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ONLINE SYSTEM FOR AUTOMATIC HACCP TEMPERATURE MONITORING AND RECORDING ACCORDING TO EN 12830:2018 STANDARD

IRS synstores GmbH

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RETAIL & GASTRONOMY

ONLINE TEMPERATURE MONITORING SYSTEM AND AUTOMATIC ARCHIVING OF HACCP REPORTS

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PHARMACY

ONLINE SYSTEM FOR CONTINUAL TEMPERATURE MONITORING AND 100% AUTOMATED GxP REPORTING SYSTEM

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SYNSTORES – ONLINE TEMPERATURE REPORTING SYSTEM

A fully autonomous, wireless system of sensors with a minimum 10-year battery lifetime that displays the temperatures in refrigeration and freezing appliances in real time, automatically records temperatures and archives reports, sends temperature alarms and open door alerts.

LTE

100% wireless,
online solution

30-year battery lifetime,
10-year no-charging guarantee

HACCP

100% automated HACCP/GxP reporting system

Fully compliant
with EN 12830:2018

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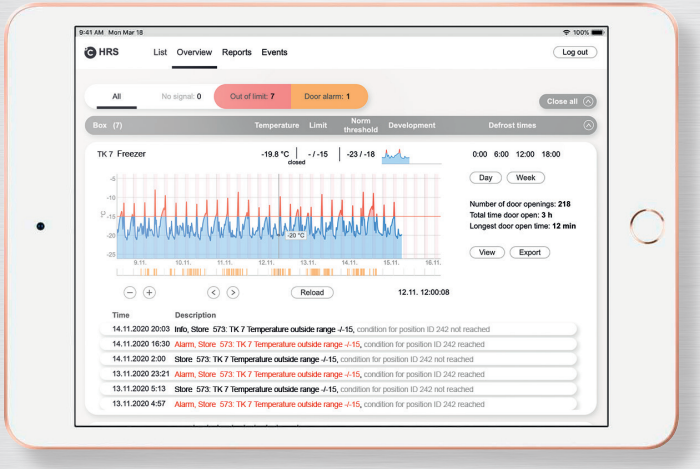
HACCP APPLICATION WITH REPORT ARCHIVE



RETAIL & GASTRONOMY

The customer has access to all key values **through a user-friendly application** on a mobile or computer, as well as to all HACCP records, which are automatically saved in the application archive. In this way, all HACCP values are easily available to retail outlet personnel, Quality Management, and food inspection authorities, at any time and online.

PHARMACY

The customer has access to all key values and to all hourly temperature records, which are automatically saved in the archive in the application, as required by EN 12830:2018 and GxP. In this way, all recorded values are easily accessible to health professionals, Quality Management, and inspection authorities, at any time and online.

Archiving

A complete HACCP/GxP report in PDF format can be downloaded from the application for the selected date at any time.

Reports, alarms

You can set up e-mail alerts with corrective action prompt, temperature alarms, and regular sending of reports.

