Mounting flange AQM63.0

QAM2110.040, QAM2120.040

QAM2120.200, QAM2120.600

Symaro™

Duct Temperature Sensors QAM21...

Passive sensors for acquiring the air temperature in air ducts.

Use

The duct temperature sensors are for use in ventilation and air conditioning plants as:

- Supply or extract air temperature sensors
- Limit sensors, e.g. for minimum limitation of the supply air temperature
- Reference sensors, e.g. for shifting the room temperature as a function of the outside temperature
- Measuring sensors, e.g. for measured value indication or for connection to a building automation and control system

Type summary

Type reference	*Probe length*	*Mounting clamps*	*Sensing element*
QAM2110.040	0,4 m	keine	Pt 100
QAM2112.040	0,4 m	keine	Pt 1000
QAM2112.200	2,0 m	4 Stück	Pt 1000
QAM2120.040	0,4 m	keine	LG-Ni 1000
QAM2120.200	2,0 m	4 Stück	LG-Ni 1000
QAM2120.600	6,0 m	6 Stück	LG-Ni 1000
QAM2130.040	0,4 m	keine	NTC 10k
QAM2140.020	0,2 m	keine	T1 (PTC)

Accessories
(Spare parts)

Name	*Type reference*
Capillary tube clamb for the QAM2120.200 and QAM2120.600 (6 pieces)	**AQM63.3**
Monting flange	**AQM63.0**

Ordering and delivery

When ordering, please give name and type reference, e.g.:
Duct temperature sensor **QAM2120.040**

The sensor is supplied complete with mounting flange AQM63.0 and, if required, mounting clamps AQM63.3.

Equipment combinations

All systems or devices capable of acquiring and handling the sensor's passive output signal.

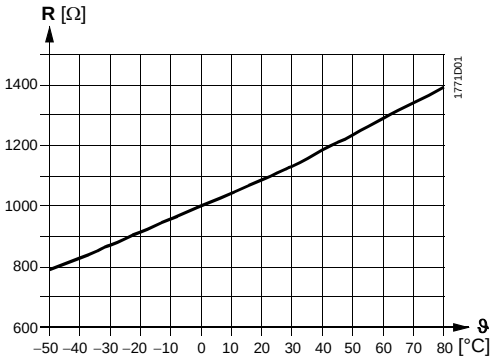
Function

The sensor acquires the air temperature via its sensing element whose resistance changes as a function of the temperature. The signal is delivered to a suitable controller for further handling.

Sensing elements

LG-Ni 1000

Characteristic:



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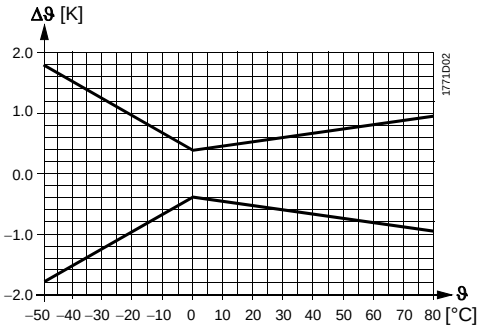
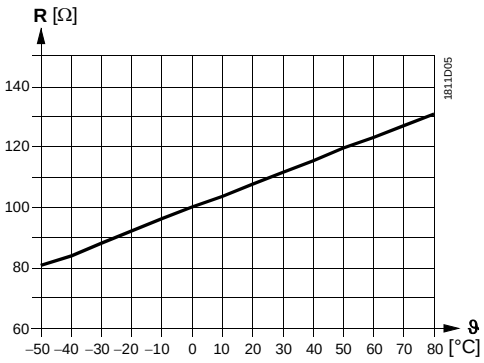


Pt 100 (class B)

Characteristic:



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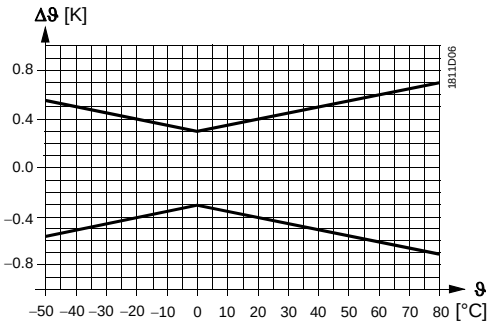

Pt 1000 (class B)

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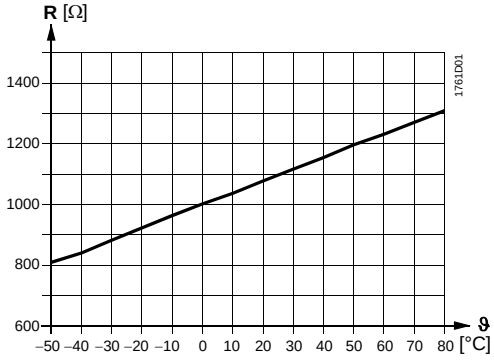

