SIEMENS



Strap-on temperature sensor

QAD2... FA-T1G

- 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 |
| FA-T1G | T1 (PTC) | -30+130 °C | 3 s |

Ordering

When ordering, please give type reference,z.B: Strap-on temperature sensor QAD2...

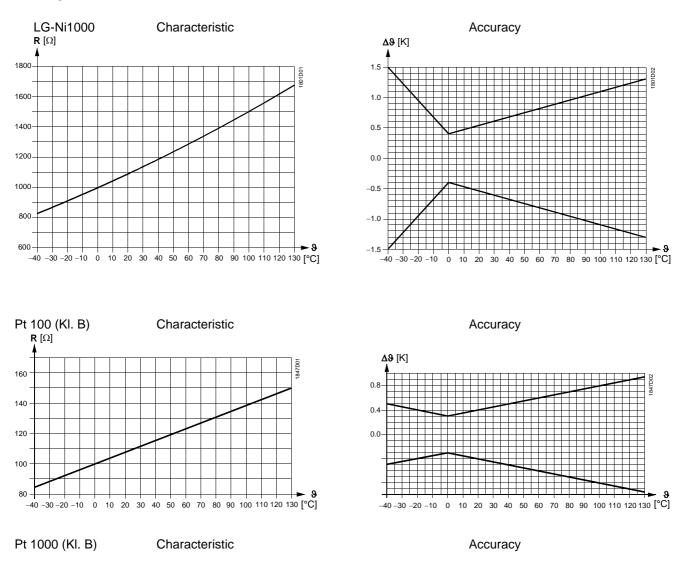
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The QAD2... is suited for use with all types of controllers that can handle analog passive sensor signals.

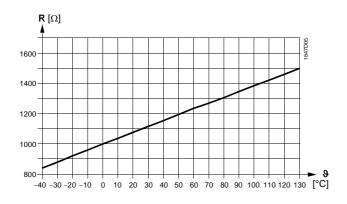
Function

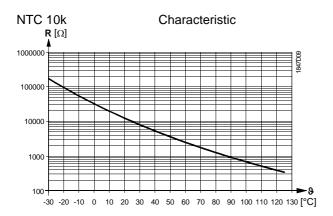
The sensor's nickel sensing element acquires the temperature of pipework. The resistance of the sensing element changes as a function of the medium temperature. The resistance value is used for handling by a suitable controller.

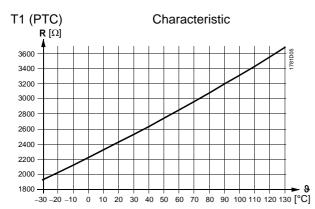
Sensing element



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Legend

- R Resistance in Ohm
- 9 Temperature in degrees Celsius
- Δ9 Temperature differential in Kelvin

Mechanical design

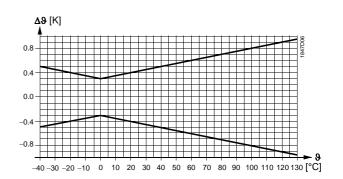
The strap-on temperature sensor consists of the following components:

- 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

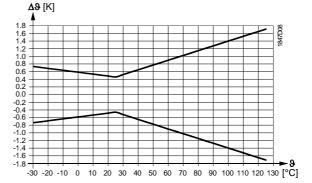
The connection terminals can be accessed after removing the housing cover. Cable entry is made via a grommet (tension relief into housing). If required, the grommet can be replaced by a Pg 11 cable entry gland.