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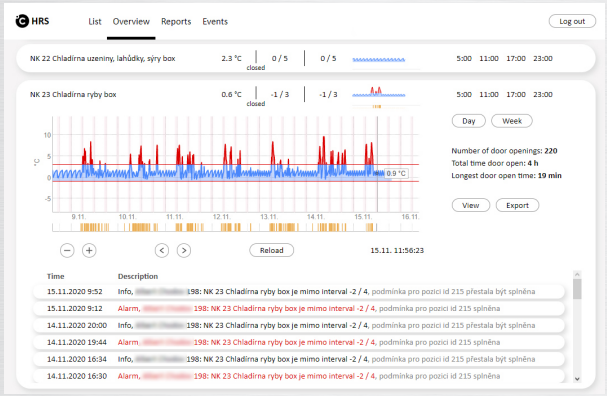
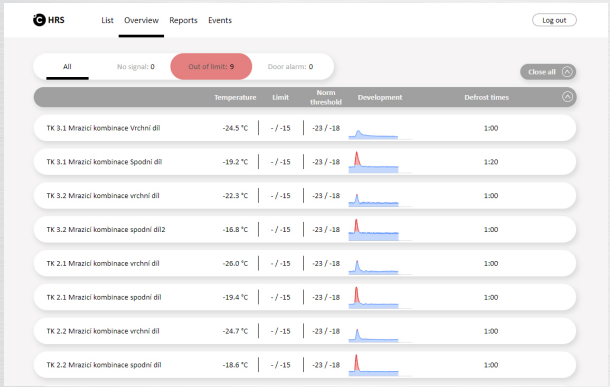
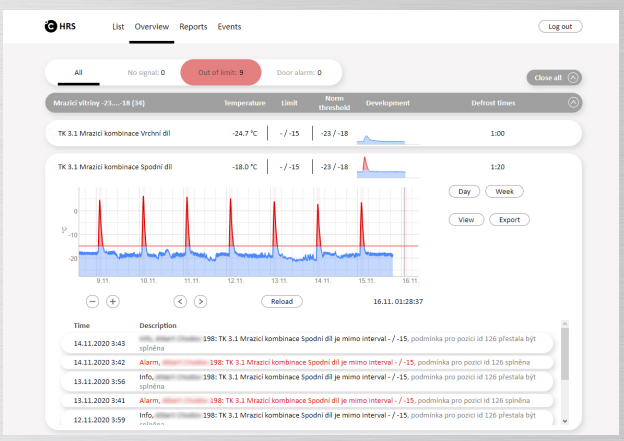
OUTPUT FROM THE APPLICATION



History of temperatures and door opening - close-up graph



Overview of temperatures in appliances



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HW COMPONENTS

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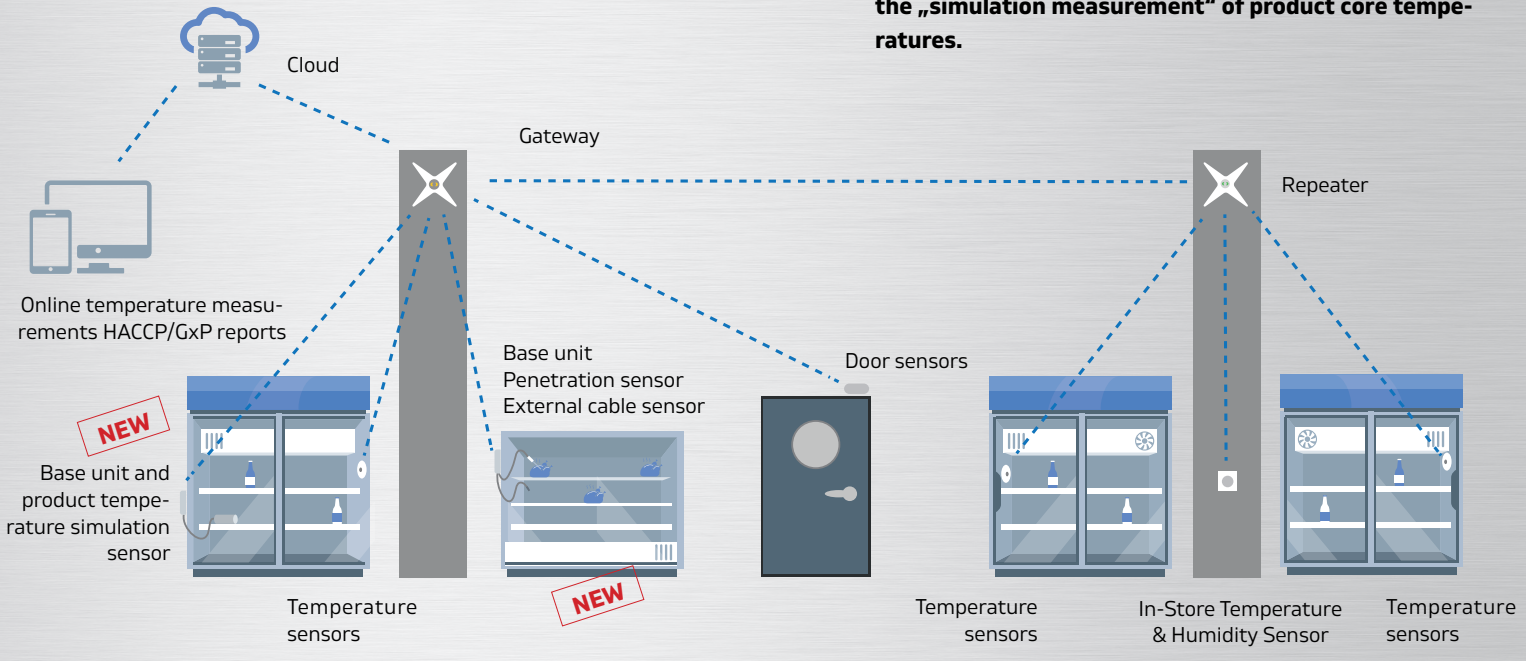
The system consists of a group of wireless temperature sensors in refrigeration or freezing appliances, temperature and humidity sensors on the premises, door sensors, a repeater and a gateway, which wirelessly transmits data using the LTE module over the GSM network to the server. The system is fully autonomous = independent of the IT infrastructure (WiFi network) of the market or the premises.

