ELECTRONIC THERMOSTAT DT238

SIMPLE
RELIABLE
HIGH QUALITY
SAFE
ECONOMICAL

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ELECTRONIC THERMOSTAT

DT238

3 YEARS WARRANTY

- electronic thermostat with a **microcontroller** and a **safety transformer**
- temperature control from **+30 to +150 °C**
- temperature hysteresis **1 to 10 °C**
- relay output **25 A** continuous / 250 V AC
- power supply **85-230 V AC 50/60Hz**
- thermostat has an ON/OFF button and an ALARM output
- DIN rain mounting 2 modules wide

GENERAL USAGE:

- control of electric heating/cooling processes

SPECIFICLY DESIGNED FOR THE CONTROL OF:

- pipeline and equipment el. heating
- high temperature process control

Electronic thermostat type DT238 is a combination of advanced features usually provided by digital electronic thermostats and simple way of handling typical of analog thermostats. Setting the desired temperature is done simply by turning the knob with the pointer over the **calibrated temperature scale**. The thermostat is controlled by a microcontroller, which ensures a **high accuracy of ± 1 °C** throughout the entire temperature range. Hysteresis is changeable between 1 °C (± 0.5 °C) up to 10 °C (± 5 °C).

Electronic thermostat DT238 is designed primarily to control the temperature of heating or cooling processes in the temperature range from 30 to 150 °C. The temperature sensing element is an **NTC temperature sensor** (100 kΩ at 25 °C). The thermostat output is a high-quality **relay** with a **changeover** contact and **25 A / 250 V** ~ continuous current (35A instantaneous) **switching capacity**. The thermostat is powered by universal AC voltage from 85 – 230 V AC (50 or 60 Hz) by an internal safety transformer. Electrical isolation of the temperature sensor circuit offers **increased security**.

Because of digital filtering the thermostat will work properly even with high electromagnetic interference. This enables the cable of the NTC temperature sensor to be positioned nearby to power cables (length up to 100 m). If the interference level exceeds the maximum permissible value, the ON/OFF light indicator will flash orange and draw attention to the cause of incorrect sensor positioning.

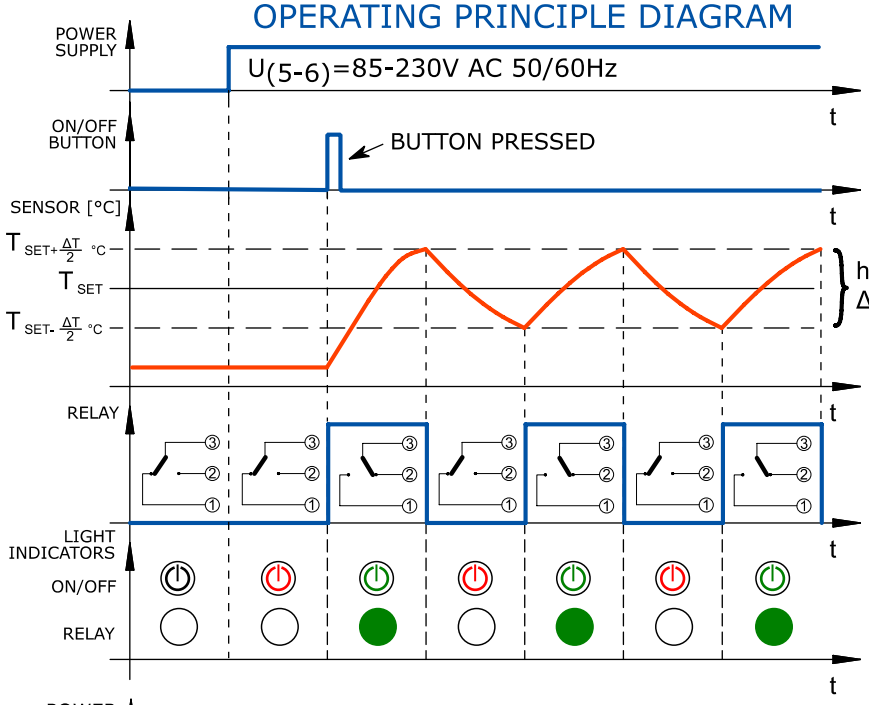
In addition, when the NTC temperature sensor is an open or short circuit (sensor fault) the RELAY light indicator flashes green to warn the user about the error. In both cases, the heating is switched off (contacts 2 and 3 are open).

