

## Application

The MASTERTEMP® Temperature Monitor was developed to monitor oil temperature and up to 3 windings, control ventilation, and protect power and distribution transformers (ANSI 49I and ANSI 49).

## Main features



Thermal Image Calculation (Hot Spot) based on standards IEC 60076-7, IEEE C57.91 e NBR 5356-7:2017.



Insulation life loss calculation selectable for Kraft (55°C), Term stabilized (65°C) and Nomex (95°C) based on Arrhenius theory, and indication of insulation remaining life in hours and days.



Inputs for temperature measurement with 3-wire PT100 sensor (EN 60751 – DIN 43760) para faixa de medição de -50°C to 250°C with 0,25% precision (End of Scale)



5 analog outputs with 12-bit resolution standard NAMUR NE43, with the possibility of configuring any of the measured or calculated quantities on the outputs.



3 Permanent current measurement inputs from 0 to 10 Amps for thermal image calculation, uses external CT (Split core / Clamp) of the current transducer type.



2-wire RS485 Digital Output (ANSI/TIA/EIA-485-A) with 2 protocols available, Modbus RTU and DNP3 (Level 2) for remote monitoring through SCADA software



Indication of the final temperature gradient (Oil / Winding).



Control of up to 3 ventilation groups with smart exercise function.



Indication of the transformer load percentage with pre-cooling function.



13 relays for signaling and command, 2 of which are



Extended operating temperature - 40 to +85 °C.



USB input for software configuration USEEASY.



MicroSD card para armazenamento de dados (datalogger) até 10 anos de armazenagem (8 GB).



Maintenance free - Internal clock powered by a super capacitor.



Hourmeter for monitoring the fans.



Password Protected Setup Menu.

## Aluminum casing

The aluminum casing has high mechanical strength and creates a Faraday cage that increases the immunity of electronic circuits in cases of noise induction and electrical discharges. The housing also acts as a heat sink, extending the life of the IED.

## Display

OLED display with 128 x 64 pixel graphics capability, with contrast adjustment and inversion of background colors and letters, readable in any lighting condition, including exposed to direct sunlight.

Mastertemp also has a presence sensor located on its front. This sensor aims to optimize the life of the equipment's OLED display. Through the "Display IPD" function, the user can parameterize a timer from 1 to 20 minutes, which will start the countdown to turn off the OLED display, as soon as there is no operator present at a distance of 1.5 meters from the front of the equipment.

## Simple Setup

Easy configuration via the keyboard on the equipment or via a laptop using the USEEASY software, which issues graphs and reports.

