

Pressure: ✓
Temperature: ✓
Food Safety: ✓

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testo 191:
Complete food safety monitoring.

The regular monitoring and documentation of temperature and pressure in thermal preservation processes is crucial for the quality and safety of the foods being processed. In order to support you in this task, we developed the testo 191 HACCP data logger system.

Thanks to our decades of experience in the development of innovative measuring technology for food safety, we know what is important in this sensitive area: reliable technology with the highest level of precision, seamless integration into your processes and increased efficiency in the daily workflow.

The highly efficient and reliable data logger system for pasteurization, sterilization and freeze-drying processes comprises of data loggers and the testo 191 professional software. All components provide you with effective support in monitoring process and quality parameters, ensuring the correct functioning of your processing systems while meeting all regulatory requirements regarding documentation.



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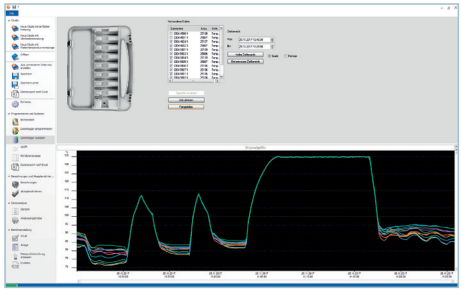
Data loggers, software, multifunction case:
Overview of the system components.



The HACCP data loggers come in one pressure and four temperature models. They stand for robustness, durability and reliability. The batteries were manufactured with thread capabilities so batteries could be changed in just a few seconds without and tools. Thanks to the logger's hermetically sealed design, it remains 100% tight even after the battery has been changed.



The multifunction case for the testo 191 completes the system. It is robust, smart and practical, not only providing safe storage for the data loggers, but also facilitating configuration and readout. A programming and readout unit is built and installed into every case. This means that up to 8 data loggers can be configured and read out simultaneously.



The data loggers are configured and read out using the testo 191 professional software, without needing a 400-page instruction manual and complicated menus. But using guided processes, helpful data visualization and the innovative 1-click report: the report recalls the parameters of the last measurement, so that you can meet your acceptance criteria while providing results quickly and efficiently without the need to reset all the report parameters over and over again.

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Innovation for the smallest spaces:
The advantages of the testo 191.

The testo 191 HACCP data loggers for temperature and pressure are available in five different models. Hermetically sealed measuring technology in a separate stainless steel housing means maximum reliability and robustness.

The battery can also be changed quickly and securely without any tools or lubricants.

Versatile probes
Measurement probes are available in different serial designs and adaptable according to customers' wishes.



Original size image

Easy securing option
Practical solution for attaching the retaining clamps.

Robust stainless steel
The measuring technology is fitted into a hermetically sealed stainless steel housing.

Reliably tight
The data loggers remain 100% tight even after the batteries are changed.

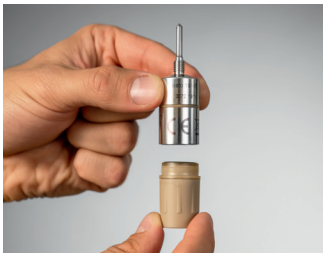
Resilient plastic
The battery housing is coated in high-temperature-resistant polyether ether ketone (PEEK).

Unique design
The battery and the measuring technology are contained in two separate housings.



Flexible height
Depending on the measuring task, you can adapt the height of the data loggers via the batteries which are available in two sizes.

Fast battery change
Thanks to the innovative design, the batteries can be securely changed in just a few seconds without any tools.



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Configuration, readout, transport:
The multi-function case.

Flexible to use, practical to handle and especially robust – the transport case for the testo 191 data loggers has many impressive features. In addition to providing safe and secure storage, they also ensure fast configuration and readout of the loggers with the testo 191 professional software.



More efficient
The case enables up to eight testo 191 data loggers to be wirelessly configured and read out simultaneously.

More practical
The programming and readout unit is permanently installed in the case so you do not need to switch between transport and programming/readout unit.

