# SIEMENS

1833P014

# Cable Temperature Sensor    QAP21.2

for applicatiions up to 180 °C

## Use

The cable temperature sensor is used for acquiring high medium temperatures. It is especially suited for acquiring the medium temperature in flat solar collectors.
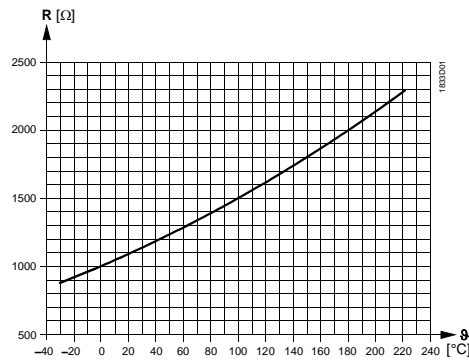
## Ordering

When ordering, please give type reference of cable temperature sensor and type reference of the accessories required.
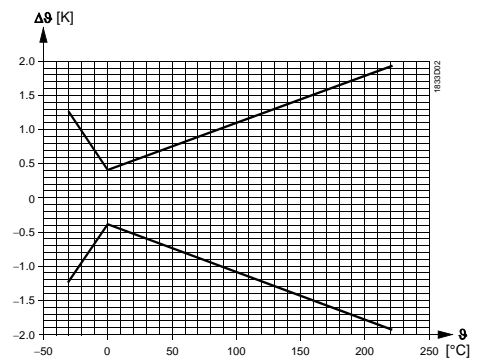
## Function

The sensor acquires the medium temperature in the solar panel with its nickel element. The resistance value of the element changes as a function of the temperature.
It is delivered for further handling by a suitable controller.

| Sensing element | Characteristic | Accuracy |
|---|---|---|



| Legend | R | Resistance value in Ohm |
|---|---|---|
| | ϑ | Temperature in degrees Celsius |
| | Δϑ | Temperature differential in Kelvin |

## Mechanical design

The cable temperature sensor consists of a sleeve (6 mm diameter, 50 mm long), sensing element and connecting cable with ferrules.
The sensing element is accommodated in the sleeve which is flat on one side and to which the connecting cable is attached.
The sensor is not suited for direct immersion in liquid media (without using a protection pocket).

## Accessories (not included with standard delivery)

| Name | Type reference |
|---|---|
| Protection pocket, Ms63, PN10, immersion length 100 mm | ALT-SB100 [1] |

1) For other protection pocket accessories, refer to Data Sheet N1194.

## Engineering notes

The permissible cable lengths are dependent on the type of controller used. For details, refer to the Data Sheet of the relevant controller.

## Mounting notes

On pipes

The following mounting choices exist:

- Up to medium temperatures of 85 °C: with plastic cable tie (supplied by thirds)
- Up to medium temperatures of 220 °C: with stainless steel cable tie (supplied by thirds)
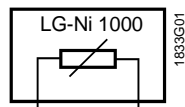


**A:** ≤ 85 °C     **B:** ≤ 220 °C
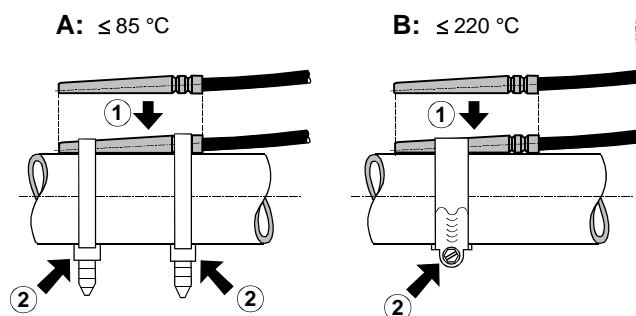
Indirect immersion

With the help of a protection pocket. The inside diameter of the pocket should match the diameter of the sensor's sleeve (e.g. 6.1 mm).
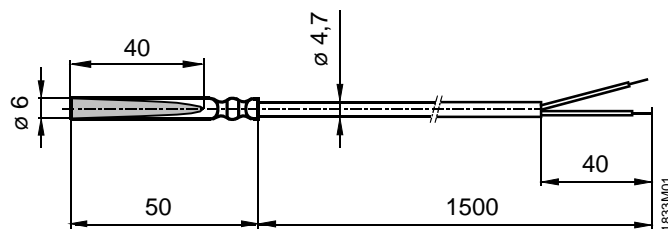The sensor is supplied complete with Mounting Instructions.

## Technical data

| | | |
|---|---|---|
| Functional data | Measurement range | −30 ... +180 °C |
| | max. (1-2 h/d) | 220 °C |
| | Sensing element | LG-Ni 1000 |
| | Time constant $t_{63}$ | |
| | When fitted to the pipe | <20 s |
| | With protection pocket | <30 s |
| | Measurement accuracy at 0 °C | ±0.4 K (refer to "Function") |
| | Measurement and output | passive |
| Protective data | Degree of protection | IP 67 to IEC 529 |
| | Safty class | III to EN 60 730 |
| Connections | Mechanically | cable tie or protection pocket |
| | | (supplied by thirds) |
| | Electrical connections | |
| | Connecting cable | 2-core, interchangeable, with ferrules |
| | Cable length | approx. 1.5 m |
| | Perm. cable length | refer to "Engineering notes" |
| Environmental conditions | Ambient temperature | |
| | Sensor sleeve | −30 ... +180 °C (220 °C for max. 1-2 h/d) |
| | Connecting cable | −50 ... +180 °C (220 °C for max. 1-2 h/d) |
| Materials | Sensor sleeve | stainless steel V4A (1.4571) |
| | Connecting cable | silicon |
| | Packaging (minigrip® bag) | PVC |
| Weight | Including packaging | 0.056 kg |

## Internal diagram



## Dimensions

**QAP21.2**



**ALT-SB100**



Dimensions in mm

Subject to change

Cable temperature sensor QAP21.2

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