output from 0 to 1, 0 to 5, 0 to 10, 0 to 20 and 4 to 20 mA configurable for any of the measured channels;
- Drive of fans, pumps or heaters directly on the front;
- Stores in memory the maximum temperatures reached;
- NAF Alarm Contact for temperature that reaches the configured value;
- Timed PAL Shutdown Contact, for temperature that reaches the configured value;
- Contact of ventilation drive or NAF pump, with programmable hysteresis;
- Contact for Fault Indication (watchdog);
- High mechanical strength box, built entirely in aluminum;
- Reduced size 48x96x140mm;
- Easy parameterization and use;
- 2 years warranty.

TECHNICAL DATA

Operating Voltage	48 to 265 Vdc/Vac 50/60 Hz
Operating Temperature	-40 to +85°C
Consumption	<15 W
Temperature Measurement Input	3 - Pt100 Ohm at 0°C at 3 wires
Measuring Range	0 to 200°C
Analog Outputs and Maximum Load Options (see note below)	0 ... 1 mA - 8000 Ω
	0 ... 5 mA - 1600 Ω
	0 ... 10 mA - 800 Ω
	0 ... 20 mA - 400 Ω
	4 ... 20 mA - 400 Ω
Maximum Error of Measurement Inputs	0.25% of the end of the scale
Maximum Analog Output Error	0.25% of the end of the scale
Outgoing Contacts	4 – Free of Potential
Maximum Switching Power	70 W / 250 VA
Maximum Switching Voltage	250 Vac/Vdc
Maximum Driving Current	6.0 A
Communication Port	RS485
Communication Protocol	Modbus RTU and DNP 3.0 (Slave)
Auto Baud Rate	2,400 to 57,600 bps (autom. / manual)
Box	48 x 96 x 140 mm – Aluminium
Fixation	Built-in Panel Mount