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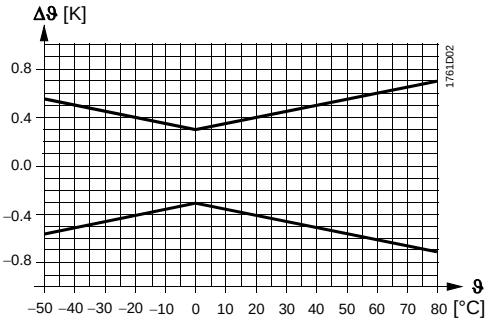
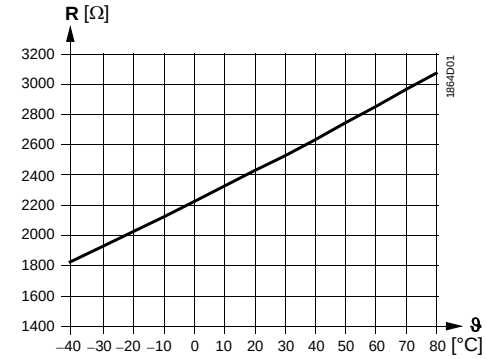


T1 (PTC)

Characteristic:



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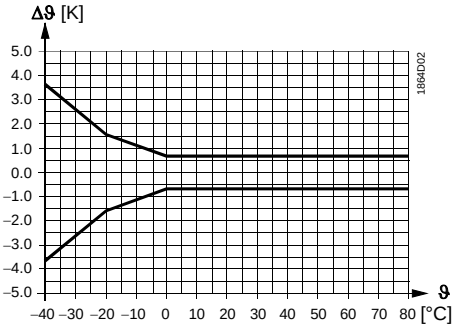
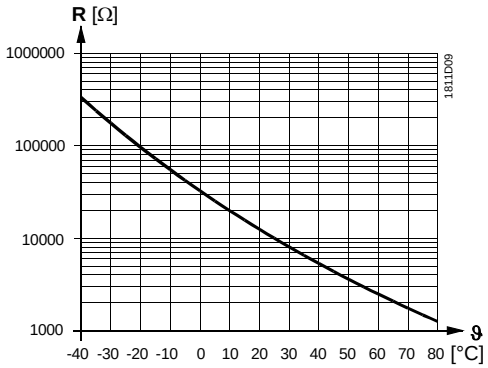


NTC 10k

Characteristic:



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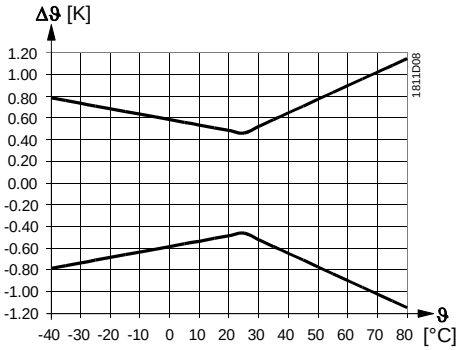


Legend

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

Mechanical design

The duct temperature sensor consists of the following components:

- Two-sectional plastic housing comprised of base with connection terminals and removable cover (snap-on design)
- Fully active, flexible probe with sensing element which acquires the average temperature

The connection terminals can be accessed after removing the cover. Cable entry is made via a grommet which, if required, can be replaced by a cable entry gland M16 (IP 54).

After fitting the mounting flange, the sensor can be installed in 6 different immersion positions so that the sensor housing is always located outside the insulation for layers up to 70 mm. The probe with a length of 2 or 6 m is to be fitted across the air duct with the help of the mounting clamps supplied with the sensor.

Mounting notes

Mounting location

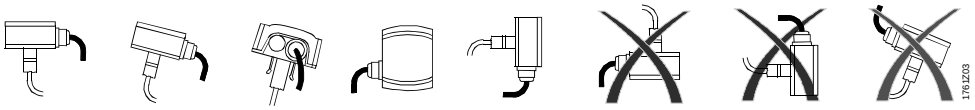
- *For supply air temperature control:* Downstream from the fan, if the fan is located after the last air handling unit. Otherwise, after the last air handling unit with a minimum distance of 0.5 m
- *For extract air temperature control:* Always upstream of the extract air fan
- *As a limit sensor for the supply air temperature:* As close as possible to the air outlet into the room
- *For dew point control:* Immediately after the spray trap of the air washer

Manually bend the probe so that it lies diagonally across the duct or in equally spaced windings across the entire duct cross-section. The probe must not touch the duct wall.

