

Overview thermostat/ temperature controller

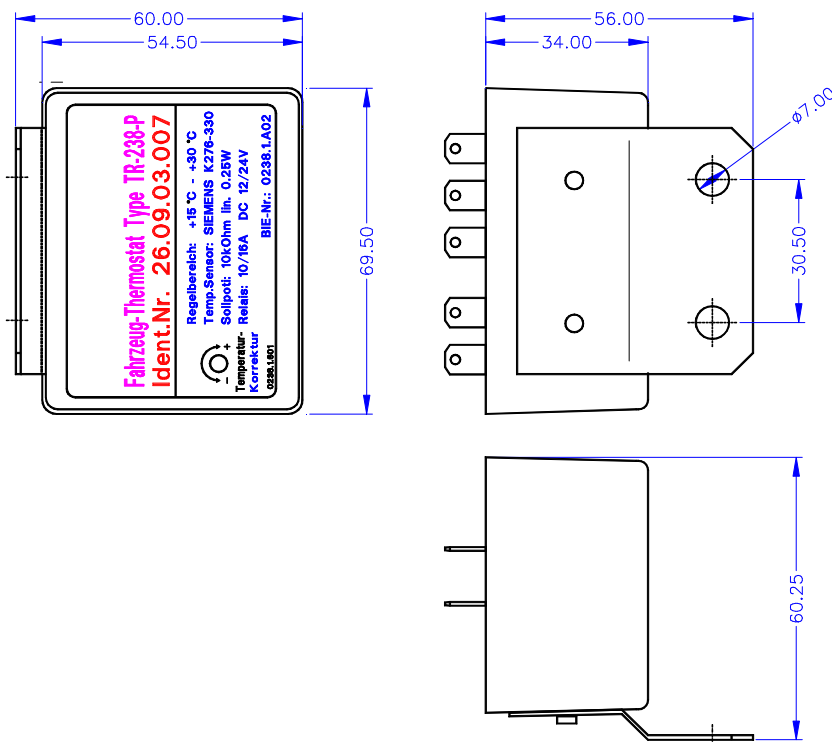
Thermostat TR-238

The Thermostat TR-238 is a electronic two-level controller for controlling of heating and cooling in climate control units and vehicles.

Nominal voltage:	12 and 24V DC
Voltage range (12V):	10 to 18V DC
Voltage range (24V):	18 to 30V DC
Control range:	+15°C to +30°C
Hystereses:	1K
External setpoint:	10 kΩ -Potentiometer, linear
Temperature sensor:	NTC, Siemens K276
Relays contact:	1 potential-free 2-way contact
Contact load open/close:	10/20A (resistive load)
Operation temperature:	-20°C to +70°C
Storage temperature:	-30°C to +85°C
connector:	10 AMP- FASTON 6,3x0,8mm
Protection class:	IP20
weight:	approx. 115g

Notice: sensor- and potentiometer lines more than 2 meter length must be shielded or twisted!

dimensiones (mm):



Subject to technical modifications!

Revision: Sept. 2011

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Overview thermostat/ temperature controller

Thermostat TR-280 (0280.3.A00)

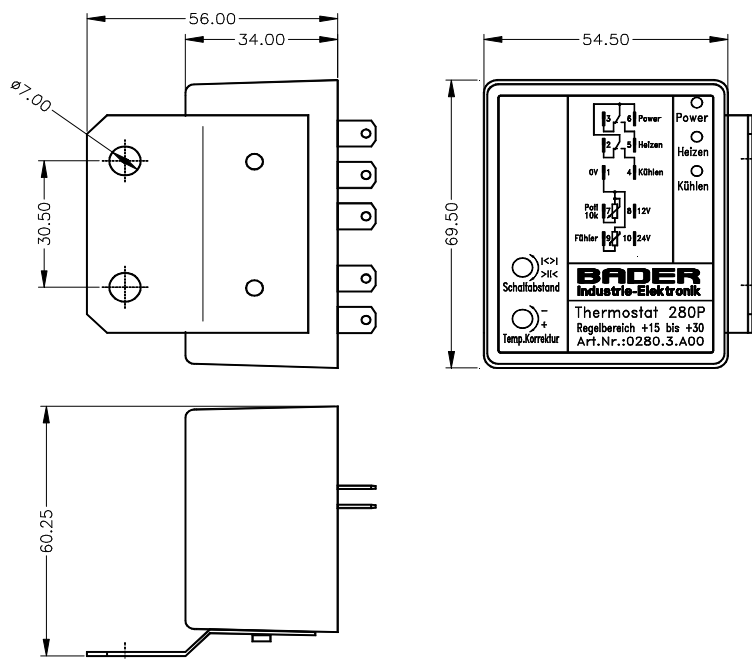
Seite 1

The Thermostat TR-280 is a electronic three-level controller for controlling of heating and cooling in climate control units and vehicles.