Table 1 - Technical Ddos

CONNECTION DIAGRAM

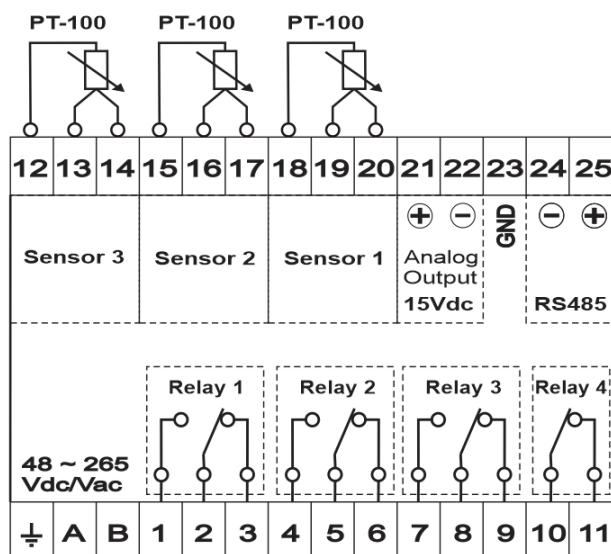


Figure 1 - Illustration of the diagram and connection and technical data

DIMENSIONS

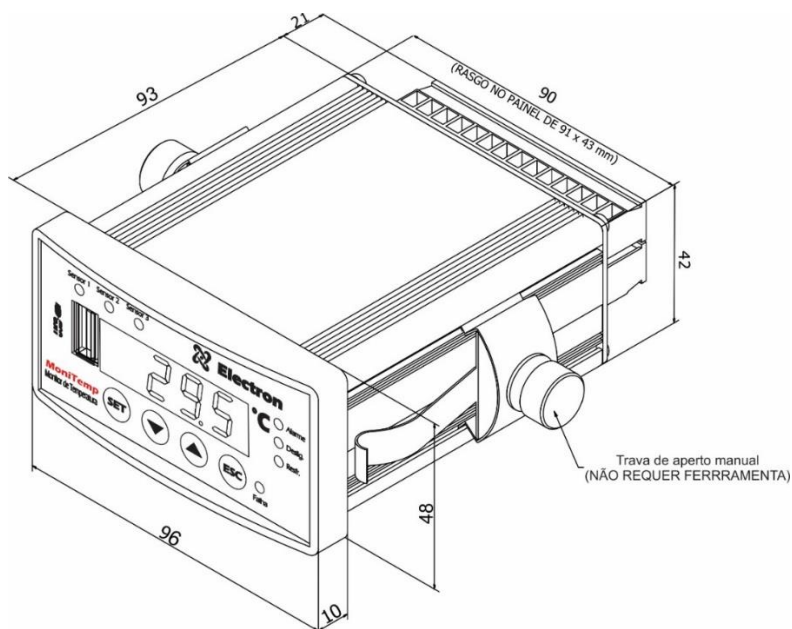


Figure 2 - Illustration of Monitemp Dimensions

APPLICATION EXAMPLE

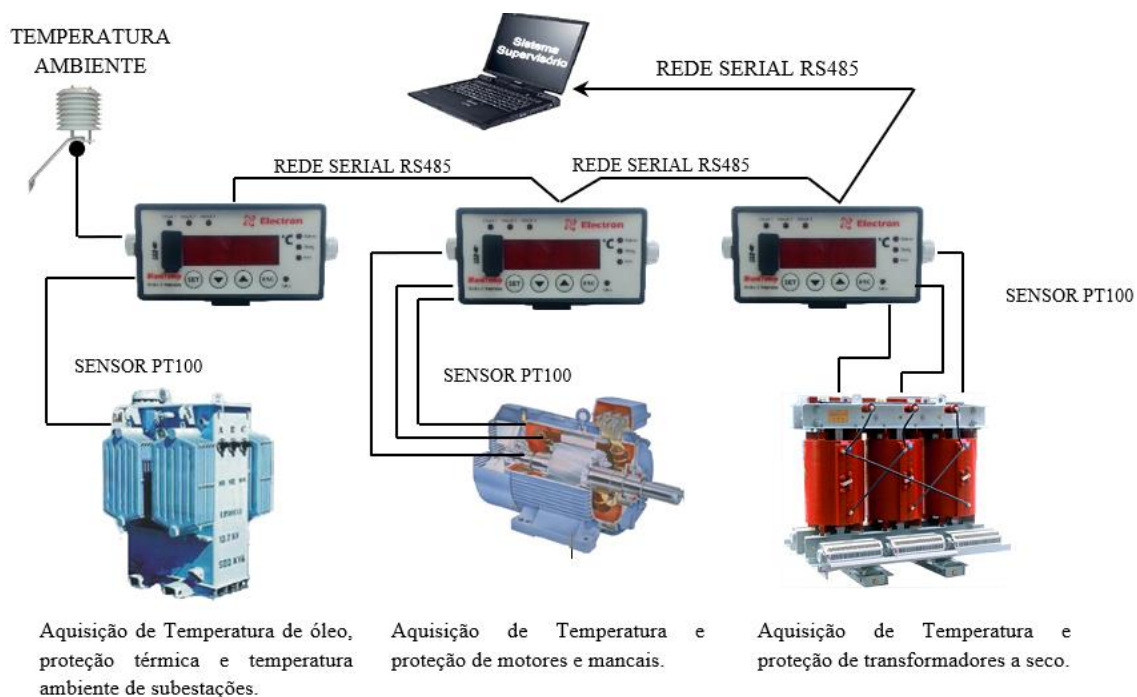


Figure 3 - Application Illustration

OPERATION CHART

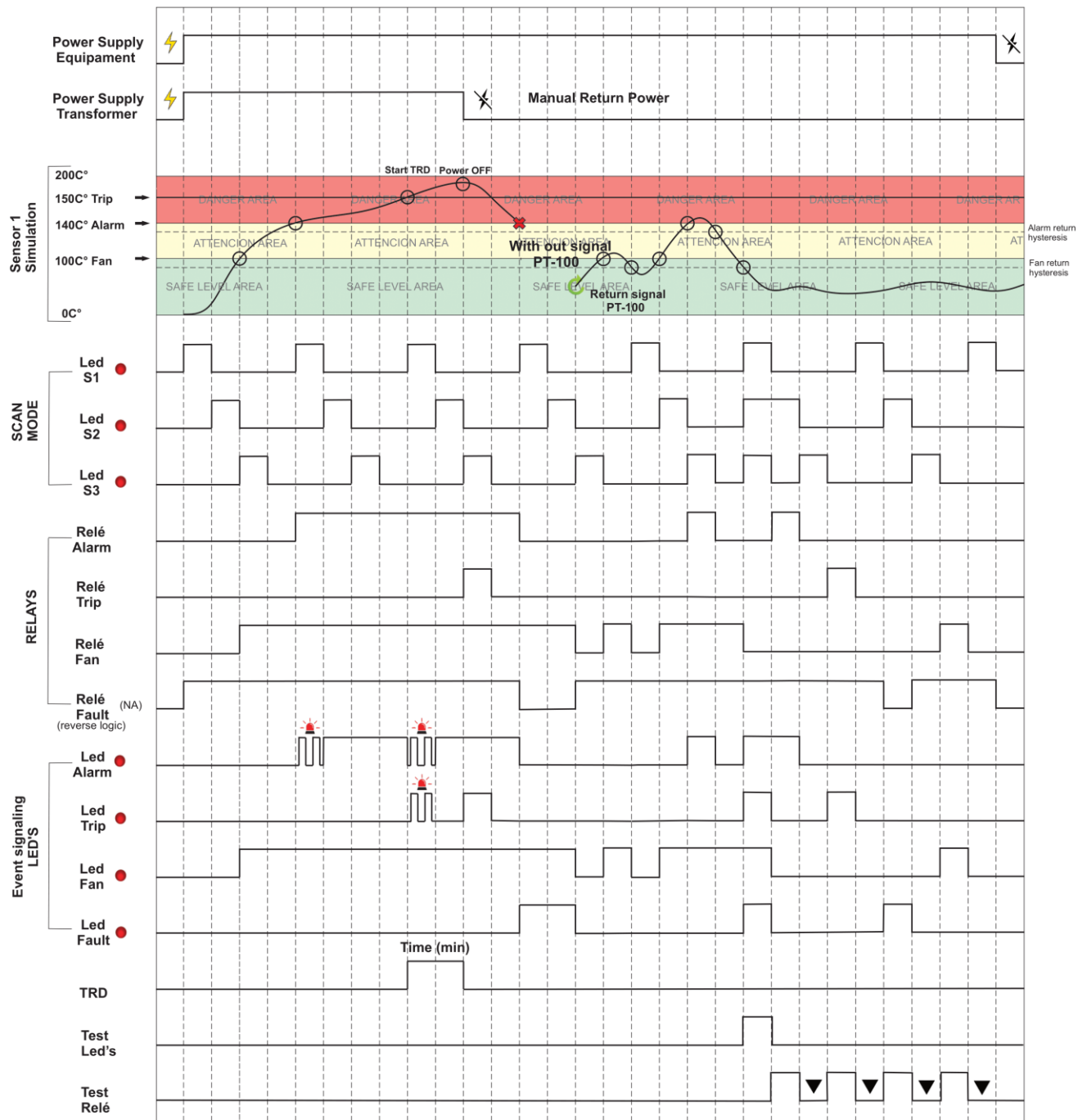


Figure 4 – Operation Chart

PREVENTIVE MAINTENANCE


PREVENTIVE AND CORRECTIVE MAINTENANCE							
Items to be checked preemptively			Scan Frequency				Corrective action
SHARE	Verification Elements	ACTIVITIES	Every Month	Every 3 Months	Every 6 Months	Every 1 Year	When Needed
VERIFICATION	Fastening and fitting clip on the rail	Attachment to panel door or panel bottom		X			Retightening, Fitting, terminal exchange or screw exchange
	Terminals and Connector Comb	Fastening and fitting into the equipment		X			
		Tightening of the screws in the attachment of the conductors		X			
	Sensors	Integrity / Positioning / Fastening			X		Replacement, Repositioning and/or Fixing of Sensors
	Sensor well in Oil Transformers	Oil level in the well			X		Filling with oil up to the indicated level
TESTS & MEASUREMENTS	Relays and Digital Outputs	Individual drive test			X		Forward to technical assistance of Electron do Brasil
