

Durable: ✓
Intuitive: ✓
Reliable: ✓

Highly efficient validation of critical controlled temperature units, autoclave sterilization, and freeze-drying processes with the testo 190 CFR data logger system.

1.888.610.7664 www.calcert.com sales@calcert.com

Comprehensive support:
Your validation with Testo.

The validation of controlled temperature units, sterilization, and freeze-drying processes is a key element of your quality assurance and shows the high level of safety of the products you make. With our testo 190 complete solution, we support you according to your needs in terms of fulfilling all regulatory requirements in a highly efficient way.

Entrust your whole validation process to us and take advantage of a resource-friendly, full-service solution enabling you to reliably achieve your GMP compliance. Alternatively, we are happy to support you with individual services specially tailored to your needs, such as training courses, calibrations, qualifications and validations. In all respects, Testo is your reliable partner when it comes to meeting your individual requirements.



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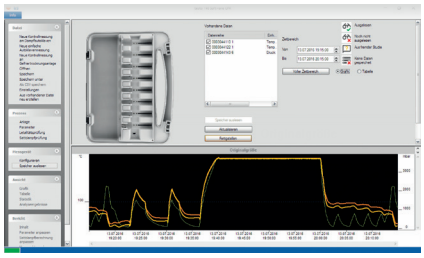
Hardware, software, service:
Your building blocks for efficient validation.



The 190 data loggers come in four temperature models and one pressure model. The loggers are robust, durable and reliable. The innovative design of the logger allows batteries to be safely changed in just a few seconds, without any tools. Thanks to the logger's seal design, it remains 100% airtight even after the battery has been changed.



The multifunction cases are available in two sizes and are used for programming and readout of the loggers, as well as for storage and secure transport. Both cases provide space for a programming and readout unit, where up to 8 data loggers can be simultaneously read out and configured. The large case has holding mechanisms for up to 32 loggers and up to 25 batteries, along with extra storage space for accessories. This makes transport convenient and the on-site validation process easier.



The data loggers are programmed and read out using the intuitive testo 190 CFR software. No data export is needed for data analysis (in any other application). 1-click report means that 21 CFR part 11 compliant documentation can be achieved with just one click. It is possible to read out a total of up to 254 loggers in one validation process.



Calibration
Testo offers NIST traceable temperature calibration certificates additionally for purchase.

Contact your sales representative for further details.

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Innovation in the smallest space:
The advantages of the testo 190.

The testo 190 data loggers for temperature and pressure are available in five different versions.The measuring technology offers a stainless steel housing that provides the highest reliability and maximum robustness.

The safe and easy battery change supports users in ensuring they complete the each step without error.

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

Easy securing option
Practical solution for attaching the retaining clamps.

Robust stainless steel
The measuring technology is fitted into an airtight 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).



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.



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

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



Practical accessories



Small battery
With a service life of 250 operating hours and compact dimensions, the battery is ideally suited to confined applications.



Probe holder (puck)
The probe holder ensures precise measurement of the surface temperature (plate temperature) in a freeze-drying system.



Retaining clamp
In combination with cable ties, the retaining clamp enables easy and safe securing of the logger, without any residues being left behind.

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At a glance:
A comparison of the data loggers.



190 data loggers	testo 190-T1	testo 190-T2	testo 190-T3	testo 190-T4	testo 190-P1
Measurement parameter / probe type	Temperature (Pt1000)				Pressure (piezoresistive sensor)
Measuring range	-50 to +140°C				1 to 4,000 mbar abs.
Accuracy	±0.1°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 (Ø x H)		20 x 45 mm (Ø x H)	20 x 53 mm (Ø x H)	22 x 64 mm (Ø x H)
Logger with large battery	20 x 59 mm (Ø x H)		20 x 63 mm (Ø x H)	20 x 72 mm (Ø x H)	22 x 83 mm (Ø x H)
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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The multifunction case:
Configuration, readout, transport.

The two multifunctional cases are available in different sizes, and equipped with an integrated programming and readout unit. Up to 8 data loggers can be configured and read out simultaneously in both cases. The large case also offers specially made holding mechanisms for data logger and battery storage. The programming and readout unit can also be removed in the large case.

