Cable temperature sensor QAP21.2

for solar applications

Use

The cable temperature sensor is used for acquiring the water temperature in flat solar panels.

Ordering

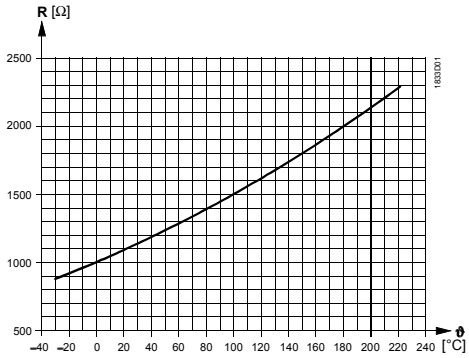
When ordering, please give name and type reference of the sensor.

Function

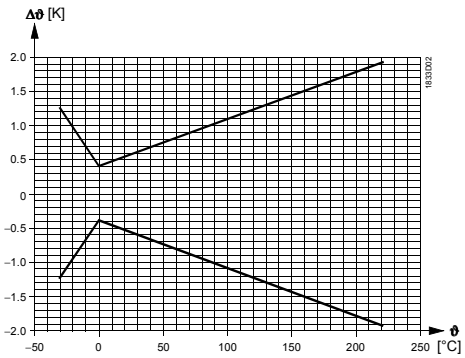
The sensor acquires the medium temperature in the solar panel with its nickel element.
The resistance value of the element changes as a function of the temperature.
It is delivered for further handling by a suitable controller.

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).

Engineering notes

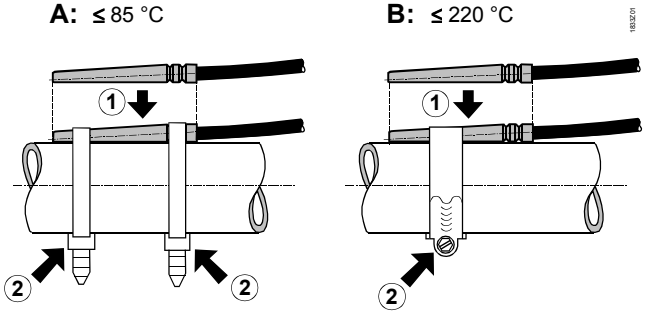
The permissible cable lengths are dependent on the type of controller used. For details, refer to the Data Sheet of the relevant controller.

Mounting notes

The following mounting choices exist:

On pipes

- 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)



Indirect immersion

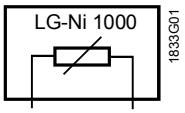
With the help of a protection pocket. The inside diameter of the pocket should match the diameter of the sensor's sleeve (e.g. 6.1 mm).

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 (in mm)