	Led's and Displays	Test drive Led's and display segments			X		
	Navigation buttons	Navigation test of navigation buttons			X		
	Sensor Input	Measure sensor inputs using a pattern				X	
	Input Supply Voltage of the equipment	Measure Power Input Voltage			X		Replace voltage input values according to equipment model
	RS-485 communication outputs	Communication and command testing in the supervisory system			X		Forward to technical assistance of Electron do Brasil
	Milliampere Current Signal Inputs	Measure, compare, and measure input signal in passive and/or active mode			X		
	Milliampere Current Signal Outputs	Measure, compare, and measure input signal in passive and/or active mode			X		
CLEANING	Terminals and Comb of connectors and connection box	Debris, Impurities and Moisture	X				Cleaning with dry cloth, compressed air and vacuum cleaner
	Aluminum equipment enclosure		X				
	Front of the Equipment Display		X				
 ATENÇÃO	1 - Keeping the equipment within the ideal working temperature (50°C to 60°C) prolongs the useful life and avoids corrective maintenance.						
	2 - The accumulation of dust and impurities in the installations can cause short circuit and burning of equipment and sensors.						
	3 - After 10 years of use it is recommended to replace the equipment.						

Table 2 – Preventive maintenance

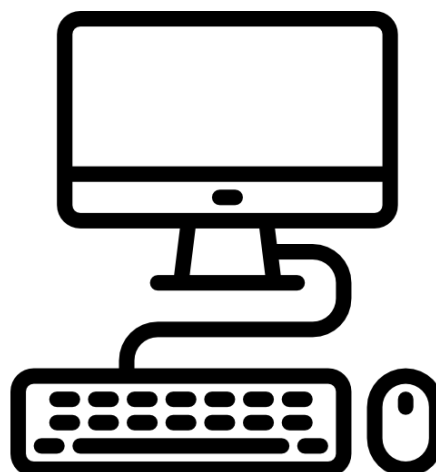
