SIEMENS

Room temperature sensors

AQR2531...

- **Passive sensor to acquire room temperature.**
- **Field of use 0…+50 °C / 0…95 %r.h. (non-condensing)**

Use

In heating, ventilation and air conditioning plants, primarily in the comfort range for acquiring room temperature.

Type summary

Product number	Stock number	Sensing element	Field of use	Time constant
AQR2531ANW	S55720-S133	LG-Ni1000	0…50 °C	ca. 12 min
AQR2531BNW	S55720-S134	Pt1000	0…50 °C	ca. 12 min
AQR2531FNW	S55720-S135	NTC 10k	0…50 °C	ca. 12 min

Ordering

When ordering, please give name and type reference of the controller, for example:
Room temperature sensor **AQR2531ANW.**
Place a separate order for the mounting plates AQR2500N and design frames AQR2500N…W listed in the "Accessories" section.

Equipment combinations

All systems and devices that record and process the sensor's passive output signal.

Accessories

Format		Mounting plates			Siemens design frames *(titan white)*			
		Type	*Item no.*	*Dimensions*	*Type*	*Item no.*	*Name*	*Dimensions*
	CEE/VDE	AQR2500NF	S55720-S161	70,8 x 70,8 mm	AQR2510NFW	S55720-S158	DELTA line	80 x 80 mm
	British Standard	AQR2500NH	S55720-S162	83 x 83 mm	AQR2510NHW	S55720-S159	DELTA miro	90 x 90 mm

Third-party design frames

The sensor can be combined with the design frames from the following third manufacturers:

Manufacturer	Type
SIEMENS	Delta Line
	Delta Vita
	Delta Miro
	Delta profile (with intermediate frames).
BERKER	B.1
	B.7
Feller	EDIZIOdue + PRESTIGE (with intermediate frames).
GIRA	E2
	Event
JUNG	Ap581 ALWW
	A500 (A581 WW)
	AS500 (AS 581 WW)
MERTEN	SYSTEM M

We recommend comparing the frame dimensions of third-party frames to the dimensions listed in section "Dimensions".

Functions

The sensor measures the room temperature using a sensing element whose electric resistance changes as a function of the ambient air temperature.

The following sensing elements are available depending on the front module (see "Type summary"):
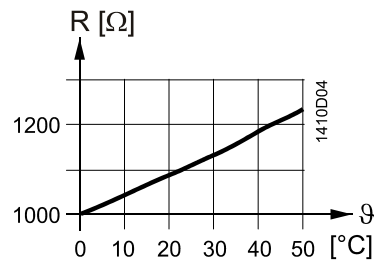- LG-Ni1000 or
- Pt 1000 or
- NTC 10k

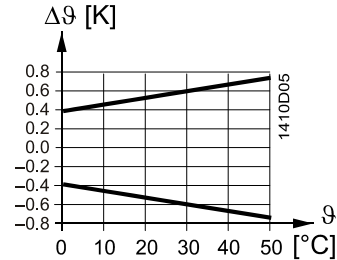The sensing signal (Resistance) is provided for processing by a suitable control device.
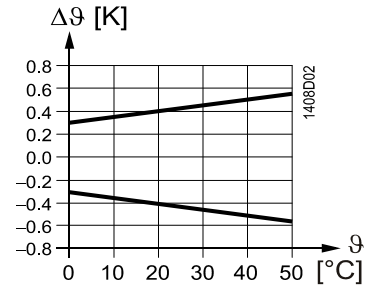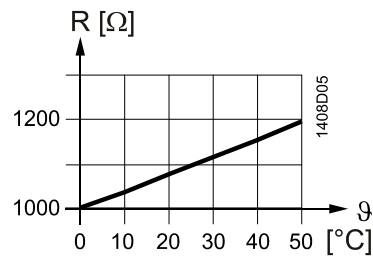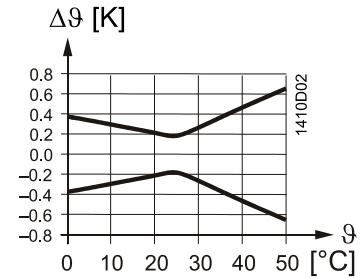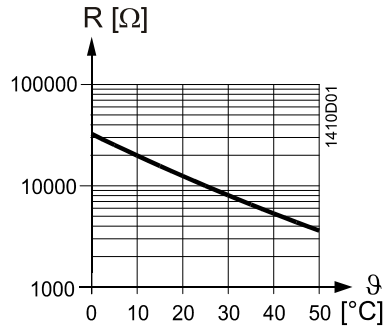
Sensing elements

