

TEMPERATURE MONITOR DEVICES **CTT**

GENERAL

Programmable thermal control unit up to 4 or 8 inputs from Rtd Pt100 sensors.

- Programmable alarm, trip and ventilation threshold on each input
- It shows the parameters and measures on 2 ample digital displays, added function of maximum values memory, it displays automatically the highest temp
- Extended range of power supply 20 ÷ 250 Vcc/cc or 110 - 230 - 400 Vca
- Serial output RS485 Modbus Rtu with management software (optional)
- Analog output 0/4 ÷ 20 mA measures conversion (optional)



APPLICATIONS

Overtemperatures caused by overloads or internal failure due to degradation of the dielectric qualities of insulating materials in transformers and electrical machines, inevitably leads to a reduced efficiency and energy loss in distribution systems.

To prevent and control degradation of insulating materials in electrical machines due to the thermal stress, it is necessary to use integrated measurement systems such as CTT control units.

CTT control units are able to read four temperature values (8 values on model CTT-8) with the help of four Pt100 probes.

For each input it is possible to set the threshold temperature of alarm and trip with great accuracy and to display the maximum values reached.

Control units are enclosed in a self-extinguishing thermoplastic housing of 96 x 96 mm in compliance with DIN 43700 and are built in conformity with CEE directives 93/68 safety and 89/336. CTT control units can be supplied with the serial interface to allow remote monitoring of temperatures using a PC.

FUNCTIONS

The control unit is programmed through keys located on the front panel:

ELECTION OF THE NUMBER OF ACTIVE CHANNELS

Setting up the number of active measurement channels 3 or 4 (8 fixed channels for model CTT-8).

VENTILATION CONTROL

The following ventilation control modes can be selected:

- Fan control off – fan control on, 4 inputs
- Fan control on 3 input – fan control on, only the 4 input

When the fan control is on the temperature setting values for fan control can be fully selected by the user.

ALARM AND TRIP TEMPERATURES (HOLD FUNCTION)

For each measurement input the values of alarm and trip can be chosen in the range 1 ÷ 200 °C.

STORAGE OF ALARM AND TRIP CONDITIONS

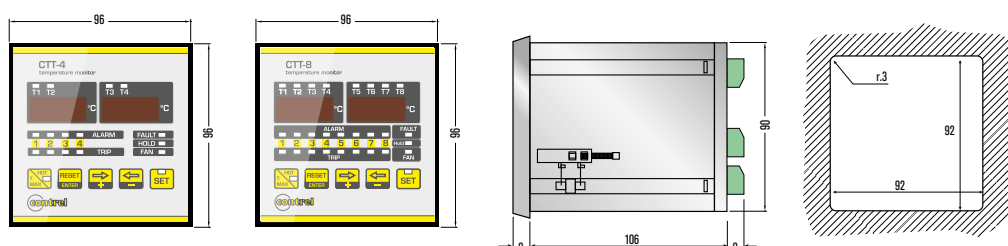
This function will store alarm and trip values until they are manually reset.

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ELECTRICAL CHARACTERISTICS	CTT-4	CTT-8
AUXILIARY SUPPLY		
Rated voltage	20÷250 VAC / VDC ±15% - 115-230-400 VAC	
Frequency	50 ... 60 Hz	
Power consumption	4 VA	
MODEM GSM/GPRS		
Sensor	4 PT 100 RTD	8 PT 100 RTD
Type	3 wires (supported 2 and 4 wires)	
Error	1 degree every 0,39Ω	
Measure range	-30 ... +200 °C	
Compensation	20 Ω max	
Trip delay / hysteresis	5s / 2 °C	
OUTPUTS		
Number of outputs	4	
Type	NO-C-NC	
Rated voltage	12 VDC	
Rated current	8 A	
Functions	Alarm, Trip, Fan, Fault	
DISPLAY		
Type	7-segment LED	
CONNECTIONS		
Terminals	Screw (Removable)	
INSULATION		
Insulation voltage	2.5 kVAC for 1 minute	
AMBIENT CONDITIONS		
Operating temperature	-10 ... 55°C	
Storage temperature	-25 ... 80°C	
Relative humidity	max 90%	
HOUSING		
Material	Polycarbonate self-extinguish UL94-V0	
Version	DIN EN-50022 rail 4 modules	
Dimensions w x h x d	71 x 90 x 58 mm	
Degree of protection	IP52	
Weight	800 g	
COMPLIANCE		
Reference standards	CEI EN 50081-2, CEI EN 50082-2, CEI 14.1, CEI EN 60255	

OPTION	
ORDER CODE	DESCRIPTION
A0	Analog output 0-20 mA
COMMUNICATION	
485	RS485 communication port

DIMENSIONS



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TEMPERATURE DISPLAY

CTT control units show normal temperatures on measurement channels and higher temperatures on large displays. Using the "T-Max" function it is possible to recall and display the maximum temperatures which have occurred in each channel.

DIAGNOSTIC

Electronic relays contain many self-diagnostic functions to prevent the unseen malfunctioning of system components which could lead to possible dangerous conditions and unsafe operation of machines. The device is provided of the thermic probes diagnostic functions.

- Probe Pt100 interrupted: signalling on the display of the message OPE
- Probe in short circuit: signalling on the display of the message SHR
- Probe out of order for the temperature reading wrong: signalling on the display of the message FDC

ALARMS AND INDICATORS

CTT controls units are equipped with light indicators and alarms relays whose change of state is set during the programming procedure:

- Led Prog.: indicating the programming phase
- Led Fault : indicating fault trip on Pt100 thermal probe
- Led Fan: indicating alarm ventilation threshold exceeded
- Led Alarm: indicating alarm threshold exceeded
- Led Trip: indicating the trip threshold exceeded
- Led Hot: indicating display of higher temperature channels

OUTPUT RELAIS

- Fan Relay: intervening when the fan switch-on threshold is exceeded
- Fault Relay: intervening when there is abnormally on Pt100 probe (relay normally excited, therefore fail safe)
- Alarm Relay: intervening when alarm threshold is exceeded
- Trip Relay: intervening when the trip threshold is exceeded

COMMUNICATION INTERFACE

CTT control unit can be supplied with RS485 serial connection for communication with PCs or data acquisition control systems. The communication protocol used is Modbus-Rtu

MEASUREMENT INPUTS

For the measurement of temperature, the control units must be provided with Rtd thermal probe of the Pt100 type. The temperature measurement range is between -30 °C and + 200 °C.

WIRING DIAGRAM