New sensor types as part of the SYNSTORES platform
They enhance our offer of special wireless sensors SYNSTORES. These new sensors ensure continuous temperature measurement in cooling devices as well as hot devices (for example hot food display counters), as well as the **measurement of core food temperatures, and also the „simulation measurement" of product core temperatures.**



HOW DOES THE SYSTEM WORK?

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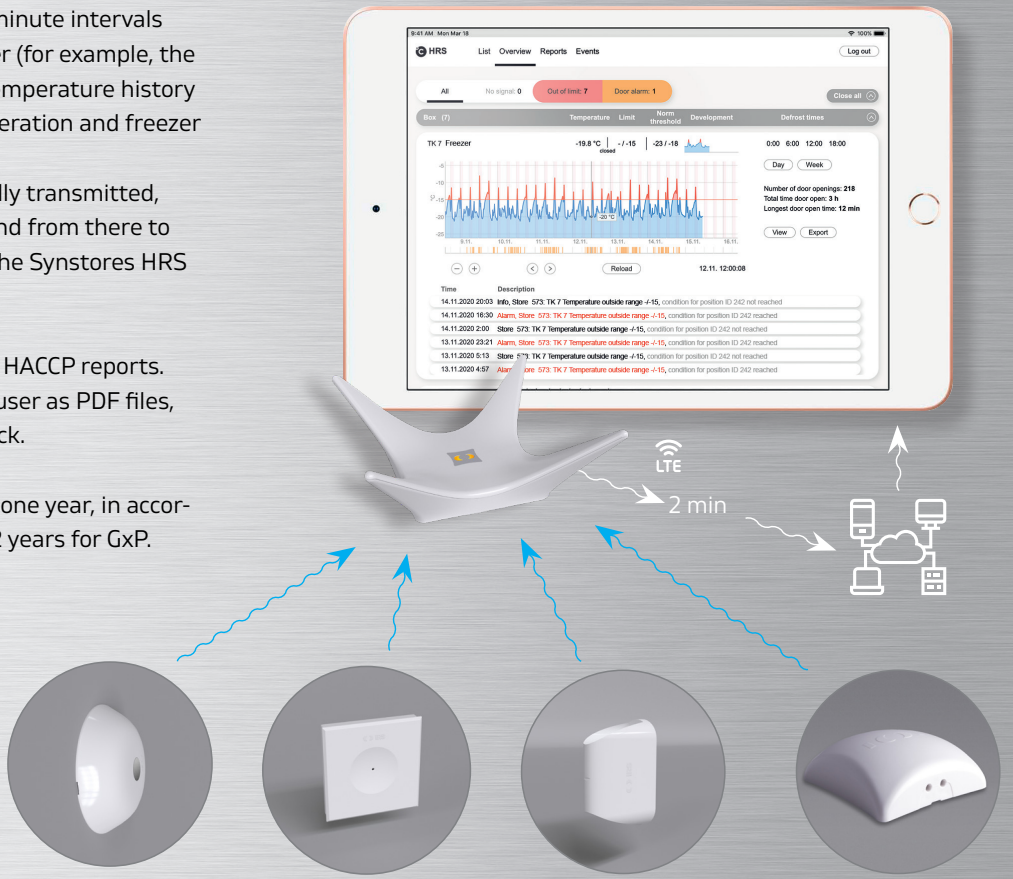
Sensors send data to the system at two-minute intervals and use graphic interface to show the user (for example, the outlet manager) current temperatures, temperature history and opening and closing of doors in refrigeration and freezer boxes.
Records from the sensors are automatically transmitted, wirelessly, by the gateway to the server and from there to any device connected to the internet via the Synstores HRS application.