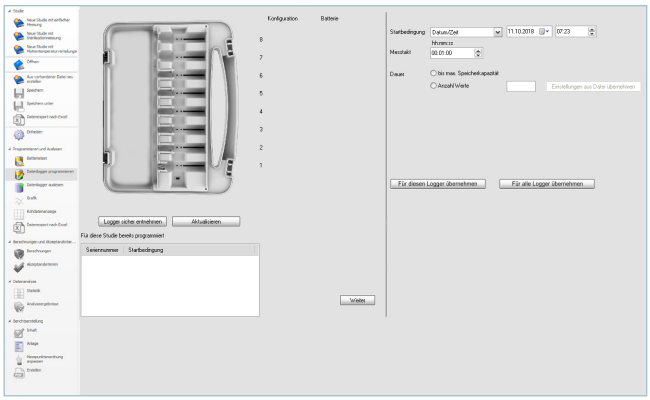
More secure
The data loggers are reliably protected against damage in the solid case.



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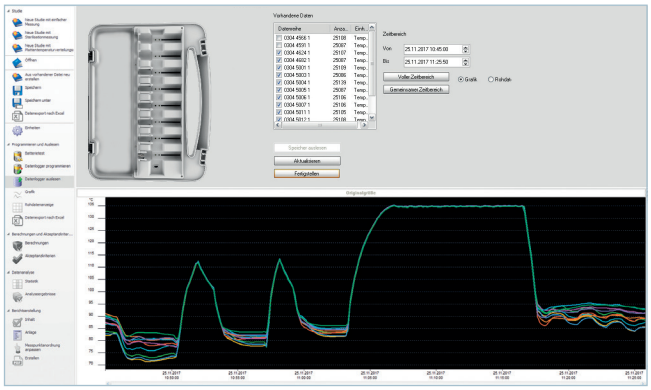
Surprisingly easy:
The software.

The HACCP data loggers are programmed and read out using the testo 191 professional software. When developing the software, we made sure we integrated only the functions which you really need, in order for you to be able to work as quickly and easily as possible. Clear, step-by-step instructions and warnings at critical points enable intuitive and self-explanatory - even by novices. Time-consuming software training sessions and 400-page instruction manuals are now things of the past.



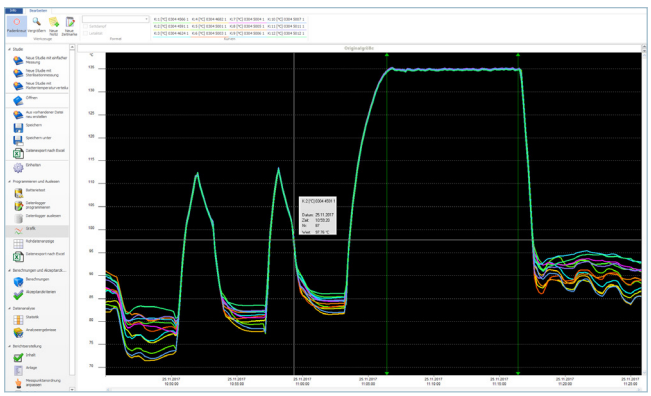
1. Programming data loggers

- Configure via USB in the multifunction case
- Configure each logger individually or transfer one configuration to up to 8 loggers
- Flexibly define start criteria: not only according to date and time, but also according to threshold value temperature, or both
- Define measuring cycle



2. Reading out data loggers

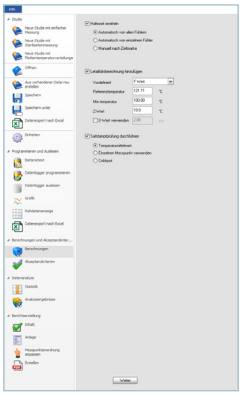
- Read out via USB in the multifunction case
- Visualization of the results for individual or all loggers, as a graphic or a table
- Partial readout possible: time period can be freely selected