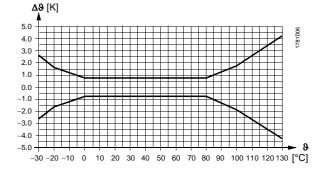
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Accuracy







Technical data

| Sensing element refer to "Type summary" (referred to the pipe's surface) Measurement accuracy refer to "Typ summary" (referred to the pipe's surface) Measurement accuracy refer to "Function" Measurement accuracy refer to "Function" Degree of protection and safety class Degree of protection IP 42 as per IEC 529 Electrical connections Screw terminals for max. 1x 2.5 mm² 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 Cable entry Environmental conditions Operation as per IEC 721-3-3 Climatic conditions Climatic conditions class 3K5 Temperature (housing) -5+50 °C Humidity (housing) 595 % r.h. Transport as per IEC 721-3-2 Climatic conditions class 2K3 Temperature -25+70 °C Humidity vas per NeC F35 Housing cover ASA Luran S Adjustable strap-on band stainless steel Packaging cardboard Colors Base silver-grey, RAL 7001 Housing cover | General sensor data | Range of use | refer to "Type summary" | |
|--|--------------------------|--------------------------------|-------------------------------------|--|
| Image: constraint of the pipe's surface) Image: constraint of the pipe's surface) Measurement accuracy refer to "Function" Measured medium water, other liquid media Type of measurement and output passive Degree of protection Degree of protection IP 42 as per IEC 529 and safety class Safety class III as per EN 60 730 Electrical connections Screw terminals for max. 1x 2.5 mm² 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 class 3K5 Temperature (housing) -5+50 °C Humidity (housing) 595 % r.h. Transport as per IEC 721-3-2 Climatic conditions class 2K3 Temperature -25+70 °C Humidity <95 % r.h. | | Sensing element | refer to "Type summary" | |
| Measurement accuracyrefer to "Function"Measured mediumwater, other liquid mediaType of measurement and outputpassiveDegree of protectionIP 42 as per IEC 529and safety classSafety classElectrical connectionsScrew terminals formax. 1 x 2.5 mm²Cable entrygrommet for cable of 5.57.2 mm dia.Pg 11 cable entry glandcan be fittedPermitted cable lengthsrefer to Data Sheet of controllerEnvironmental conditionsOperationas per IEC 721-3-3Climatic conditionsclass 3K5Temperature (housing)-5+50 °CHumidity (housing)595 % r.h.Transportas per IEC 721-3-2Climatic conditionsclass 2K3Temperature-25+70 °CHumidity<95 % r.h. | | Time constant t ₆₃ | refer to "Typ summary" | |
| Measured mediumwater, other liquid mediaType of measurement and outputpassiveDegree of protectionIP 42 as per IEC 529and safety classSafety classElectrical connectionsScrew terminals formax. 1x 2.5 mm²Cable entrygrommet for cable of 5.57.2 mm dia.Pg 11 cable entry glandcan be fittedPermitted cable lengthsrefer to Data Sheet of controllerEnvironmental conditionsOperationas per IEC 721-3-3Climatic conditionsclass 3K5Temperature (housing)-5+50 °CHumidity (housing)595 % r.h.Transportas per IEC 721-3-2Climatic conditionsclass 2K3Temperature-25+70 °CHumidity<95 % r.h. | | | (referred to the pipe's surface) | |
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| Degree of protection and safety classDegree of protection Degree of protectionIP 42 as per IEC 529and safety classSafety classIII as per EN 60 730Electrical connectionsScrew terminals for Cable entry Pg 11 cable entry gland Permitted cable lengthsmax. 1x 2.5 mm²Environmental conditionsNeg 11 cable entry gland Permitted cable lengthsrefer to Data Sheet of controllerEnvironmental conditionsOperation Climatic conditions Temperature (housing) Humidity (housing)s95 % r.h.Transport Climatic conditionsas per IEC 721-3-2 Climatic conditions Climatic conditionsclass 2K3 | | Measured medium | water, other liquid media | |
| and safety classSafety classIII as per EN 60 730Electrical connectionsScrew terminals for Cable entry Pg 11 cable entry glandmax. 1 x 2.5 mm²Environmental conditionsPg 11 cable entry glandcan be fittedPermitted cable lengthsrefer to Data Sheet of controllerEnvironmental conditionsClimatic conditions Temperature (housing)class 3K5 -5+50 °C Humidity (housing)Transportas per IEC 721-3-2 Climatic conditionsclass 2K3 Temperature -25+70 °C HumidityMaterialsBasePA-GF35 Housing coverASA Luran S Adjustable strap-on band PackagingColorsBasesilver-grey, RAL 7001 Housing coversilver-grey, RAL 7035 | | Type of measurement and output | passive | |