The data are stored on the server as daily HACCP reports. Reports are immediately available to the user as PDF files, which can be downloaded with a single click.

Reports are saved on a server for at least one year, in accordance with applicable HACCP legislation, 2 years for GxP.

The system complies with EN 12830:2018.



SIMPLICITY
ONLINE & WIRELESS
EASY INSTALLATION

UNIQUE PROPERTIES OF HW COMPONENTS

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- Sensors do not need a power source; they have their own integrated batteries - minimum battery life of 10 years.
- Sensors are calibrated and have a certificate for coming into contact with food.
- Sensors are waterproof and dust-proof. Their surface is easy to clean.
- Can be fitted in all appliances - in refrigeration counters, freezer boxes, stalls and other plug-in furniture, drinks refrigerators, freezers, and cold boxes, the measurement of core food temperatures, and also the „simulation measurement“ of product core temperatures.
- Sensors are shaped like a rounded lens - they do not get in the way when you are handling goods.
- Tested by the Czech Metrology Institute. The system complies with EN 12830:2018.
- Simple installation and replacement, no cables or wires.
- No additional calibration.
- Independent inspection of service organisations.

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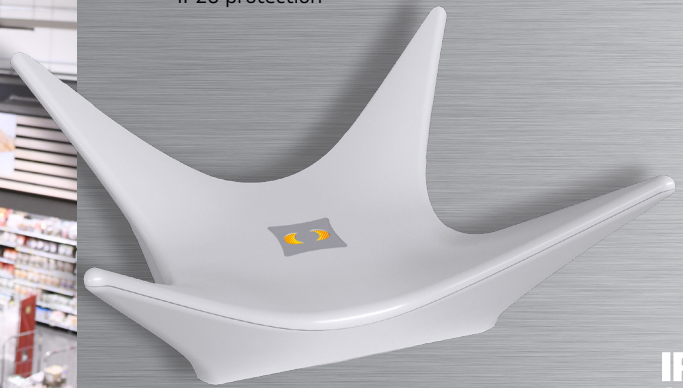
GATEWAY GB41

LTE gateway for wireless temperature and open door sensors
5 V external USB adapter
Operating temperature: -10˚C to 50˚C
Storage temperature: -40˚C to 55˚C
GSM LTE
Integrated SIM
GSM integrated antenna
Internal memory 2GB min. 100.000 samples
Back-up battery for a minimum of 24 hours of operation
Dimensions 210 x 210 x 80 mm
IP20 protection



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HACCP TEMPERATURE SENSOR TS1

Fully wireless temperature sensor
Temperature measurement accuracy of 0,3°C within a temperature range of -30°C to +50°C for a minimum of 10 years
Usable temperature range of the temperature sensor is -30°C to +50%
Measurements taken every 2 minutes
Frequency used 868,3 MHz
Minimum 10-year battery life, integrated
Range in open space 800 m
Dimensions 80 x 20 mm
No calibration required
IP65 protection