LG-Ni1000

Characteristic curve:

Accuracy:

Pt 1000

R [Ω]

1408D05

1200

1000

0 10 20 30 40 50 [°C]

ϑ

Δϑ [K]

1408D02

0.8
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.8

0 10 20 30 40 50 [°C]

ϑ

NTC 10k

R [Ω]

1410D01

100000

10000

1000

0 10 20 30 40 50 [°C]

ϑ

Δϑ [K]

1410D02

0.8
0.6
0.4
0.2
0.0
−0.2
−0.4
−0.6
−0.8

0 10 20 30 40 50 [°C]

ϑ

Key

R	Resistance in Ohm
ϑ	Temperature in degrees Celsius
Δϑ	Temperature difference in Kelvin

Design

The device is designed for flush-mounting. It will fit most commonly available flush-mounted wall outlets.
The mounted device consists of:

- The sensor housing with sensing element,
- the mounting plate and
- a design frame.

The mounting plate and design frames are ordered separately (see "Accessories").

Sensor and mounting plate are connected via catch spring.

Anti-theft device

The sensor includes anti-theft protection by, for example, simply attaching a cable binder to the mounting plate.
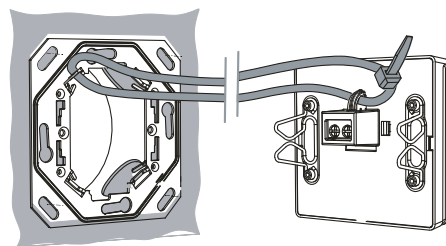
Disposal

Larger plastic parts carry material identifications conforming to ISO/DIS 11 469 to facilitate environment-compatible disposal.

Engineering notes

Maximum permissible cable lengths depend on the controller. They are listed in the controller's datasheet.

Mounting notes

Mounting location

Observe the following points when mounting the room sensor:
Sensor mounted on interior wall of room to be conditioned:
- At ca. 1.5 m height in the room and at least 50 cm from the next wall.
- Not on outside walls.
- Not in niches or behind curtains.
- Not above or near heat sources or shelves.
- Not on walls covering heat sources such as a chimney.
- Not in the radiation range of heat sources and lighting bodies e.g. spotlights.
- Not in areas exposed to direct solar radiation.
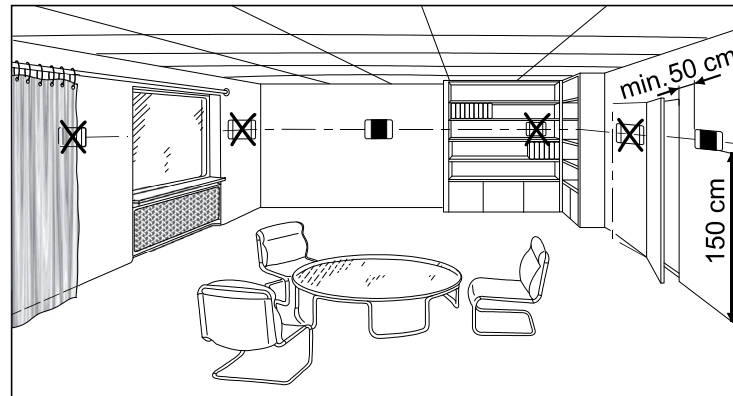
Seals
Installation piping

Seal the end of the installation conduit to prevent false measurements due to air drafts.
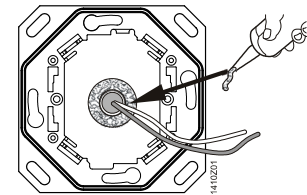
Ground, mounting frames

Comply with the various regulations on separating various voltage levels, when mounting the temperature sensor (with low voltage protection) alongside the recessed conduit boxes connected to the low-voltage power. In this case, the mounting frames must be connected to the protective ground wire with a flat plug connector plug and therefore grounded.
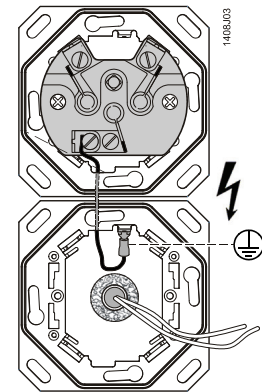
Observe the permissible ambient climate (see "Technical data").

Mounting instructions

Mounting instructions are enclosed in the device package.
See the following guideline for more information on mounting the sensor: "Symaro Sensor Installation Guide" Z-F01040501EN.