Nominal voltage:	12V and 24V DC
Voltage range (12V):	10V to 18V DC
Voltage range (24V):	18V to 30V DC
Control range:	+15°C to +30°C
Hystereses relays:	1 K
Reacting distance between relays:	1 K to 5 K adjustable
External setpoint:	10 kΩ -Potentiometer, linear
Temperature sensor:	PTC, KTY-14
Relays contact:	2 potential-free 2-way contact
Contact load open/close:	10/20A (resistive load)
Operation temperature:	-40°C to +85°C
Storage temperature:	-40°C to +85°C
Connector:	11 AMP- FASTONr 6,3x0,8mm
Protection class:	IP20
weight:	approx. 115g
Interference immunity:	According to DIN VDE 0839 part 1

Notice: sensor- and potentiometer lines more than 2 meter length must be shielded or twisted!

Dimensiones:



Subject to technical modifications!

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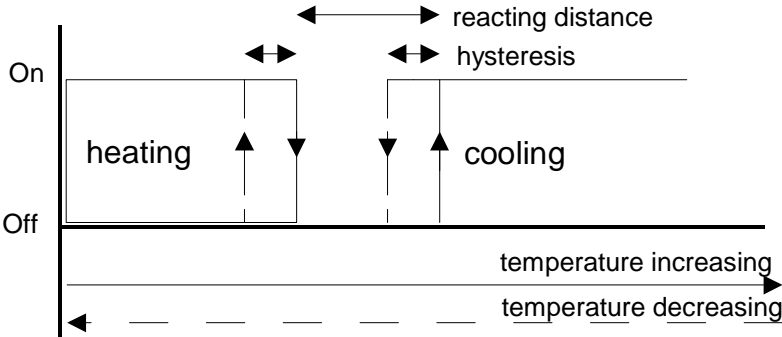
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Overview thermostat/ temperature controller

Function

The controller forms the difference between the **set point** (adjustable with potentiometer) and the **actual value** (measured with external sensor).
At positiv control deviations (set point – actual value) the relay „heating“ is activated, at negativ control deviations the relay „cooling“.
The switch-point between the both relays is adjustable between 0,5 K and 5 K (both relays off).
The adjustment is done with the potentiometer „reacting distance“.
Each relay has a fixed hysteresis about 1 K, for avoid a permanent switching.

The potentiometer „Temp.correction“ gives the possibility to adjust the tolerances of the sensor.

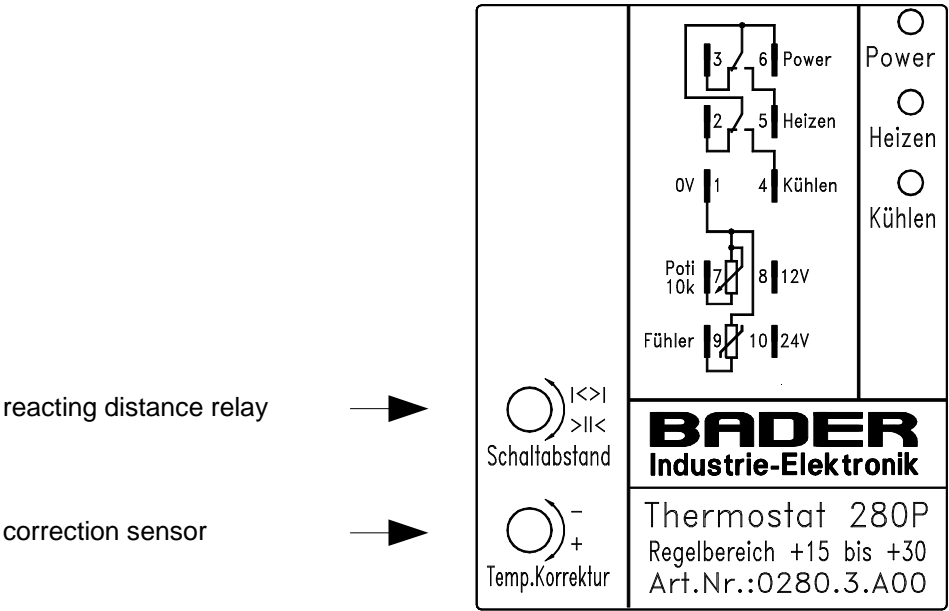


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Eingetragen beim Amtsgericht Vaihingen/Enz HRB 126-M. Geschäftsführer Gottfried Bader, Remseck 3