| Electrical connectionsScrew terminals for Cable entry Pg 11 cable entry gland ermitted cable lengthsmax. 1 x 2.5 mm² can be fitted Permitted cable entry gland can be fitted Permitted cable lengthsEnvironmental conditionsOperation Climatic conditions Humidity (housing)as per IEC 721-3-3 Climatic conditions class 3K5 Temperature (housing) Humidity (housing)Transport Humidity Mechanical conditionsas per IEC 721-3-2 Climatic conditions class 2K3 Temperature -25+70 °C Humidity Mechanical conditionsMaterialsBase Housing coverPA-GF35 Housing coverMaterialsBase Adjustable strap-on band PackagingASA Luran S cardboardColorsBase Base packagingsilver-grey, RAL 7001 light-grey, RAL 7035 | Degree of protection | Degree of protection | IP 42 as per IEC 529 | |
| Cable entrygrommet for cable of 5.57.2 mm dia.Pg 11 cable entry glandcan be fittedPermitted cable lengthsrefer to Data Sheet of controllerEnvironmental conditionsclass 3K5Climatic conditionsclass 3K5Temperature (housing)-5+50 °CHumidity (housing)595 % r.h.Transportas per IEC 721-3-2Climatic conditionsclass 2K3Temperature-25+70 °CHumidity<95 % r.h. | and safety class | Safety class | III as per EN 60 730 | |
| Pg 11 cable entry glandcan be fittedPermitted cable lengthsrefer to Data Sheet of controllerEnvironmental conditionsas per IEC 721-3-3 Climatic conditionsclass 3K5 class 3K5 class 3K5Temperature (housing)-5+50 °C Humidity (housing)595 % r.h.Transportas per IEC 721-3-2 Climatic conditionsclass 2K3 class 2K3 class 2K3Temperature-25+70 °C Humidity495 % r.h.MaterialsBase Housing coverPA-GF35 Adjustable strap-on bandMaterialsBase Packagingstainless steel packagingColorsBase housing coversilver-grey, RAL 7001 light-grey, RAL 7035 | Electrical connections | Screw terminals for | max. 1 x 2.5 mm ² | |
| Permitted cable lengthsrefer to Data Sheet of controllerEnvironmental conditionsOperationas per IEC 721-3-3Climatic conditionsclass 3K5Temperature (housing)-5+50 °CHumidity (housing)595 % r.h.Transportas per IEC 721-3-2Climatic conditionsclass 2K3Temperature-25+70 °CHumidity<95 % r.h. | | Cable entry | grommet for cable of 5.57.2 mm dia. | |
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| Climatic conditionsclass 3K5Temperature (housing)-5+50 °CHumidity (housing)595 % r.h.Transportas per IEC 721-3-2Climatic conditionsclass 2K3Temperature-25+70 °CHumidity<95 % r.h. | | Permitted cable lengths | refer to Data Sheet of controller | |
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| Humidity (housing)595 % r.h.Transportas per IEC 721-3-2Climatic conditionsclass 2K3Temperature-25+70 °CHumidity<95 % r.h. | | Climatic conditions | class 3K5 | |
| Transportas per IEC 721-3-2Climatic conditionsclass 2K3Temperature-25+70 °CHumidity<95 % r.h. | | Temperature (housing) | −5+50 °C | |
| Climatic conditionsclass 2K3Temperature-25+70 °CHumidity<95 % r.h. | | Humidity (housing) | 595 % r.h. | |
| Temperature Humidity-25+70 °C <95 % r.h. class 2M2MaterialsBase Housing coverPA-GF35Housing coverASA Luran S Adjustable strap-on bandstainless steelPackagingcardboardColorsBase Housing coversilver-grey, RAL 7001 light-grey, RAL 7035 | | Transport | as per IEC 721-3-2 | |
| Humidity<95 % r.h. class 2M2MaterialsBasePA-GF35Housing coverASA Luran SAdjustable strap-on bandstainless steelPackagingcardboardColorsBasesilver-grey, RAL 7001 light-grey, RAL 7035 | | Climatic conditions | class 2K3 | |
| MaterialsMechanical conditionsclass 2M2MaterialsBasePA-GF35Housing coverASA Luran SAdjustable strap-on bandstainless steelPackagingcardboardColorsBasesilver-grey, RAL 7001Housing coverlight-grey, RAL 7035 | | Temperature | −25+70 °C | |
| MaterialsBasePA-GF35Housing coverASA Luran SAdjustable strap-on bandstainless steelPackagingcardboardColorsBasesilver-grey, RAL 7001Housing coverlight-grey, RAL 7035 | | Humidity | <95 % r.h. | |
| Housing coverASA Luran SAdjustable strap-on bandstainless steelPackagingcardboardBasesilver-grey, RAL 7001Housing coverlight-grey, RAL 7035 | | Mechanical conditions | class 2M2 | |
| Adjustable strap-on bandstainless steelPackagingcardboardColorsBasesilver-grey, RAL 7001Housing coverlight-grey, RAL 7035 | Materials | Base | PA-GF35 | |
| PackagingcardboardColorsBasesilver-grey, RAL 7001Housing coverlight-grey, RAL 7035 | | Housing cover | ASA Luran S | |
| Colors Base silver-grey, RAL 7001 Housing cover light-grey, RAL 7035 | | Adjustable strap-on band | stainless steel | |
| Housing cover light-grey, RAL 7035 | | Packaging | cardboard | |
| | Colors | Base | silver-grey, RAL 7001 | |
| | | Housing cover | light-grey, RAL 7035 | |
| Weight without packaging 0.072 kg | Weight | without packaging | 0.072 kg | |
| incl. packaging 0.083 kg | | incl. packaging | 0.083 kg | |

