

Welcome to the world of *Thermoguard*!

Below we put together the 24 most frequent questions and answers regarding our temperature and humidity online monitoring system.

Please feel free to provide further enhancements to this FAQ. In case you should miss "your" question: We will answer your e-mail to info@thermoguard.de or info@thermoguard.ch as soon as possible!

*Thermoguard Germany * Thermoguard Switzerland*

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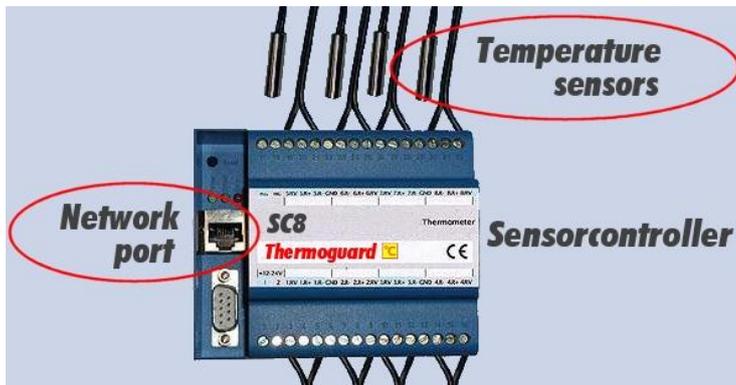
1. Thermoguard: Description, Benefits and GMP

Q What is *Thermoguard*? Q01

A *Thermoguard* is a system for automatic central temperature and humidity monitoring using a computer network.

The system comprises:

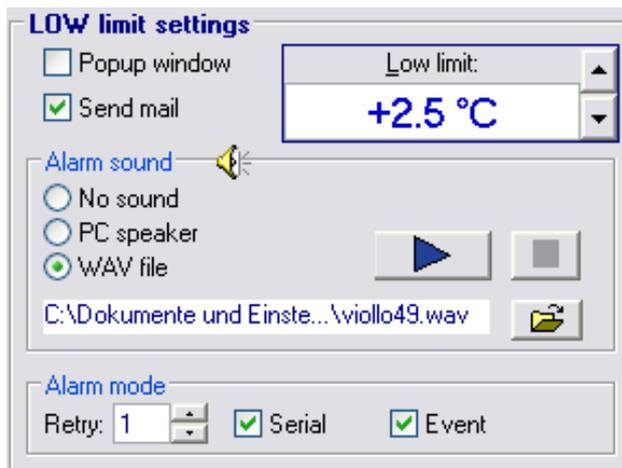
- intelligent sensorcontrollers with a network connection;
- temperature sensors connected to them, and



*Thermoguard
Sensorcontroller SC8*

- the *Thermoguard* software

The *Thermoguard* software regularly interrogates all the sensorcontrollers via the network on a central basis. If there are deviations from the specified limit values, the software triggers a visual and acoustic alarm. On request, the responsible member of staff is also advised via e-mail or SMS.



*Menu for configuring the lower
Temperature alarm value*

As an option, the software saves all the temperature data for each temperature and humidity sensor in a separate file, for possible further processing.

Q What is *Thermoguard Basic*?

Q02

A *Thermoguard Basic* is a complete and reasonably-priced package consisting of a sensor-controller including a temperature sensor and the *Thermoguard* software. *Thermoguard Basic* only allows access to one single sensorcontroller. Otherwise, the functional scope of the software is identical with *Thermoguard Professional*. A typical area of use is monitoring the temperature in a server room. *Thermoguard Basic* can be upgraded to *Thermoguard Professional* at any time. You can continue to use your existing *Thermoguard* sensorcontrollers.

Q What is *Thermoguard Professional*?

Q03

A Unlike *Thermoguard Basic*, *Thermoguard Professional* can centrally poll (interrogate) and monitor several sensorcontrollers. A typical area of application is monitoring for large numbers of cooling/refrigeration appliances, climatic chambers or incubators distributed throughout several rooms, buildings or locations.

Q What benefits does *Thermoguard* offer as compared to other monitoring systems?

Q04

A *Thermoguard* sensorcontrollers are connected to the computer network and are centrally monitored by a computer. *Thermoguard* triggers an acoustic alarm at the computer location (which can be freely selected) and sends e-mails to the responsible members of staff. Recorded instructions telling staff what action to take can be reproduced acoustically, and the alarms can be forwarded to mobile phones via SMS for 7x24-hour monitoring. Classical data loggers or manual monitoring systems require permanently reliable staff, including substitutes. In practice, alarms are not forwarded in real time, so most temperature deviations are only discovered after the damage has occurred. In contrast, conventional electric thermometers with a serial or USB interface always have to be connected to a local computer. This means that large numbers of computers are needed if there are large numbers of thermometers. Central monitoring and data recording, or sending alarms to individuals at a different location, are much more complex and costly in this case.

Q Is *Thermoguard* software available in English?

Q05

A Yes. *Thermoguard* software is designed for professional use in an international environment. The user interface is language switchable; currently German and English. The Installation and System Manual is available both in German and English language. The language for the operating system can be chosen freely; no special country settings are needed in the system control.

Q Can *Thermoguard* be used within a cGMP compliant environment according to CFR 21 Part 11? Q06

A Yes. *Thermoguard* software can be used without problems in a full GMP/cGMP compliant environment. Our software offers many special features, i.e. an own Audit Trail. With software packages such as [Nugenesis[®]](#), requirements of US GMP, such as electronic signature or archiving, can be met.