Overview thermostat/ temperature controller

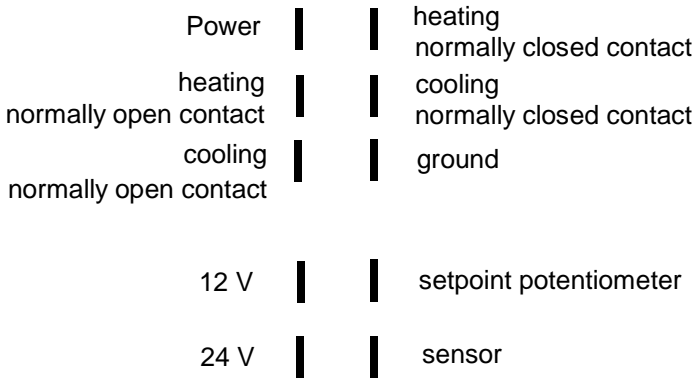
Adjustements



reacting distance relay →

correction sensor →

connection



One terminal of setpoint potentiometer and sensor must be contacted to ground.

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Overview thermostat/ temperature controller

Thermostat TR-282 (0282.3.A00)

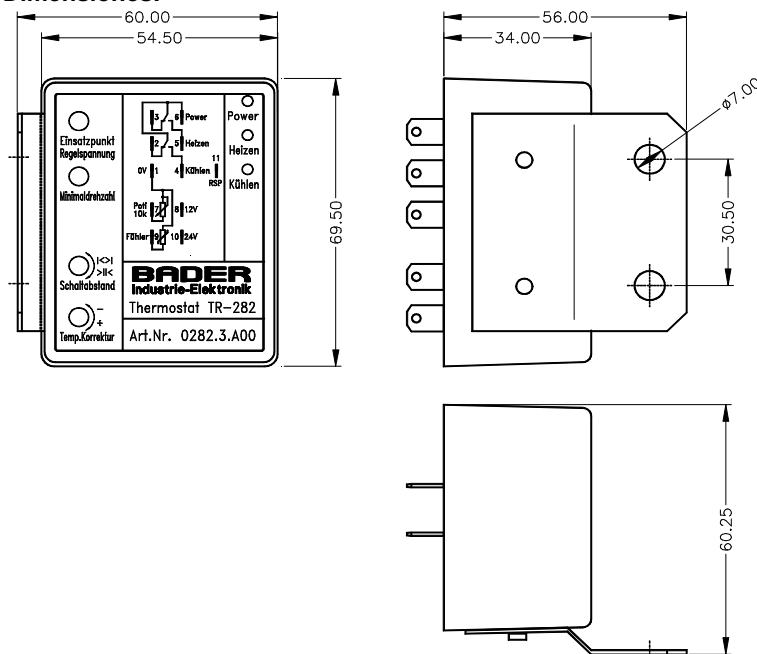
Seite 1

The Thermostat TR-282 is a electronic three-level controller for controlling of heating and cooling in climate control units and vehicles.

Nominal voltage:	12V and 24V DC
Voltage range (12V):	10V to 18V DC
Voltage range (24V):	18V to 30V DC
Control range:	+15°C to +30°C
Hystereses relays:	1 K
Reacting distance between relays:	0,5 K to 5 K adjustable
External setpoint:	10 kΩ -Potentiometer, linear
Temperature sensor:	PTC, KTY-14
Relays contact:	2 potential-free 2-way contact
Contact load open/close:	10/20A (resistive load)
Analog output:	0 to supply voltage -2V, current 5mA
Operation temperature:	-40°C to +85°C
Storage temperature:	-40°C to +85°C
Connector:	11 AMP- FASTON 6,3x0,8mm
Protection class:	IP20
weight:	approx. 115g
Interference immunity:	according to DIN VDE 0839 part 1

Notice: sensor- and potentiometer lines more than 2 meter length must be shielded or twisted!