## CT SPLITCORE

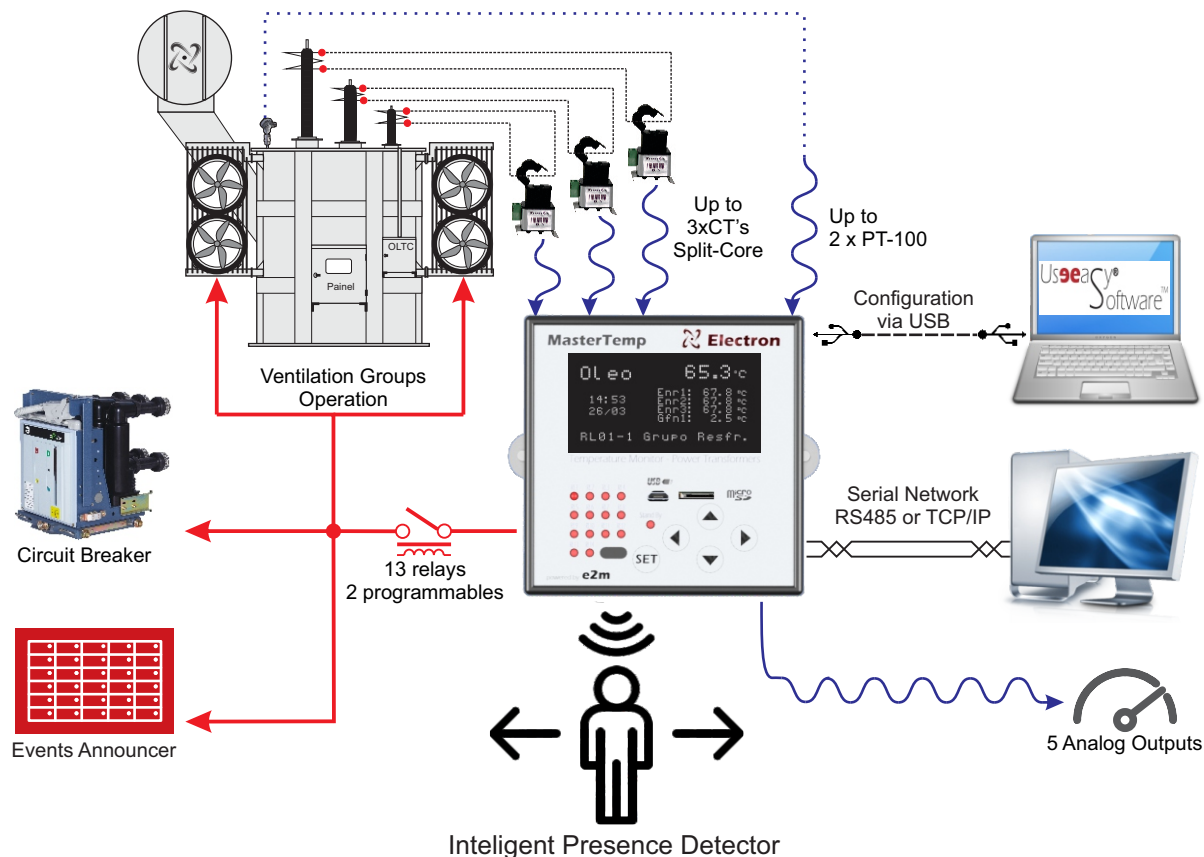
External CT (Split core / Clamp) of the current transducer type that provides a standard 2-wire analog output and 4 to 20 mA amplified in the secondary that allows it to be installed at a distance of up to 500 meters from the monitor without loss of precision (1%) and signal quality.

## PT100

PT-100 type sensor with aluminum head (IP65) and stainless steel bulb for measuring the oil temperature.

## Quality

Its hardware is designed to withstand severe operational conditions. MasterTemp can be installed directly in transformers or reactors panels, in substations, offshore platforms or chemical industries. Meets all levels of supportability and reliability according to IEC, DIN, IEEE and ABNT standards.



## Technical Data

Temperature Monitor	
Operating Voltage	48 to 265 Vdc/Vac 50/60 Hz
Operating Temperature	-40 to +85°C
Storage Temperature	-50 to +60 °C
Consumption	< 15W
Temperature Measurement Input	Up to 2 x Pt100 at 3 wires [100°C at 0°C]
Input for Current Measurement	EN 60751 - DIN 43760
Measurement Range	Up to 3 x TC Split Core from 0 to 10 A (True RMS)
Analog Outputs and Maximum Load Options	-50 to 250°C or 0 to 200°C
	0 ... 1mA - 8000 Ohms
	0 ... 5mA - 1600 Ohms
	0 ... 10mA - 800 Ohms
	0 ... 20mA - 400 Ohms
Maximum Error of Measurement Inputs	4 ... 20mA - 400 Ohms
Analog Output Maximum Error	0.25% of the end of the scale
Outbound Contacts	0.25% of the end of the scale
Maximum Switching Power	13 – Potential Free
Maximum Switching Voltage	70 W / 250 VA
Maximum Conduction Current	250 Vac/Vdc
Communication port	6.0 A
Communication protocol	RS485 (2 wire), RS485 (Fiber optic),
Auto Baud Rate	RS485 à Modbus RTU and DNP 3 L1/L2 (Slave)
Front USB port	2400 to 57600 bps (automatic / manual detection)
DIN IEC 61554 box	Serial USB - 2.0 - Type A
Fixation with steel clip	98 x 98 x 98 mm - Aluminum
Current Transformer - TC Split Core	
Exit sign	4 to 20mA
Measurement Range	0 to 10 A
Maximum Error of Measurement Inputs	1% of the end of the scale
linearity	1% of the end of the scale
Operating Temperature	-40 to +85°C
Storage Temperature	-50 to +60 °C