

# CCT pressure/ temperature sensor

For air-conditioning systems with heat pumps



## Product description



The CCT pressure temperature sensor is often used in heat pumps for climate control systems and in thermal management (battery), particularly in vehicles with alternative drives. The specially developed thermo receptors permit a fast response time in flowing media and guarantee the high accuracy of the temperature measurements.

The design excels due to its compact size and minimal weight, which makes it easy to integrate and ideal for lightweight systems. The specific evaluation electronics make the pressure and temperature signal available via a digital single wire interface (LIN) and auto addressing.

High quantities can be realised at an affordable price thanks to fully automated production.

## Fields of application

- Climate control system in vehicles with alternative drives
- Heat pump
- Thermal management (battery)

## Features

### Specially developed thermoreceptors

- Fast response time in moving fluids
- High temperature measuring accuracy

### Tried-and-tested stainless-steel measuring element

- Excellent long-term stability
- Good compatibility with fluids

### Small size

- Very easy to integrate
- Support for lightweight-construction concepts

### Application-specific evaluation electronics

- Tried-and-tested automotive EMC/ESD resistance
- Extended diagnostic and protective functions
- Verified LIN 2.1 conformity with sleep mode
- Pressure and temperature signal available via digital single-wire interface (LIN) and auto addressing

### Fully automated assembly

- Cost effective
- Large quantities can be produced

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## Technical Specifications

### Measurement range

|                  |                      |
|------------------|----------------------|
| Nominal pressure | 0–10 to 0–100 bar    |
| Over pressure    | 2 × nominal pressure |
| Burst pressure   | 3 × nominal pressure |
| Pressure type    | Relative             |

### Electrical characteristics

|                     |                                      |
|---------------------|--------------------------------------|
| Supply voltage      | 9–16 V                               |
| Current consumption | max. 10 mA                           |
| Output signals      | LIN 1.3 / LIN 2.1<br>auto addressing |

### Mechanical characteristics

|                     |                                                            |
|---------------------|------------------------------------------------------------|
| Measuring element   | Stainless steel cell with<br>resistive measuring<br>bridge |
| Housing material    | Aluminium                                                  |
| Pressure connection | HEX 24, M10                                                |
| Thread              | Male thread <sup>1)</sup>                                  |

### Dimensions

|                       |                             |
|-----------------------|-----------------------------|
| Electrical connection | 4-pin RD plug <sup>1)</sup> |
| Installation position | Any                         |
| Weight                | Approx. 15 g                |

### Accuracy

|                                       |                                               |
|---------------------------------------|-----------------------------------------------|
| Total pressure error                  | ± 0.5 % FS (0–90 °C)<br>± 1 % FS (–40–125 °C) |
| Total temperature error <sup>3)</sup> | ± 1 K <sup>2)</sup>                           |
| Response time (t <sub>90</sub> )      | 3 sec <sup>2)</sup>                           |

### Environmental conditions

|                             |                                        |
|-----------------------------|----------------------------------------|
| Operating temperature range | –40–125 °C                             |
| Media temperature range     | –40–150 °C                             |
| Media compatibility         | R134a, HFO 1234yf,<br>PAG oil, POE oil |

<sup>1)</sup> Other electrical connections available on request

<sup>2)</sup> Depending on installation situation