INSTALLATION SOFTWARE FOR PARAMETERIZATION - USEEASY

- 1) Access the software page on our Website <https://electron.com.br/site/softwares/>
- 2) Find your equipment and download the corresponding software

MoniTemp - Monitor de
Temperatura

Solicite Orçamento

SOFTWARE USE EASY

**Use_Easy_Cloud**Versão: 1.0
Tamanho: 286.83
KB
Data de
modificação
12/04/2023Baixar 

INSTALLATION ACCESSORIES

Electron do Brasil has a line of accessories that can be purchased together in order to offer a complete solution to meet your application with practicality. We have listed some of the main accessories that can be used for operation of Monitemp.



PT-100 STFE temperature sensor: This sensor can be built with silicone bulb, stainless steel or Teflon. With electrical insulation capacity options of 2 kV, 10 kV or 15 kV. The PT-100 STFE temperature sensor has as a measuring principle to evaluate the variation of electrical resistance with temperature using the temperature coefficient of pure platinum (0.385 Ohm/K), according to IEC 751 (DIN 43760). Ideal for temperature monitoring of dry-type transformer windings due to its high accuracy and quality of materials, the PT-100 3-wire sensor is widely used in the market, as it greatly reduces the possibility of measurement error due to the compensation principle of the third sensor terminal.