Q Is there a protocol (logging) function ("Audit Trail")? Q07

A Yes. All system actions and any changes to the system configuration are continuously and clearly recorded in a detailed log file ("Audit Trail"). Users can specify the prefix for the log file as well as the path to its storage location. This makes it possible to save log outputs from several copies together in one central directory.

Q What are the supported temperature ranges? Q08

A The *Thermoguard* sensorcontrollers SC1eS, SC2eP and SC8eS are able to measure temperatures which are in the range of -200 °C to +650 °C. *Thermoguard* offers different temperature sensors supporting a range from -190 °C to + 200 °C.

Q Is it possible to control other measurands besides temperature and humidity? Q09

A Yes, the "Switch functionality" of the *Thermoguard* sensorcontrollers SC1eS, SC2eP and SC8eS provides the control of simple "ON/OFF" contacts.

The sensorcontroller AC2 supports any available sensor on the market, which provides an output signal of 0..20V or 4..20mA. For example, wind speed, atmospheric pressure or gas detection are examples for this type of sensors.

2. Software and Hardware

Q Is a demo version of the *Thermoguard* software available? **Q10**

A Yes. You can download and test the current version in the [Download area](#). The functional scope is not restricted. The temperature values are read in from a text file in simulation mode, rather than from a real sensorcontroller.

Q Which operating systems does *Thermoguard* need? **Q11**

A The *Thermoguard* software supports all Microsoft® Windows™ operating systems which are currently supported by Microsoft.

Q Can *Thermoguard* software be installed as a service? **Q12**

A Yes. The current version of *Thermoguard* runs as an application on the desktop as well as a service.

Q Is *Thermoguard* software copy protected? **Q13**

A No. For each *Thermoguard* sensorcontroller, the customer receives a specific license for use with the relevant *Thermoguard* software. The license matches the associated sensorcontroller and is checked before the temperature values are interrogated. No dongles (protective plugs) or copy-protected media are needed.

Q Which hardware does *Thermoguard* need? **Q14**

A *Thermoguard* needs an Ethernet network with a TCP/IP protocol. A typical PC is adequate for the *Thermoguard* software; a sound card with active boxes is recommended for the acoustic alarm. Data can be saved on any desired drive in the network. A standalone server should be used for larger installations. In the GMP environment, it is advisable to secure the server in the usual way using access protection, backup, an UPS, redundant power supplies and a RAID subsystem.

Q How are the temperature sensors polled?

Q15

A The *Thermoguard* sensorcontrollers are miniature intelligent computers with an operating system of their own. The TCP/IP protocol is used to interrogate the temperature via the network. The license data are checked via UDP polling. When each *Thermoguard* sensorcontroller is installed, it is given an unique IP number that the user is free to choose. Models SC2eP and SC8eS, for two and eight temperature sensors respectively, only require one IP number each. The individual temperature sensors are interrogated by means of differentiating software commands.

Q Which time intervals can be set for polling?

Q16

A The shortest interval for polling the temperature values is one minute; the longest interval is seven days. Values of 10, 15 or 30 minutes have proven suitable in practice.

Q Is polling via the internet possible as well?

Q17

A As a general rule, the *Thermoguard* system is used within a protected company network, the LAN. It is perfectly possible to distribute this network over several cities with a suitable infrastructure, e.g. routers, leased lines, etc.

Example: the *Thermoguard* software is installed at the parent location of a company in Berlin. It can easily interrogate a temperature sensor belonging to a sensorcontroller installed in the server room of a branch in Munich.

Thermoguard installations should always be coordinated with the responsible network administrator so that the IP addresses conform to the internal company standards. If an organization has a pool of "public" IP addresses, direct polling via the Internet is also possible. This function has been successfully tested.

Q Is calibration possible?

Q18

A Yes. We can supply calibrated sensorcontrollers and sensors with a factory calibration certificate.

3. Mounting and Integration

Q How are Sensorcontrollers mounted at the wall? Q19

A *Thermoguard* Sensorcontrollers are designed for industrial standard mounting using hat-rails according to DIN. As an option *Thermoguard* offers professional mounting cases for each type of sensorcontroller.

Q Does *Thermoguard* offer Installation Services? Q20

A *Thermoguard* Products can be mounted without special effort by your electrician. GMP qualifications or special installations are offered as an additional service.

Q How do I mount the Temperature Sensors? Q21

A Installation of Temperature Sensors is simple. It is described in detail, including a photo story, within our system manual. No specialized tools are necessary.

Q What is the maximum lengths for the connection leads of the temperature sensors? Q22

A For type PT 100 sensors with four-wire leads, the length is not limited in principle, but should not exceed 100 m.
The cable of the combined digital sensor of controllers *HM1Pn* or *HF1Pn* can be extended using standard 9 pin cable used for serial connections. Maximum length should not exceed 20 m.

Q Can external devices be triggered? Q23

A Yes. With our external relay interface, *Thermoguard* Software can trigger floating relay contacts from an alarm system or switch 110/230 Volt devices like alarm beacons etc.

Q Will *Thermoguard* develop wireless devices? Q24

A No. Due to security and reliability reasons, many companies do not use Wireless LAN. Additionally, effective range is very limited within an industrial environment. Therefore, *Thermoguard* will currently not develop devices using wireless technologies.