SIEMENS 1⁸⁰¹



Strap-on temperature sensor

QAD2...

- Strap-on sensor for acquiring the temperature of pipework.
- Range of use -30... 125/130 °C / 5...95 % r. F. non-condensing (not suitably for chillers)

Use

Acquisition of temperature of pipework for

- controlling or limiting the flow temperature
- limiting the return temperature
- controlling the d.h.w. temperature

Type summary

Type reference	Sensing element	Range of use	Time constant
QAD22	LG-Ni 1000	-30+130 °C	3 s
QAD2010	Pt 100	-30+130 °C	3 s
QAD2012	Pt 1000	-30+130 °C	3 s
QAD2030	NTC 10k	-30+125 °C	6 s

Ordering

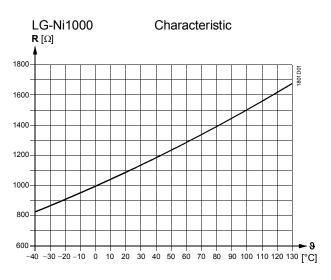
When ordering, please give type reference, e.g.: Strap-on temperature sensor QAD2...

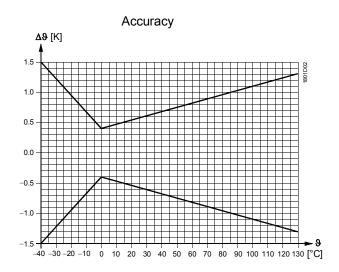
Equipment combinations

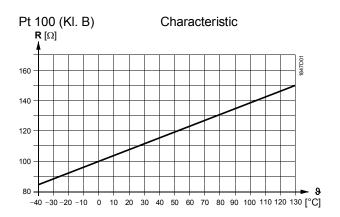
The QAD2... is suited for use with all types of controllers that can handle analog passive sensor signals.

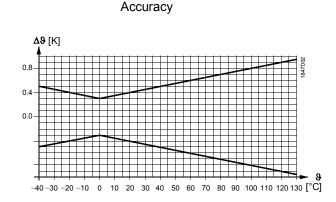
The sensor's nickel sensing element acquires the temperature of pipework. The resistance of the sensing element changes as a function of the medium temperature. The resistance value is used for handling by a suitable controller.

Sensing element

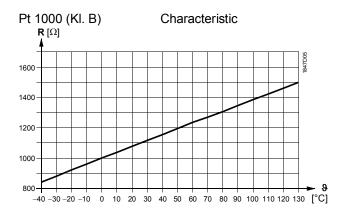


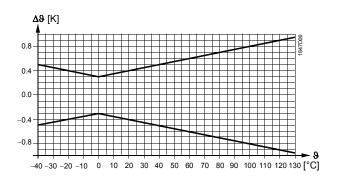


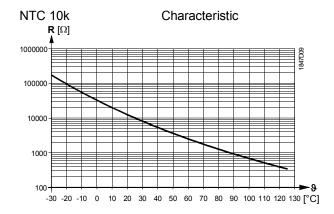


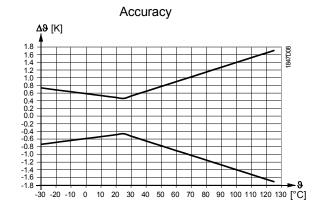


Accuracy









Legend

- R Resistance in Ohm
- 9 Temperature in degrees Celsius
- $\Delta \vartheta$ Temperature differential in Kelvin

Mechanical design

The strap-on temperature sensor consists of the following components:

- Two-sectional plastic housing comprised of base with connection terminals, grommet and removable cover (snap-on design)
- The coupling sheet with sensing element is flexible and adapts to the pipe's surface
- Mounting clamp (adjustable strap-on band) for pipe diameters from 15...140 mm

The connection terminals can be accessed after removing the housing cover. Cable entry is made via a grommet (tension relief into housing). If required, the grommet can be replaced by a Pg 11 cable entry gland.

Engineering notes

The permissible cable lengths are dependent on the controller with which the sensor is used. They are specified in the Data Sheet of the relevant controller.

Mounting and installation notes

Depending on the application, the sensor is to be located as follows:

- For flow temperature control:
 - In the heating flow:
 - Directly after the pump if the pump is located in the flow
 - 1.5 to 2 m after the mixing valve if the pump is located in the return
- For limiting the return temperature:

In the return at a location where the temperature can be correctly acquired

The water must be well mixed where the temperature is acquired.

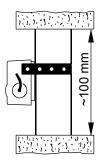
The pipe may not be lagged in the vicinity of the sensor.

The sensor should be mounted such that the cable does not enter from the top.

Permitted mounting positions







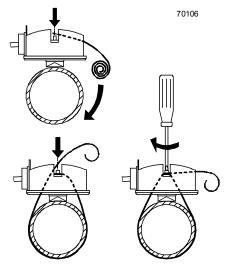
Not permitted mounting position



Fixing

Mounting Instructions are printed on the packaging.

- Remove any paint on the pipe before fitting the strap-on temperature sensor.
- Ensure that the sensor is fixed firmly with the adjustable band supplied.



Disposal



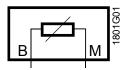
The device is considered electrical and electronic equipment for disposal in terms of the applicable European Directive and may not be disposed of as domestic garbage.

- Dispose of the device via the channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

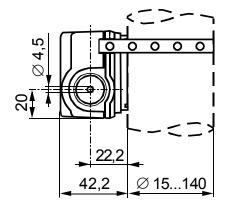
Technical data

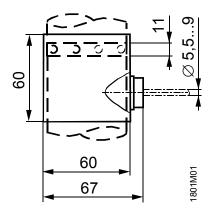
General sensor data	Range of use	refer to "Type summary"	
	Sensing element	refer to "Type summary"	
	Time constant t ₆₃	refer to "Typ summary"	
		(referred to the pipe's surface)	
	Measurement accuracy	refer to "Function"	
	Measured medium	water, other liquid media	
	Type of measurement and output	passive	
Degree of protection	Protection class	III according to EN 60730-1	
	Protection degree of housing	IP42 according to IEC 60529	
Electrical connections	Screw terminals for	max. 1x 2.5 mm ²	
	Cable entry	grommet for cable of 5.57.2 mm dia.	
	Pg 11 cable entry gland	can be fitted	
	Permitted cable lengths	refer to Data Sheet of controller	
Environmental conditions	Operation	as per IEC 60721-3-3	
	Climatic conditions	class 3K5	
	Temperature (housing)	−5+50 °C	
	Humidity (housing)	595 % r.h.	
	Transport	as per IEC 60721-3-2	
	Climatic conditions	class 2K3	
	Temperature	−25+70 °C	
	Humidity	<95 % r.h.	
	Mechanical conditions	class 2M2	
Materials	Base	PA-GF35	
	Housing cover	ASA Luran S	
	Adjustable strap-on band	stainless steel	
Directives and	Product standard	EN 60730-1	
Standards		Automatic electrical controls for	
		household and similar use	
	EU conformity (CE)	8000073890 *)	
Environmental	The product environmental declaration CE1E1701 ^{*)} contains data on environmentall		
compatibility	compatible product design and assessments (RoHS compliance, materials		
	composition, packaging, environmental benefit, disposal).		
	Packaging	Cardboard	
Colors	Base	silver-grey, RAL 7001	
	Housing cover	light-grey, RAL 7035	
Weight	without packaging	0.072 kg	
	incl. packaging	0.083 kg	

Internal diagram



The connecting wires are interchangeable.





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