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TEMPERATURE AND HUMIDITY SENSOR - LOBBY SENSOR LS1

Fully wireless temperature and humidity sensor in the store
Temperature measurement accuracy of 0,5°C
Applicable temperature range of the temperature sensor between -5°C and +45°C
Humidity measurement 0-100%
Humidity measurement accurancy +- 3% RH within range 0-80% RH
Measuring interval of 2 minutes
Applied frequency – 868,3 MHz
Integrated battery, replaceable
Open-space range of 400 m
Dimensions 80 x 80 x 12 mm
No calibrations needed
IP20 protection

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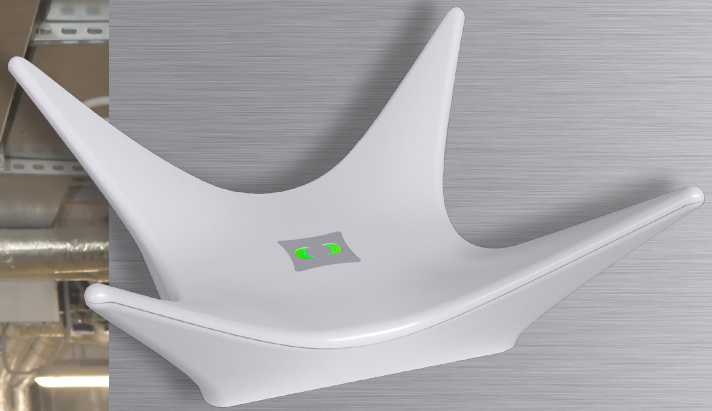
REPEATER GE41

Amplifier for remote sensors
Frequency used 868,3 MHz
Dimensions 210 x 210 x 80 mm
Battery operation (during a power cut) for a minimum of 24 hours
5 V external USB adapter
IP20 protection



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DOOR SENSOR DS1

Fully wireless door contact
Usable temperature range of -30°C to +50%
Frequency used 868,3 MHz
Minimum 10-year battery life, integrated
Range in open space 800 m
Dimensions 88 x 19 x 35 mm
IP65 protection

DOOR MAGNET - SPARE - SHORT DS1M

Dimensions 38 x 14 x 25 mm
IP65 protection

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BASE UNIT FOR 2 EXTERNAL SENSORS EB2

Fully wireless unit
Operating temperature: -30 °C to +50 °C
Measuring interval of 2 minutes
Applied frequency – 868.3 MHz
Battery minimum lifetime of 10 years, integrated battery, replaceable
Open-space range of 800 m
Dimensions 80 x 80x 25 mm
Possible to connect up to 2 sensors
Mounting by magnets
No calibrations needed
IP65 protection

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PENETRATION SENSOR FOR CORE TEMPERATURE (1.5 M CABLE) NS4

Temperature measurement accuracy of 0.4°C
within the temperature range between -30 °C
and +80 °C for the period of at least 10 years
No calibrations needed
Cable length 1.5 m
IP65 protection

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EXTERNAL SENSOR 50 MM TIP (1.5 M CABLE) ES5

Temperature measurement accuracy of 0.4°C
within the temperature range between -30 °C
and +80 °C for the period of at least 10 years
No calibrations needed
Cable length 1.5 m
IP65 protection

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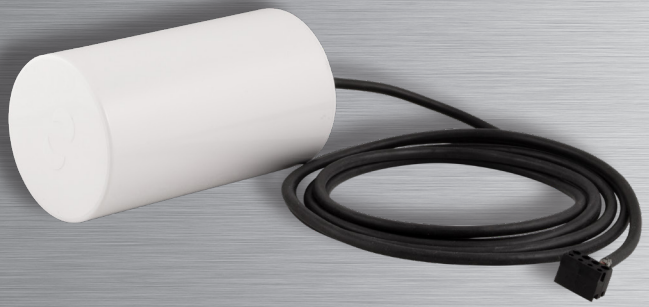
PRODUCT TEMPERATURE SIMULATION SENSOR (1.5 M CABLE) PS7