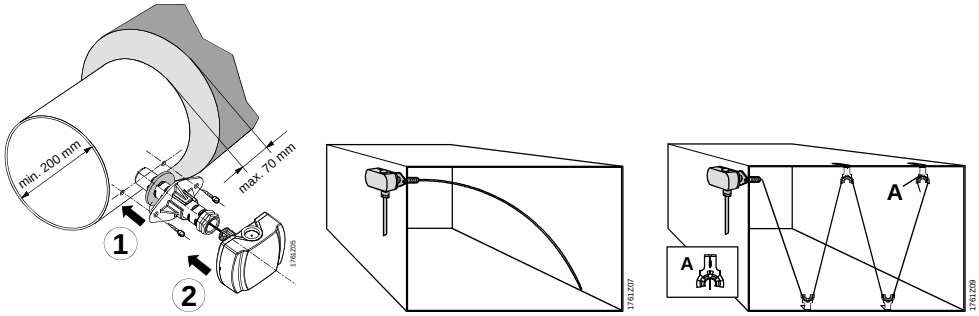
The sensor is supplied complete with Mounting Instructions.

Mounting positions

permitted: *not permitted:*



Mounting examples

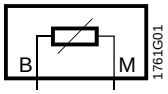


Technical data

Functional data	Operating range	−40...+80 °C for NTC type −50...+80 °C other types
	Sensing element	refer to "Type summary“
	Probe Length Min. bending radius	 refer to "Type summary“ 10 mm
	Time constant	30 s at 2 m/s
	Dead time	< 1 s
	Measuring accuracy	refer to “Function"
Protective data	Protection standard of housing With cable entry gland M 16 x 1.5	IP 42 to IEC 529 IP 54 to IEC 529 (not included as standard)
	Safety class	III to EN 60 730 (only with SELV or PELV)
Electrical connections	Screw terminals for	1 x 2.5 mm^2 or 2 x 1.5 mm^2
	Cable entry Grommet Cable entry gland	 for 5.5...7.2 mm dia. cable M 16 x 1.5 can be fitted
	Perm. cable lengths	refer to Data Sheet of the relevant controller
Environmental conditions	Operation Climatic conditions Temperature (housing) Humidity (housing)	to IEC 721-3-3 class 3K5 −40...+70 °C 5...95 % r. h.
	Transport Climatic conditions Temperature Humidity Mechanical conditions	to IEC 721-3-2 class 2K3 −25...+70 °C < 95 % r. h. class 2M2

Materials and colors	Probe	copper, polyolefine
	Base	polycarbonate, RAL 7001 (silver-grey)
	Cover	polycarbonate, RAL 7035 (light-grey)
	Mounting flange	PA 66 (black)
	Clamps	PA-GF 35 (black)
	Packaging	corrugated cardboard
Weight	Incl. packaging	
	QAM2110.040	ca. 0,15 kg
	QAM2112.040	ca. 0,15 kg
	QAM2112.200	ca. 0,3 kg
	QAM2120.040	ca. 0,15 kg
	QAM2120.200	ca. 0,30 kg
	QAM2120.600	ca. 0,53 kg
	QAM2130.040	ca. 0,15 kg
	QAM2140.020	ca. 0,15 kg

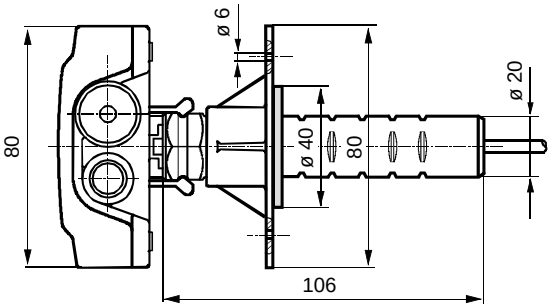
Internal diagram



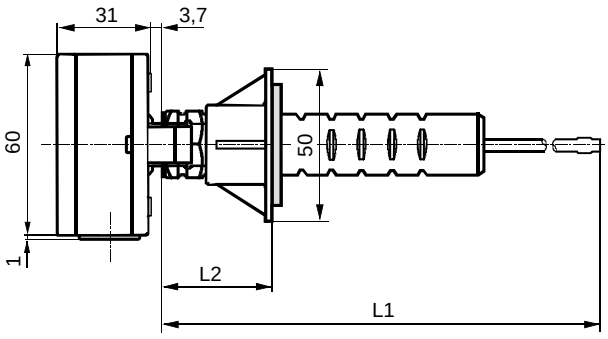
The internal diagram is identical for all types of duct temperature sensors covered by this Data Sheet.

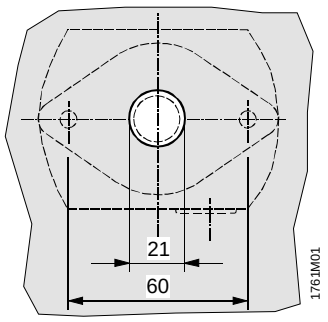
The connecting wires are interchangeable.

Dimensions



Typ	L1	L2	
		max.	min.
QAM2140.020	200	97	37
QAM2130.040	400	97	37
QAM2110.040	400	97	37
QAM2120.040	400	97	37
QAM2112.040	400	97	37
QAM2112.200	2000	97	37
QAM2120.200	2000	97	37
QAM2120.600	6000	97	37





Drilling plan

Dimensions in mm