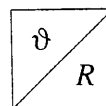
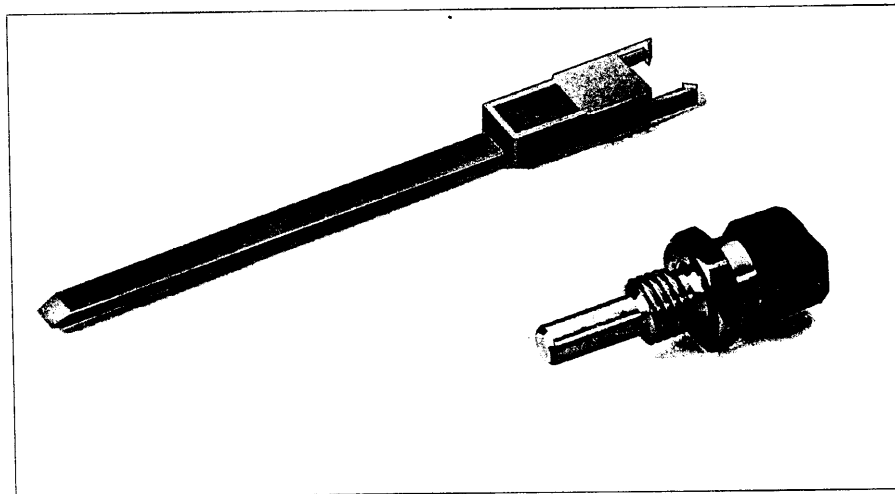


NTC temperature sensors

Measurement of liquid temperatures between -40°C and $+130^{\circ}\text{C}$



- For a wide variety of liquid-temperature measurements using temperature-dependent resistors



Range

NTC temperature sensor

Design: NTC pellet cast into a waterproof housing.

Application: This sensor is fitted between the evaporator fins on coolers.

1 147 212 031

Accessories

Socket housing AMP No. 925 014
Receptacle AMP No. 160 308-2

NTC temperature sensor

Design: NTC thermistor with plastic sheath in brass housing.

0 280 130 026

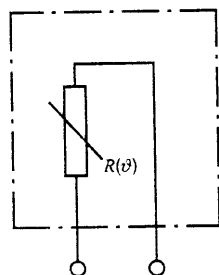
Accessories

Connector 1 237 000 036

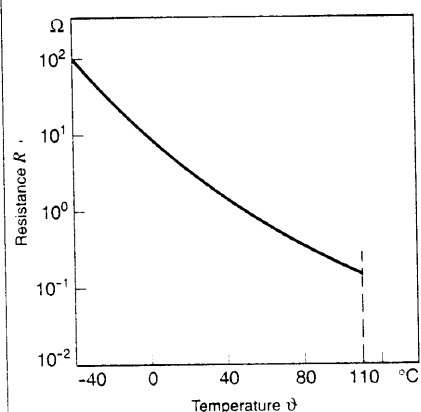
Technical data

Part No.	1 147 212 031	0 280 130 026
Characteristic curve	1	2
Measuring range $^{\circ}\text{C}$	$-40 \dots +110$	$-30 \dots +130$
Tolerance		
at 20°C $^{\circ}\text{C}$	—	1.2
at 100°C $^{\circ}\text{C}$	—	3.4
Measuring current through sensor, max. mA	—	5
Resistance at 0°C k Ω	$9 \pm 2\%$	—
Nominal resistance at 20°C k Ω	—	$2.5 \pm 5\%$
Resistance at		
– 10°C k Ω	—	8.26 ... 10.56
+ 20°C k Ω	—	2.28 ... 2.72
+ 80°C k Ω	—	0.290 ... 0.364
Permissible loading, max. at 55°C W	0.1	—
Power loss, max.		
at $\Delta T \approx 1\text{ K}$ and stationary water at 23°C mW	—	15
Nominal voltage V	—	5
Degree of protection	—	IP 54 A
Time constant in stationary water s	<3	—
Permissible vibration acceleration $\text{m} \cdot \text{s}^{-2}$	—	600
Corrosion-tested as per	—	DIN 50 018
Mean temperature coefficient $\Omega/^{\circ}\text{C}$	—	—
between $0 \dots 100^{\circ}\text{C}$		

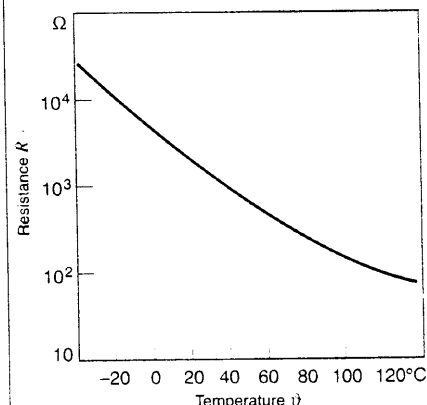
Diagram



Characteristic curve 1

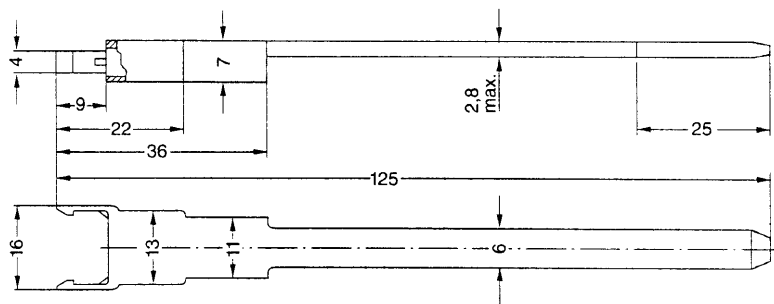


Characteristic curve 2

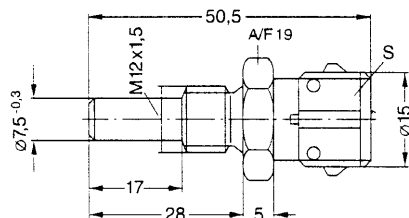


Dimension drawings

1 147 212 031



0 280 130 026



Design and function

NTC sensor

The sensing element of an NTC temperature sensor (NTC: Negative Temperature Coefficient) is a resistor made up of metal oxides and oxidized mixed crystals. This mixture is produced by means of sintering and pressing with the addition of bonding agents. The NTC thermistors are provided with a protective housing for automotive applications.

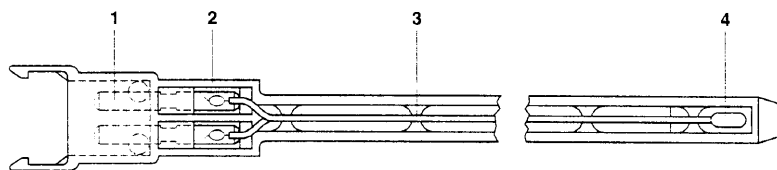
If NTC thermistors are exposed to a source of external heat, their resistance drops drastically. This property can be utilized for temperature measurement. NTC sensors are suitable for a very wide variety of ambient conditions, and their design is such that they permit the detection of liquid temperatures over a broad spectrum.

Explanation of symbols:

R Resistance
 ϑ Temperature

Temperature sensor 1 147 212 031

1 Electrical connection, 2 Housing, 3 Interconnecting wire, 4 NTC resistor.



Temperature sensor (Principle)

1 Electrical connection
 2 Housing
 3 NTC resistor, PTC resistor