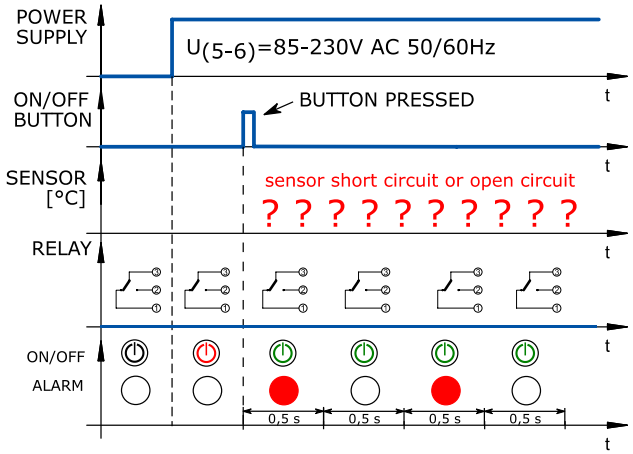
The width of the thermostat is 2 DIN modules and is ready for mounting on the 35 mm DIN mounting rail. All thermostats of DT2xx series have been designed and tested to **withstand surges of more than 4 kV**, which guarantees their long-time reliable, safe and accurate operation.

Parameter	Value / Description
Name	DT238
Type of functionality	thermostat with hysteresis
Temperature range	from +30 °C to +150 °C
Temperature hysteresis	from 1 °C to 10 °C
Temperature accuracy	± 1 °C
Type of mounting	DIN rail 35 mm (according to EN 60715)
Power supply	85-230 V AC, 50/60 Hz
Power supply connection	4-5
Internal power supply type	galvanically separated SELV safety transformer
Internal power consumption	< 2 VA
Temperature sensor type	NTC thermistor 100 kΩ / 25 °C (sensor temp. range is from -60°C to +180°C)
Temperature sensor connection	6-7
Device on indicator	ON/OFF button lights GREEN
Load energized indicator	RELAY indicator lights GREEN
Temperature sensor fault detection	ALARM indicator flashes RED (sensor short circuit or open circuit)

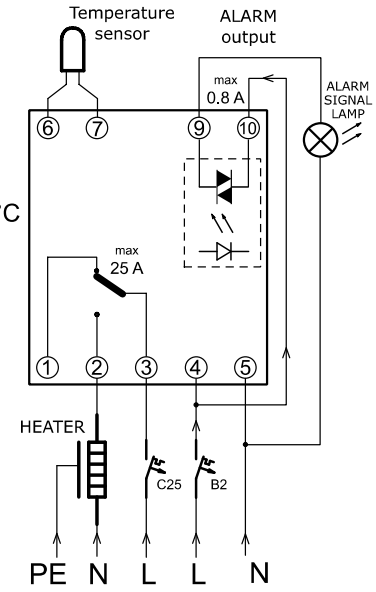
Parameter	Value / Description
Output type	relay
Output relay contacts	SPDT 
Max. continuous load current and breaking voltage	25 A / ~ 250 V / cosφ ≥ 0.8, 25 A / ⎓ 24 V
Relay mechanical durability	10^7 switches
Relay electrical durability	10^5 switches
Maximum ambient temperature	-20 °C to +55 °C
Alarm output connection	9-10
Alarm output type	triac (max 0,8A 250Vac) AC only
Protection degree	IP 40 front board with dial IP 20 connectors
Overvoltage category	III
Pollution degree	2
Dimensions	D= 90.6 mm, W= 35.8 mm, H= 61.4 mm (2 DIN modules)
Connection wire cross section	Relay connection ≤ 4 mm^2 All other connections ≤ 2.5 mm^2
Mass	126 g
Complies with standards	IEC/EN 60730-2-9

OPERATING PRINCIPLE DIAGRAM





DT238 thermostat wiring diagram



When the sensor is faulty (open or short circuit) the **ALARM indicator flashes** RED. Relay contacts (2 and 3) are open and the heating is not turned on.

At the same time the alarm output is active (terminals 9-10). Customers can use the alarm signal to light an auxiliary signal lamp or a buzzer in order to indicate to end users that the heating system is not operating correctly. During the alarm the output relay is off.

If the users wish to turn off the thermostat, they can simply press the ON/OFF button. When the thermostat if OFF the button lights red. Likewise when the thermostat is ON the button lights green.