Link to Electron's PT100 STFE temperature sensor page:

<https://electron.com.br/site/produtos/rtd-pt100-2/>



PT-100 STE temperature sensor: This sensor is built stainless steel bulb AISI-304 injected aluminum head (IP 65) and adjustable buçim with BSP 3/4" and 1/2" threads or can be manufactured according to design. Its measuring principle is to evaluate the variation of electrical resistance with temperature using the temperature coefficient of pure platinum (0.385 Ohm/K), according to IEC 751 (DIN 43760). Ideal for installations subject to inclement weather and electrical disturbances for temperature monitoring of transformers and machines that require high measurement accuracy in environments subjected to electrical noise and weathering. The PT-100 3-wire sensor is widely used in the market, as it greatly reduces the possibility of measurement error due to the compensation principle of the third sensor terminal.

Link to Electron's PT100 STFE temperature sensor page:

<https://electron.com.br/site/produtos/rtd-pt100/>



Double door panel for outdoor use: Box for external use with double door for mounting instruments, accessories and passage of control wires and power of the power transformer. The external door contains glass display with protection against UV rays for viewing the quantities measured by the temperature monitor and the panel contains special paint that is resistant against weather and its degree of protection is IP 55, according to NBR IEC 60529:2017.

Link to the page of the double port panel for external use – IP 55:

<https://electron.com.br/site/produtos/painel-para-uso-externo-ip55/>

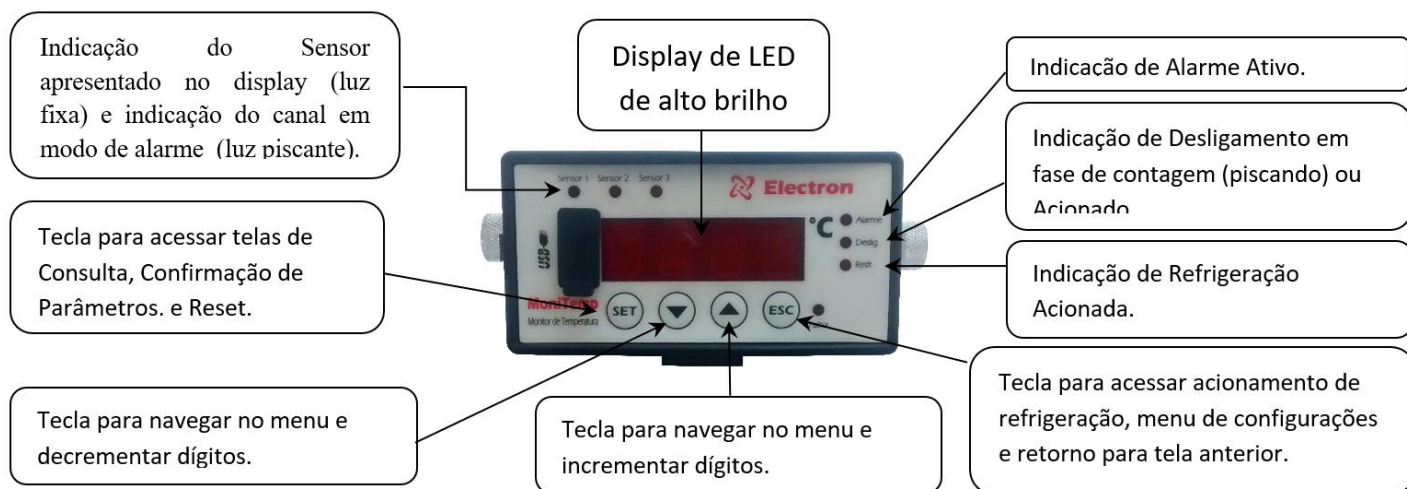


Reference card for PT-100 signal: This accessory was developed to perform the verification of the temperature value displayed by equipment with input of RTD PT-100 sensors of 3 wires. It consists of precision resistors that send an equivalent fixed and constant resistance signal for selection between 3 different ranges, 0 °C (100 Ohms), 26 °C (110.9 Ohms) and 200 °C (175.86 Ohms).

Link to the Reference Card page for PT-100 sign:

<https://electron.com.br/site/produtos/>

GETTING TO KNOW MONITEMP

*Figure 5 – Fronta Monitemp*