Dimensiones:



Subject to technical modifications!

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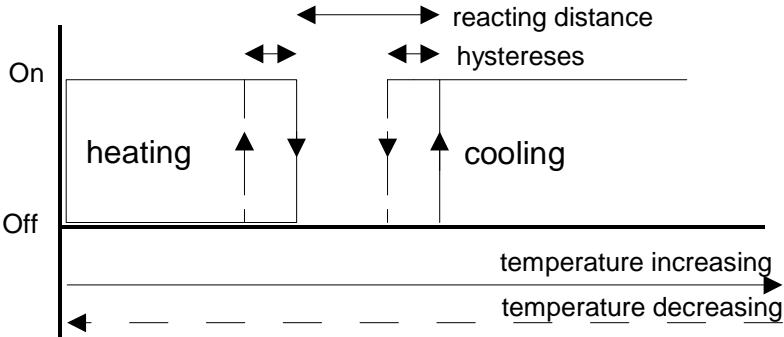
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Overview thermostat/ temperature controller

Function

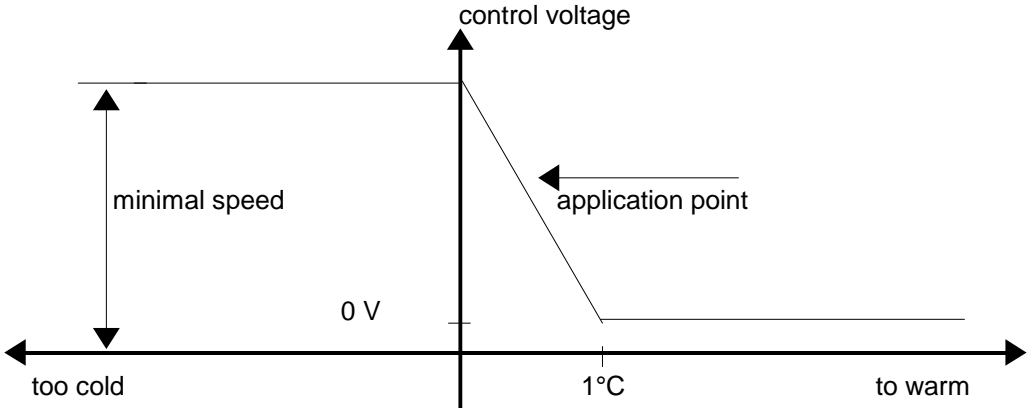
The controller forms the difference between the **set point** (adjustable with potentiometer) and the **actual value** (measured with external sensor).
At positiv control deviations (set point – actual value) the relay „heating“ is activated, at negativ control deviations the relay „cooling“.
The switch-point between the both relays is adjustable between 0,5 K and 5 K (both relays off). The adjustment is done with the potentiometer „reacting distance“.
Each relay has a fixed hysteresis about 1 K, for avoid a permanent switching.

The potentiometer „Temp.correction“ gives the posibility to adjust the tolerances of the sensor.



The thermostat comes with a additional analog output, e.g. for controlling of blower moduls. The voltage decreases proportionately to the control deviacion. With a suitable blower modul this causes to increase the rotation speed of the blower.

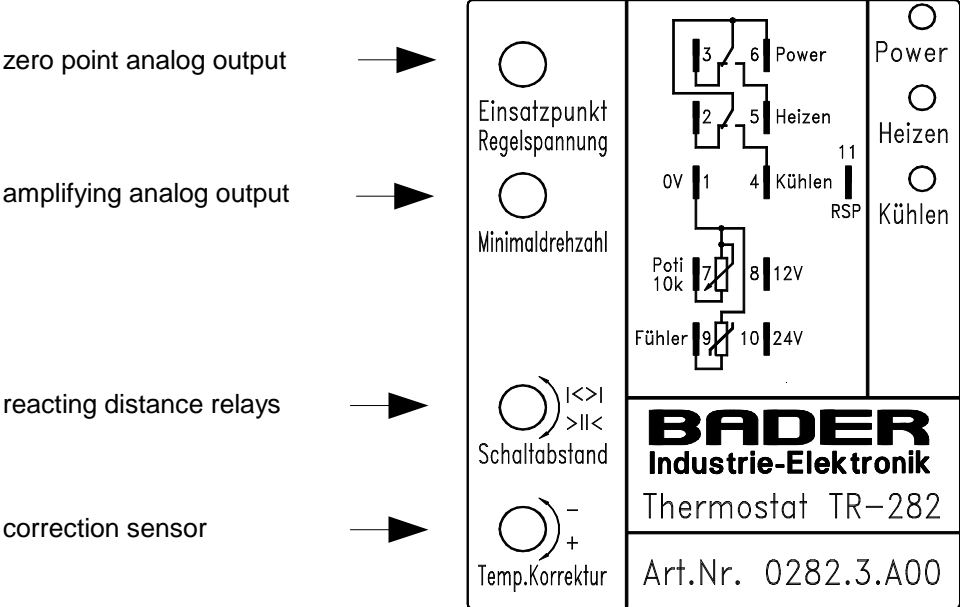
Adjustable is the „zero point“ (application point), movable over the complete controlling range, as well as the heights of the output voltage (minimal speed), adjustable from 0V to Ubatt – 2,5 V