3. Visualizing the measurement data

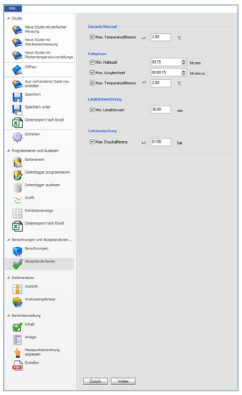
- Analyze partial ranges of the measurement precisely using the simple zoom function
- Easier selection of measuring points with the crosshairs
- Comment on data: place notes directly onto the graphic and include them in the pdf report output
- Use time marks, for example to easily mark and comment on holding phases

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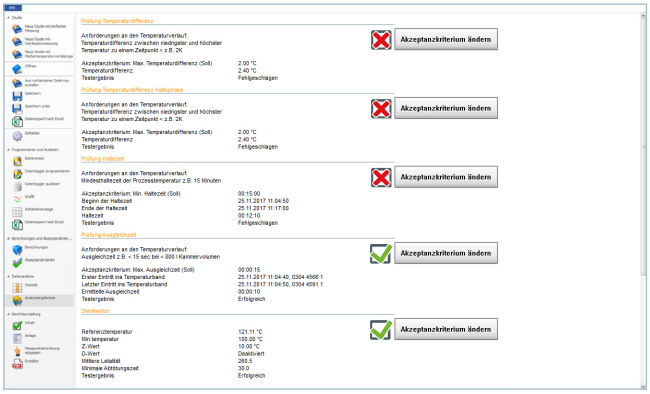
4. Defining calculations

- Automatic lethality and saturated steam pressure test
- F-0, F-70 and F-90 values can be pre-set
- Automatic and manual calculation of the holding phase
- A-0 and C-0 values



5. Defining acceptance criteria

Support through example visualization as well as explanation of individual process parameters (e.g. temperature span, minimum hold time or maximum acclimatization time).



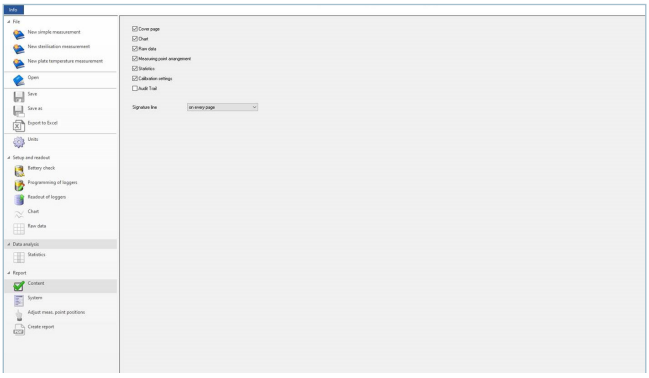
6. Analyzing results

- Overview of the configured acceptance criteria
- Immediate indication of whether a measurement passed or failed
- Direct access to change the acceptance criteria
- Graphic and tabular display of readings
- Select reading statistics on time marks using holding phases for calculating measuring curves



7. Visualizing the measurement set-up

- Measuring point order for flawless documentation
- Uploading own images of the system
- Labelled loggers can be allocated to their actual position in the autoclaves
- Visualization of the temperature measured over time during system operation



8. Configuring and creating reports

- Individual input of relevant information from the measuring study (e.g. manufacturer, loading pattern, tester)
- Company logo and the title of the report are individually adaptable
- Save and reuse report configuration
- Full inclusion of audit-relevant data
- Download data as a pdf report or a CSV file
- 1-click report adopts the report parameters of the last study and enables faster reporting

Equipped for every challenge:
testo 191 HACCP data loggers in use.



Temperature measurement in a can:
testo 191-T1 + stand



Temperature measurement directly in the food:
testo 191-T1



Temperature measurement in a can/bottle with the logger fitted externally:
testo 191-T2 + can and bottle attachment



Measurement of ambient temperature:
testo 191-T1 + retaining clamp and cable tie (cable tie not included in the scope of delivery)



Temperature measurement in particularly deep cans/ bottles:
testo 191-T3 + can and bottle attachment



Temperature and pressure measurement for sterilization in autoclaves:
testo 191-T1 + testo 191-P1



Depending on the application, you can vary the size of the logger through our flexible battery concept.