Technical data

Functional data

Field of use	0… 50 °C
Sensing elements	by type: LG-Ni1000, Pt1000, NTC 10k.
Time constant	Ca. 12 min
Accuracy	see "Functions"

|	Sensing type and output	Passive
Degree of protection	Degree of protection	IP 30 as per IEC 60529
	Protection class	III as per EN 60730
Electrical connection	Screw terminals for	2 x 1.5 mm^2 or 1 x 2.5 mm^2
	Permissible cable lengths	See the data sheet for the controller used.

Environmental conditions	Operation as per
	  Climatic conditions
	    Temperature
	    Humidity
	  Mechanical conditions
		IEC 60721-3-3
		Class 3K3
		0‑50 °C
		0-95% r. h. (non-condensing)
		Class 3M2

	Transport and storage as per
	  Climatic conditions
	    Temperature
	    Humidity
	  Mechanical conditions
		IEC 60721-3-2
		Class 2K3
		−25‑ +65 °C
		<95 % r.h.
		Class 2M2.

Materials	Housing	ASA + PC titan white (similar to RAL9010).
	Siemens Design frames	ASA + PC titan white (similar to RAL9010).
	Mounting plate	Steel
	Sensor, total	Silicone-free
	Packaging	Corrugated cardboard
Environmental compatibility	The product environmental declaration CE1E1408en contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal)	ISO 14001 (Environment) ISO 9001 (Quality) SN 36350 (Environmentally compatible products) RL 2002/95/EG (RoHS)
Dimensions (weight)	Including packaging	Ca. 0.1 kg

Connection diagram
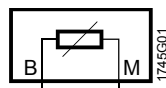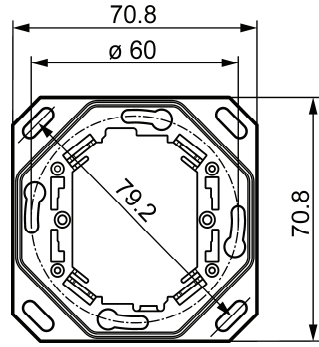

(pins are interchangeable).

Dimensions (in mm)

Sensor mounted on mounting plate CEE/VDE
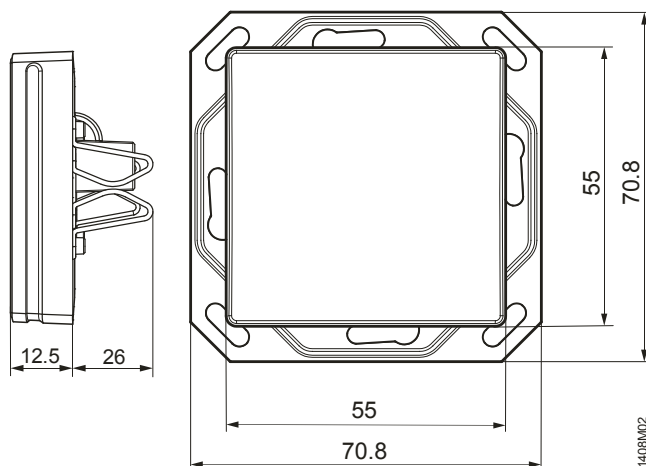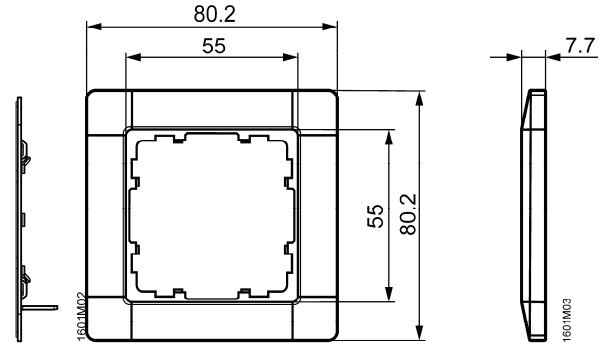
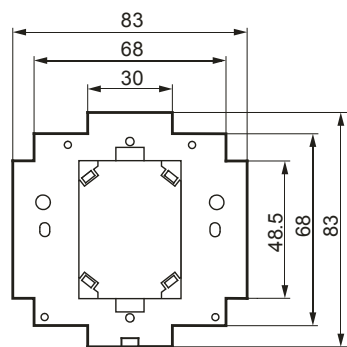**Mounting plate and design frame**

Mounting plate "CEE/VDE" (square):

DELTA line design frame:

Mounting plate "British standard" (square):

DELTA miro design frame:

Subject to changes