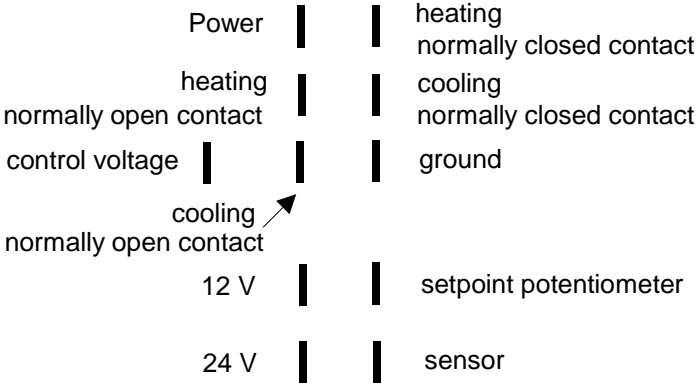
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Overview thermostat/ temperature controller

Adjustment



connection drawing



One terminal of setpoint potentiometer and sensor must be contacted to ground.

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Overview thermostat/ temperature controller

Thermostat TR-285P

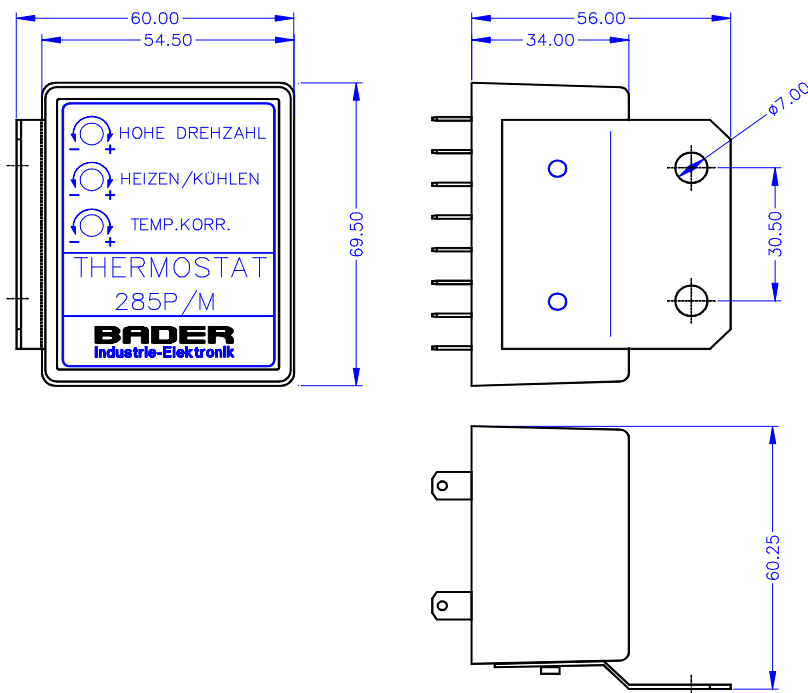
Seite 1

The Thermostat TR-282 is a electronic four-level controller for controlling of heating and cooling in climate control units and vehicles. He works like a three-level controller with one addcional contact.