Temperature measurement accuracy of 0.4°C
within the temperature range between -30 °C
and +50 °C for the period of at least 10 years
No calibrations needed
Cable length 1.5 m
IP65 protection



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POSSIBLE SENSOR COMBINATIONS

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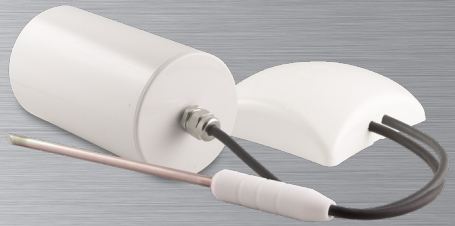
PRODUCT TEMPERATURE SIMULATION SENSOR

EXTERNAL SENSOR 50 MM TIP

PENETRATION SENSOR FOR CORE TEMPERATURE

PENETRATION SENSOR FOR CORE TEMPERATURE WITH EXTERNAL SENSOR 50 MM TIP

EXTERNAL SENSOR 50 MM TIP WITH PRODUCT TEMPERATURE SIMULATION SENSOR



PRODUCT TEMPERATURE SIMULATION SENSOR WITH PENETRATION SENSOR FOR CORE TEMPERATURE

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ACCESSORIES

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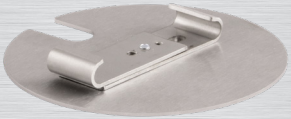
SPARE SENSOR FIXING PLATE WITH TAPE MTS1



WIRE FIXING PLATE FOR SENSOR MTS2

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FAQ

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How are data transmitted from sensors to the gateway?
Radio signal, frequency 868,3 MHz.

Data transmission from gateway to cloud?
Using a data SIM and LTE modem.

Who is the operator of the cloud where the data resides?
Microsoft Azure, security according to Microsoft for Cloud Applications standard (ISO 27001).

Do I need access to the internal IT network? Do I need the cooperation of the internal IT Department?
No. The system complies with the requirements of EN 12830:2018 and it is therefore fully autonomous and independent (required by the Standard). Therefore, you do not even need access to the internal IT network, structure. No threat of any interference, no need for internal WiFi and no need to install additional WiFi, no risk and no costs for IT, no other requirements for the IT Department and structure. On the contrary, the system can provide valuable data to internal IT and Q management.

Can we store data on our own internal server?
The EN 12830:2018 standard requires that data handling is prevented in the application, meaning that storage on your own server is not allowed - this must be provided by a cloud server.
We can, however, provide data in any format for the customer's own use and for the integration of such data into other systems. For HACCP purposes, the HRS application and output from this application must be used - precisely because of the EN 12830:2018 standard according to which the system is tested.

Sensor design: What is inside the sensor?
The sensor design was designed for the IP65 Class (watertight), the „filler" consists of electronics and batteries. The entire „inner" space is water-resistant and it is inaccessible (the batteries used and electronics allow for this procedure = batteries do not need to be changed, the electronics are not repaired - in case of a fault, the whole sensor is replaced - replacement is a matter of seconds).

FAQ

What type of sensor do you use?
A temperature sensor with digital output and internal calibration, with a maximum tolerance of +/-0,3°C.

What is the battery life?
We can say that the guaranteed battery life is at least 10 years. Calculations show a lifetime of up to 40 years at constant temperatures of down to -30° C. The battery manufacturer has had such batteries in operation in some sensor applications for over 30 years, and they still work. The „endurance" of the battery also stems from the unique firmware architecture and SW which ensures that the electricity consumption required to operate the sensor is minimised.

Does the system have a HACCP certificate?
Sensors are tested according to the current EN 12830:2018 standard. This is currently the valid implementation standard for verification of the properties of temperature sensors and systems in the storage and distribution of food and medicines. This fact might be a valid starting point for use in the creation of internal HACCP regulations and plans and may thus become an integral part of such HACCP plans – thus ensuring control of the critical points in the temperature chain. The Czech Metrology Institute carried out complete testing and the Synstores system passed. We can provide the official CMI test report.

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