Temperature measurement in freeze-drying:
testo 191-T3/-T4 + freeze-drying probe holder

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Fast, efficient, reliable:
The advantages at a glance.

Save time

- No preparation time is needed for measurements with the testo 191 data loggers (e.g. for cable bushings or sealing).
- The data loggers' batteries can be changed quickly and securely.
- You can simultaneously program and read out up to eight data loggers in the multifunction case.
- The intuitive software and the 1-click report save you time when evaluating and documenting the measurement data.

Measure more efficiently

- Equipped for every measuring task: the intelligent battery concept means you can adjust the logger size to the space available.
- The long, flexible probes of the testo 191-T3/-T4 measure even in difficult-to-access areas.
- Using the testo 191-T4, you can take two readings or measure temperature differences with just one logger.

Rely on your equipment

- The innovative design of the data loggers ensures a 100% tight seal after the battery is changed.
- High-quality materials and the innovative construction make the testo 191 data loggers particularly robust and durable.



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At a glance:
Technical data.



HACCP data loggers	testo 191-T1	testo 191-T2	testo 191-T3	testo 191-T4	testo 191-P1
Measurement parameter / probe type	Temperature (Pt1000)				Pressure (piezo-resistive sensor)
Measuring range	-50 to +140°C				1 mbar to 4 bar abs.
Accuracy	±0.2°C (-50 to -40°C) ±0.1°C (-40 to +140°C)				± 20 mbar
Resolution	0.01°C				1 mbar
Reading memory	60,000 readings			30,000 per channel	60,000 readings
Measuring cycle	1 s to 24 h				
Storage temperature	-20 to +50°C				
Dimensions					
Logger with small battery	20 x 40 mm		20 x 45 mm	20 x 53 mm	22 x 64 mm
Logger with large battery	20 x 59 mm		20 x 63 mm	20 x 72 mm	22 x 83 mm
Probe shaft	3 x 25 mm	3 x 115 mm	1.5 x 775 mm		–
Probe shaft tip	–		3 x 25 mm		–
Battery large (standard)					
Battery type	½ AA lithium				
Service life	2,500 operating hours (measuring cycle 10 seconds at 121°C)				
Application range	-50 to +140°C				
Battery small (option)					
Battery type	2 x button cell lithium				
Service life	250 operating hours (measuring cycle 10 seconds at 121°C)				
Application range	-20 to +140°C				

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Ordering information and accessories.