Nominal voltage:	12V and 24V DC
Voltage range (12V):	10V to 18V DC
Voltage range (24V):	18V to 30V DC
Control range:	+15°C to +30°C
Hystereses:	±0,5K to 5K adjustable
External setpoint:	10 kΩ -Potentiometer, linear
Temperature probe:	NTC, KTY-14
Relays contact:	3 potential-free 2-way contact
Contact load open/close:	10/ 20A (resistive load)
Operation temperature:	-40°C to +85°C
Storage temperature:	-40°C to +85°C
Connector:	14 AMP- FASTON 6,3x0,8mm
Protection class:	IP20
weight:	approx. 120g
Interference immunity:	According to DIN VDE 0839 part 1
Article no. 12V version	0285.1.A00
Article number 24V version	0285.2.A00

Notice: sensor- and potentiometer lines more than 2 meter length must be shielded or twisted!

Dimensiones:



Subject to technical modifications!

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Overview thermostat/ temperature controller

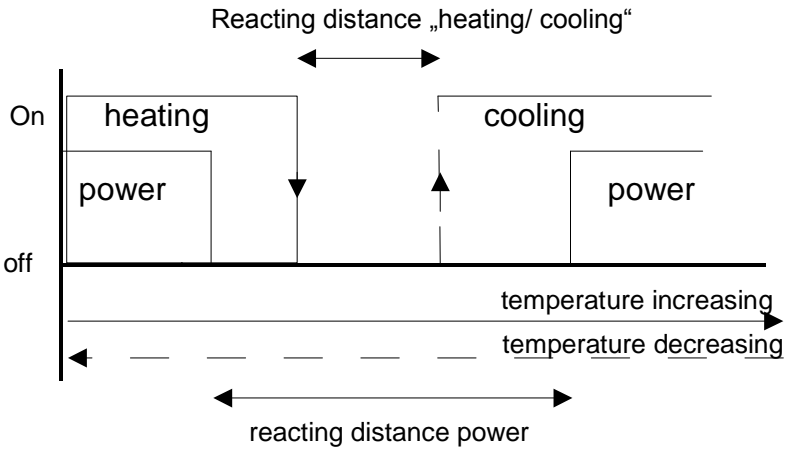
Function

The controller forms the difference between the **set point** (adjustable with potentiometer) and the **actual value** (measured with external sensor).
 At positiv control deviations (set point – actual value) the relay „heating“ is activated, at negativ control deviations the relay „cooling“.
 The switch-point between the both relays is adjustable between 0,5 K and 5 K (both relays off). The adjustment is done with the potentiometer „reacting distance“.
 Each relay has a fixed hysteresis about 1 K, for avoid a permanent switching.

The potentiometer „Temp.correction“ gives the posibility to adjust the tolerances of the sensor.

Increases the control deviation an adjustable value, a more relay is switched(increased efficiency). The relay works in both direction, thus to increase the heating power as well as the cooling power. The switch point is adjustable with the potentiometer „power“.

When reaching the setpoint, all relays are switched off.



connection

24 V	10	6	Schaltspannung	
12 V	8			
ground	1	11	normal open contact	power
		12	normal closed contact	
ground	1	4	normal open contact	cooling
ground	1	2	normal closed contact	
setpoint potentiometer	7	3	normal open contact	heating
sensor	9	5	normal closed contact	

One terminal of setpoint potentiometer and sensor must be contacted to ground..

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Overview thermostat/ temperature controller

