

General description

The temperature sensor is designed for the measurement, control and regulation of air, gases and liquids within the temperature range of -50 °C to +150 °C. The sensing element is an n-conducting silicon crystal in planar technology with a positive temperature coefficient. It has excellent long-term stability, with a near to linear characteristic.

The housing is made of stainless steel and the complete sensor have a protection class IP66. The small dimensions makes it easy to build in and gives a fast respons to temperature changes.



Application areas

- Mobile machinery; hydraulic system, hydrostatic transmissions.
- Automotive industry.
- Stationary industry.

Technical data

Electrical data

Maximum operating voltage:	25 V, $t < 10$ msec
Maximum operating current:	5 mA
Peak operating current:	10 mA < 10 msec
Operating current, nominal:	1 mA
Resistance:	$2000 \Omega \pm 1\%$ @ 25°C and 1 mA
Nominal supply voltage:	5 V
Insulation voltage to GND:	100 V
Thermal time constant, 63 % of ΔT :	$t(\text{oil}) = 4$ sec; $t(\text{air}) = 40$ sec

Polarity independent due to symmetrical design.

Temperature measuring range: -50°C to +150 °C

Material

Housing material, sensor element:
Stainless steel (BSS 303 / DIN 1.4305)

Weight

20 g

Environmental data

IP protection class: IP66

Mounting

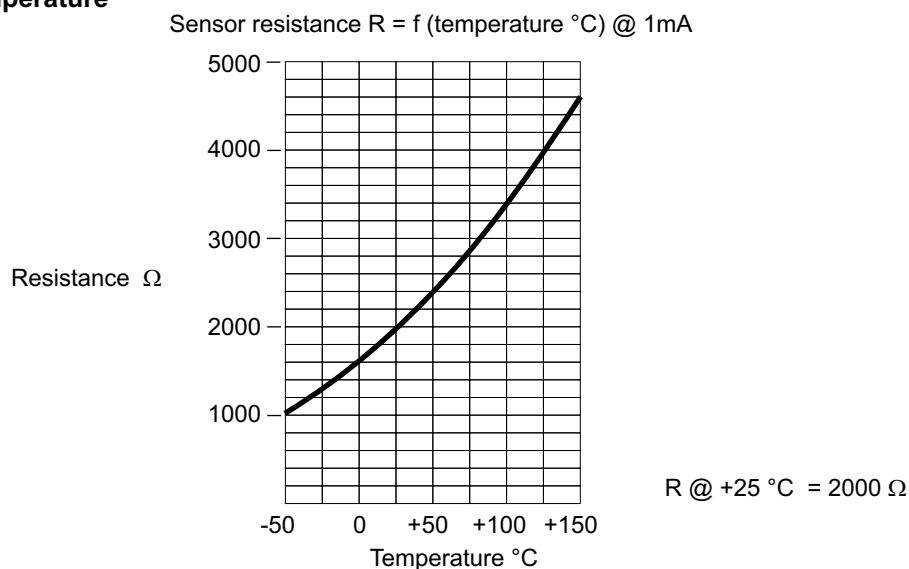
Max. tightening torque, mounting: 30 Nm

Note: When the temperature sensor is operated with long supply leads, it should be protected through the parallel connection of a > 10 nF capacitor to prevent damage to the sensor through induced voltage peaks.

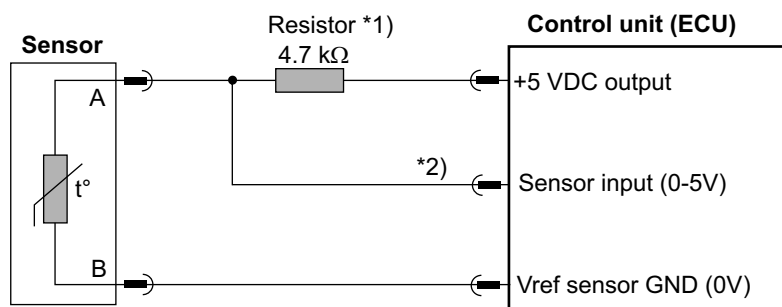
Ordering Information

Temperature sensor Part No. 8104 4010

Resistance versus temperature



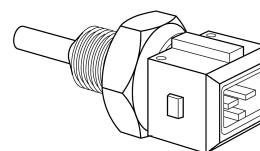
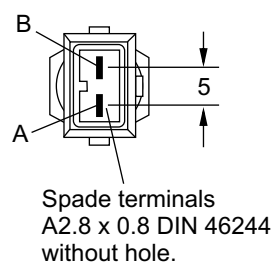
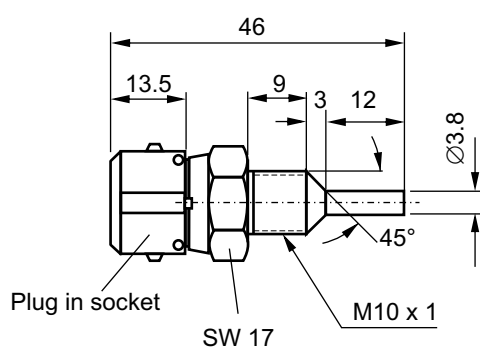
Electric connection to control unit



*1) Resistor not included in supply.

*2) Temperature range -50°C to $+150^\circ\text{C}$ corresponds to a voltage input signal to ECU, approx. : 0.88-2.5 Volt @5V supply.

Dimensions (mm)



Electric mating connector

Contacts (2x):	AMP	Part No: 925 590-1
Contact housing:	AMP-Junior Timer	Part No: 827 551-3
Rubber boot (cover) *:	Bosch	Part No: 1 280 703 026

Accessories

Adapter M10x1 - M14 x 1.5	Part No. 8104 4011
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***Note:** water tight only when used with cable $> \varnothing 4 \text{ mm}$