testo 191 components	Order no.
testo 191-T1, HACCP temperature data logger, including battery large, distance adapter long for testo 191 programming and readout unit, calibration protocol.	0572 1911
testo 191-T2, HACCP temperature data logger, including battery large, distance adapter long for testo 191 programming and readout unit, calibration protocol.	0572 1912
testo 191-T3, HACCP temperature data logger, including battery large, distance adapter long for testo 191 programming and readout unit, calibration protocol.	0572 1913
testo 191-T4, HACCP temperature data logger, including battery large, distance adapter short for testo 191 programming and readout unit, thread extension, calibration protocol.	0572 1914
testo 191-P1, HACCP pressure data logger, including battery large and calibration protocol.	0572 1916
testo 191 professional software, software for configuration and readout of testo 191 data loggers. System requirements: Windows 7 (32/64 bit), Windows 8, Windows 10.	0554 1911
testo 191 case small, case for transport, storage, programming and readout of testo 191 data loggers, including USB cable and 1 programming and readout unit for a maximum of 8 data loggers. Provides space for 1 programming and readout unit. Dimensions: 340 x 265 x 60 mm.	0516 1901
Accessories	
testo 191 battery small, PEEK coated. For the power supply of all testo 191 models. Application range: -20 to +140°C.	0515 1900
testo 191 battery large, PEEK coated. For the power supply of all testo 191 models. Application range: -50 to +140°C.	0515 1901
testo 191 can and bottle attachment, fixes the testo 191 data logger to cans or bottles.	0554 0458
testo 191 can stand for adjusting the probe position of the testo 191 data loggers and for improving stability.	0554 1906
testo 191 freeze-drying probe holder for more precise measurement of surface temperature with the testo 191-T3 and testo 191-T4.	0554 1907
Retaining clamps for testo 191 loggers (pouch with 5 off).	0554 0297
Distance adapters short to secure the testo 191-T4 data logger in the programming and readout unit.	0554 0298
Distance adapters long to secure the testo 191-T1, testo 191-T2 and testo 191-T3 data loggers in the programming and readout unit.	0554 0299
ISO temperature calibration certificate (testo 191-T1/-T2/-T3/-T4), calibration points -50°C; 0°C; +90°C; +121°C; +140°C	0520 0141
DAkkS temperature calibration certificate (testo 191-T1/-T2/-T3/-T4), calibration points -50°C; 0°C; +90°C; +121°C; +140°C	0520 0281
ISO pressure calibration certificate (testo 191-P1), calibration points 200 / 1400 / 2600 / 3800 / 5000 mbar	0520 0025
DAkkS pressure calibration certificate (testo 191-P1), calibration points 200 / 800 / 1400 / 2000 / 2600 / 3200 / 3800 / 4400 / 5000 mbar	0520 0215



Batteries



Can and bottle attachment



Retaining clamps



Freeze-drying Probe holder



Stand for adjusting the probe position

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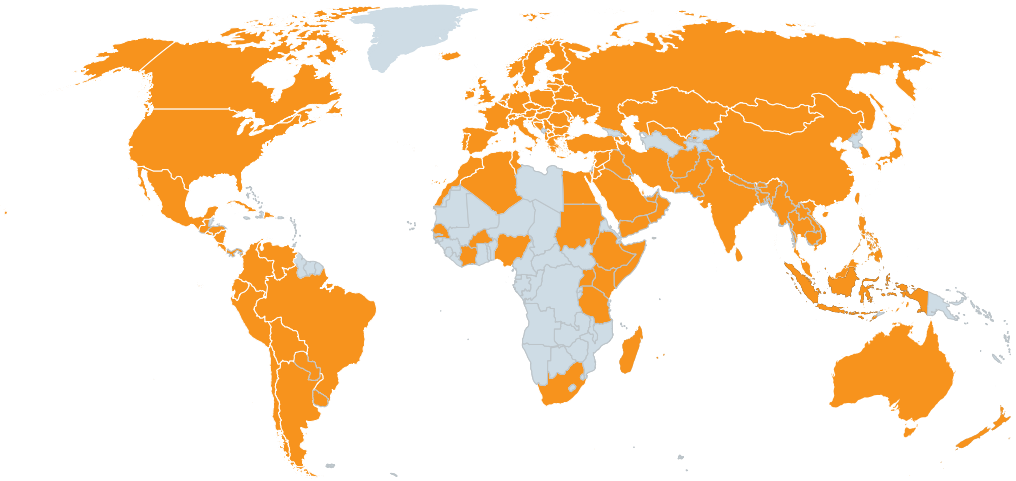
Testo:
High-tech from the Black Forest.



Testo is a world leader in the design, development, and manufacture of innovative products and services for environmental and industrial measurement. For more than 60 years, leading companies in the life sciences industries have relied on Testo to help protect their products.

Testo's first product was a simple electronic thermometer. Today, the product line has expanded to include a large variety of critical measuring instruments, such as data loggers, air velocity meters, humidity and dew point meters, sound, pressure, and light meters.

With over 2,700 employees in 33 offices worldwide, Testo understands local requirements and culture. Testo currently has hundreds of thousands of data loggers in the market, storing over 17 billion data sets.



Testo Country Sales and Service Organizations

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