

# NTC temperature sensors: -40° to 150°C

## Measurement of air temperatures

Output quantity: R

- Measurement with temperature-sensitive resistors.
- Broad temperature range.



### NTC temperature sensor

Plastic-sheathed NTC thermistor

#### Design and operation

NTC thermistors have a negative temperature coefficient, i.e. their electrical conductivity increases with increasing temperature (high-temperature conductor): Their resistance decreases.

The conductive element of the temperature sensor consists of semiconducting heavy metal oxides and oxidized mixed crystals, pressed or sintered into wafer or bead form using binding agents and provided with a protective enclosure. In combination with suitable evaluation circuits, such thermistors allow precise temperature determination. Depending on the housing design, the sensors are suitable for measuring temperatures in liquids and gases.

In motor vehicles they are used to measure the temperature of engine oil, coolant, fuel intake air and gas, i.e. in the range -40...150 °C.

#### Note

For a 2-pin connector, 1 connector housing, 2 contact pins and 2 individual seals are required.

Genuine Tyco crimping tools must be used for motor vehicle applications.

#### Explanation of characteristic quantities

R Resistance  $\vartheta$  Temperature

#### Installation instructions

The sensor is installed such that the front section with the sensing element is directly exposed to the air flow.

Robert Bosch GmbH  
Automotive Aftermarket  
Postfach 410960  
76225 Karlsruhe  
Germany

[www.bosch-sensoren.de](http://www.bosch-sensoren.de)



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## Part number

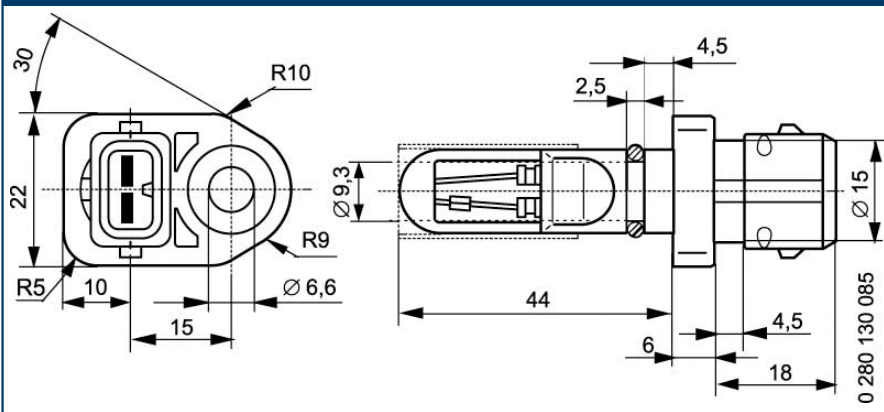
**0 280 130 085**

### Technical data

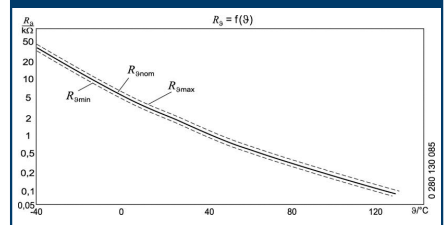
Perm. temperature max.	°C	130
Rated resistance at 20 °C	kΩ	2,4 ± 5,4 %
Resistance at +20 °C	kΩ	2,290 ... 2,551
Nominal voltage	V	5 ± 0,15
Max. measurement current	mA	1
Temperature/time constant $\tau_{G3^1}$	s	≤ 5
Approximate value for permissible vibration acceleration $a_{\text{sin}}$ (sinusoidal vibration)	m/s <sup>2</sup>	100
Corrosion-tested as per		DIN 50 018

Accessories are not included in the scope of delivery of the sensor and are therefore to be ordered separately as required. <sup>1)</sup> Available from Tyco Electronics.

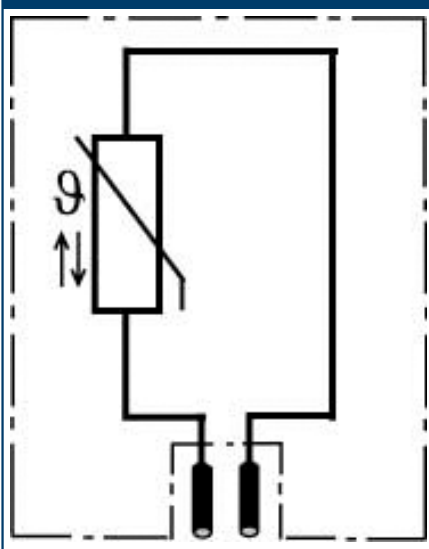
### Dimensional drawing



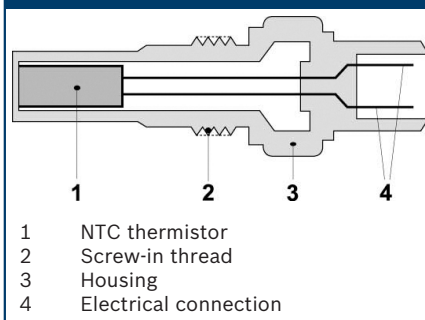
### Resistance profile of temperature sensor



### Circuit diagram



### Temperature sensor (block diagram)



### Accessories

### Part number

Jetronic connector		2-pin	1 928 402 078
Protective cap		Temperature-resistant; Contents: 1 x	1 280 703 031
Contact pins	For Ø 0.5...1.0 mm <sup>2</sup>	Tyco number	929 939-3 <sup>1)</sup>
Contact pins	For Ø 1.5...2.5 mm <sup>2</sup>	Tyco number	929 937-3 <sup>1)</sup>
Individual seal		For Ø 0.5...1.0 mm <sup>2</sup> ; Contents: 50 x	1 987 280 106
Individual seal		For Ø 1.5...2.5 mm <sup>2</sup> ; Contents: 20 x	1 987 280 107

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