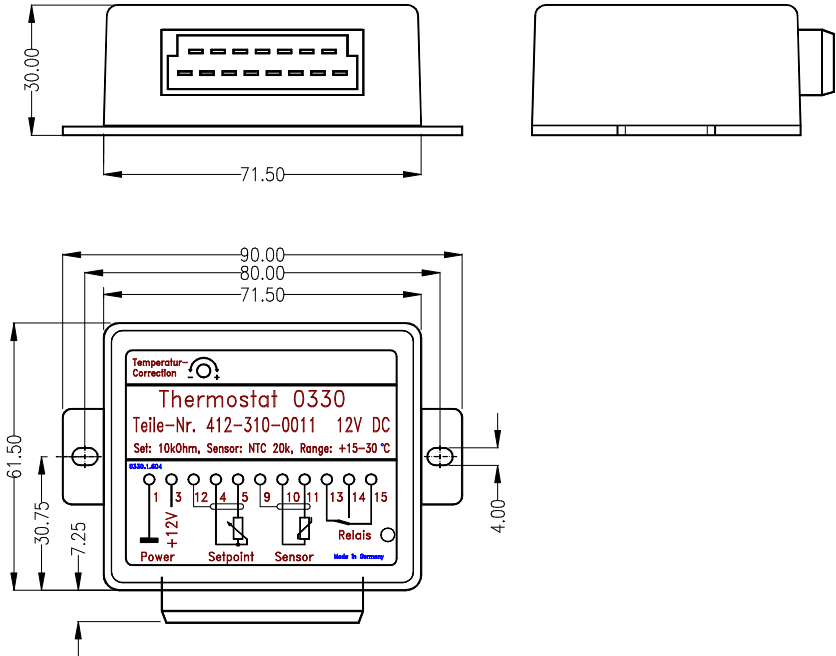
Thermostat TR-330

The Thermostat TR-330 is a electronic two-level controller for controlling of heating and cooling in climate control units and vehicles.

Nominal voltage:	12V and 24V DC
Voltage range (12V):	10V to 18V DC
Voltage range (24V):	18V to 30V DC
Control range:	+15°C to +30°C
Hystereses:	approx. 2K
External set point:	10 kΩ -Potentiometer, linear
Temperature sensor:	NTC 20kΩ
Relays contact:	1 potential-free 2-way contact
Contact load open/ close at 23°C:	30/ 45A (resistive load)
Contact load open/ close at 23°C:	25/ 30A (resistive load)
Operation temperature:	-25°C to +85°C
Storage temperature:	-25°C to +90°C
Connector:	15 pole Junior- Timer plug connector
Protection class:	IP53
Weight:	approx. 90g
Interference immunity:	According to DIN VDE 0839 part 1

Notice: sensor- and potentiometer lines more than 2 meter length must be shielded or twisted!

Dimensiones:



Subject to technical modifications!

Overview thermostat/ temperature controller

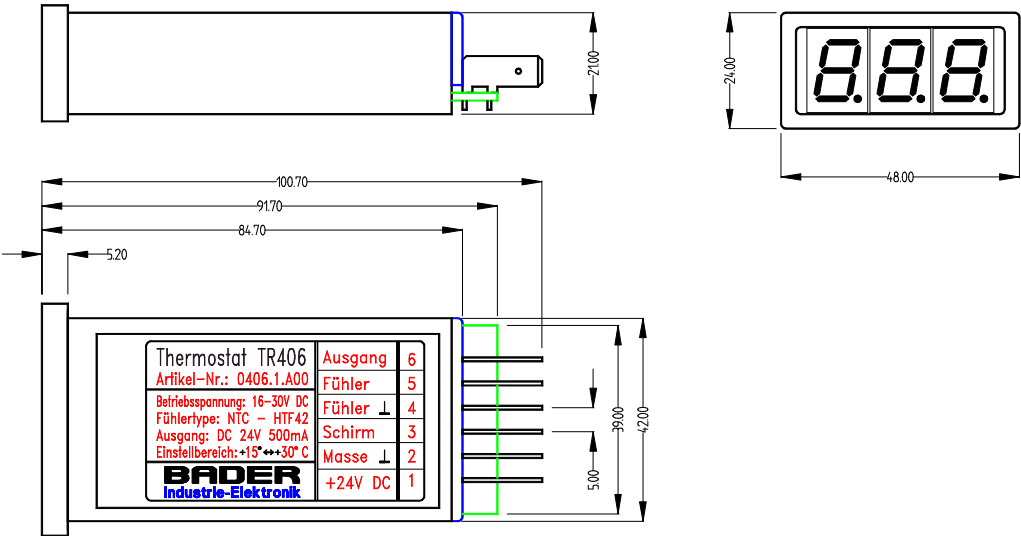
Thermostat TR-406

The Thermostat TR-282 is a electronic three-level controller for controlling of heating and cooling in climate control units and vehicles. Microproceccor- controlled, with triple-digit 7segm LED.

Nominal voltage:	24V DC
Voltage range:	16V to 30V DC
Control range:	+15°C to +30°C or 59°F to 88°F
Hystereses:	approx. 2K
Temperature sensor:	NTC 20kΩ
Digital output:	24V DC/ 0,5A kurzschlussfest
Power consumption without load	approx. 40mA
Operation temperature:	-40°C to +85°C
Storage stemperature:	-40°C to +85°C
Connector:	6 AMP- FASTON 6,3x0,8mm
Weight:	approx. 65g

Notice: sensor- and potentiometer lines more than 2 meter length must be shielded or twisted!

Dimensiones:



Subject to technical modifications!

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