Challenges?

π **Have you lost money or ruined food because of a fault in temperature-controlled storage?**

π **Do you some times forget to register temperature as prescribed by regulatory demands?**

π **Would you like to improve and document your quality automatically?**

Your solution

The PiGuard-2000 temperature monitoring system is your solution. It is easy to install, with a single hole in the storage unit through which the refrigerator, freezer or heating unit can be monitored. As the system is wireless, there is no need to install cables.

A range of sensors

PiGuard temperature sensors are available in several versions. A rigid probe can be installed in a small hole in the container to be monitored.
A small node is used to monitor open containers or put inside a container during transport.
A flexible wire can be used in special cases.

π **Easy and economical to install**

π **Fulfils regulatory demands for monitoring temperature**

π **Saves time in controlling temperature**

π **Adjustable alarm limits**

π **Automatic reports**

π **Graphical and table representation**

π **Monitor several locations at the same time**

π **Different sensor configurations**

π **Very useful for registration of temperature of goods during transport or movement**

Use

Refrigerators and refrigerated rooms, freezers for consumable goods, heating units, storage of medication, food processing facilities, ships, ventilation systems and industrial processes.

Real time displaying

When the PC is running On-Line-Monitor software, all data can be displayed in real time.

High security of data

If the PC looses power, e.g. during a black out, all temperature readings will be stored internally in the sensors and fetched automatically when the PC is up and running again. This results in optimal data security. The sensors are available with traceable calibration.

Automated reports

Temperature reports can be generated and printed easily. Selected time intervals are presented both in graphs and in tables. It is also possible to export the data for further analysis.

Automatic warnings

The system can monitor whether the temperature exceeds a predefined value or if a value is missing. All discrepancies are displayed, logged and optionally sent by e-mail or to a mobile phone.

| Date	From	To	Vegetables 1	Milk 2	Freezer 3
1.4.2010	00:00	08:00	0,4 ... 4,1	-0,3 ... 5,5	-19,0 ... -13,9
1.4.2010	08:00	16:00	0,4 ... 4,0	-0,3 ... 4,4	-20,3 ... -15,8
1.4.2010	16:00	00:00	0,5 ... 3,9	0,1 ... 4,4	-21,3 ... -12,8
2.4.2010	00:00	08:00	0,4 ... 3,9	0,2 ... 4,4	-22,6 ... -17,0
2.4.2010	08:00	16:00	0,4 ... 5,1	0,4 ... 4,8	-23,5 ... -18,9
2.4.2010	16:00	00:00	0,4 ... 4,0	0,2 ... 4,4	-24,1 ... -19,9
3.4.2010	00:00	08:00	0,5 ... 4,0	0,3 ... 4,7	-24,5 ... -21,3
3.4.2010	08:00	16:00	0,4 ... 4,0	0,8 ... 4,4	-25,0 ... -19,9
3.4.2010	16:00	00:00	0,5 ... 4,0	2,3 ... 6,5	-25,1 ... -22,3
4.4.2010	00:00	08:00	0,4 ... 3,9	0,1 ... 4,1	-25,3 ... -21,0

Web and double security

The data is stored on the user's computer. There is an additional option to store the data on a secure web-based server. This will allow the user to access the temperature values wherever he or she is located in the world. The server will monitor the user's computer, and it can send warnings if data is missing. This results in doubled security of the data.

Specifications

Measurement range	−55 to +125 [°C]
Resolution	0,06 [°C]
Accuracy	0,5 [°C]
Battery lifetime	1 year when measuring every 15 minutes
Sampling frequency	1 measurement every 15 minutes (adjustable from 1 second to 9 hours)
Maximum number of stored measurements	350.000 per sensor
Maximum range from sensor to receiver	150 [m]
Reaction time	1 min (adjustable from 1 sec to 9 hours)
Maximum number of sensors	10 (more sensors can be added if longer reaction times are accepted)
3 different types of sensors	rod, node and wire
System requirements	PC computer with at least 1 USB port, internet access and Windows XP or newer.
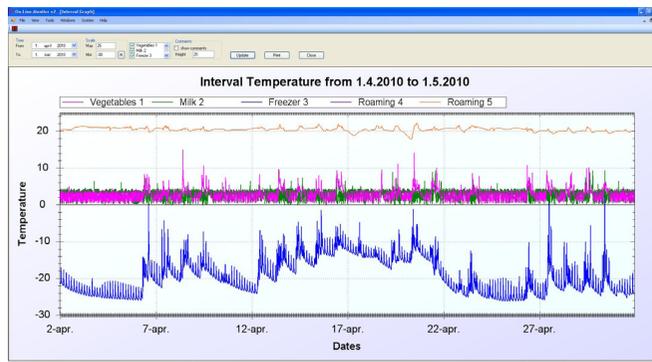
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PiGuard 2000

Temperature monitoring system