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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:

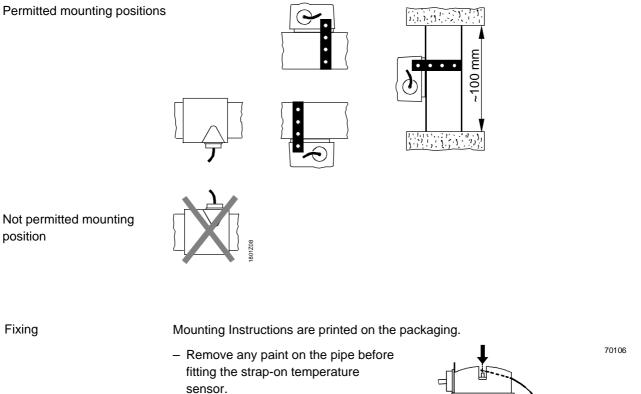
- For flow temperature control:
 - In the heating flow:
 - Directly after the pump if the pump is located in the flow
 - 1.5 to 2 m after the mixing valve if the pump is located in the return
- For limiting the return temperature:

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

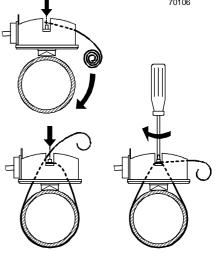
The water must be well mixed where the temperature is acquired.

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

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



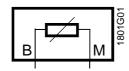
 Ensure that the sensor is fixed firmly with the adjustable band supplied.



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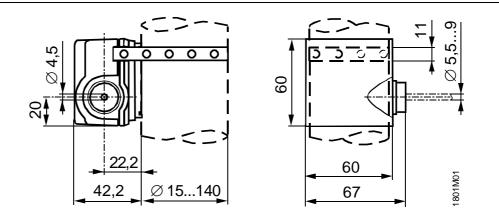
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The connecting wires are interchangeable.

Dimensions (in mm)



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