Once the readout process has been completed, the loggers can be securely stored and transported in both the readout unit and the holding mechanisms. When the loggers are next used, they can be reconfigured right away, without needing to be removed from the readout unit beforehand and reinserted. This saves time and optimizes the validation process.

Efficient
Up to eight testo 190 data loggers can be configured and read out simultaneously in the cases.

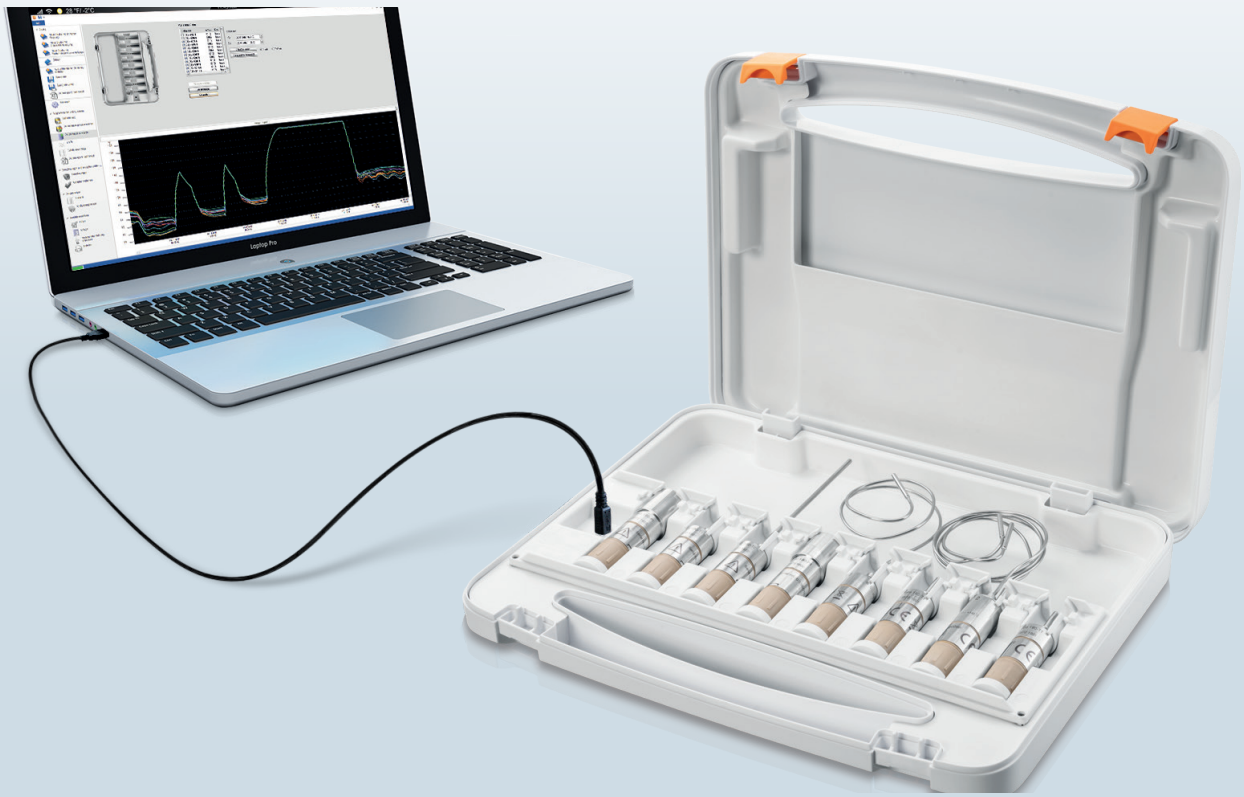
Flexible
There is a small and a large version of the cases available.



Practical
After the measurement, the data loggers can remain secured in the programming and readout unit.

Convenient
The large case offers holding mechanisms for up to 32 loggers and 25 batteries, thus enabling convenient transport.

Secure
The loggers are reliably protected against damage in both cases by a special case design.



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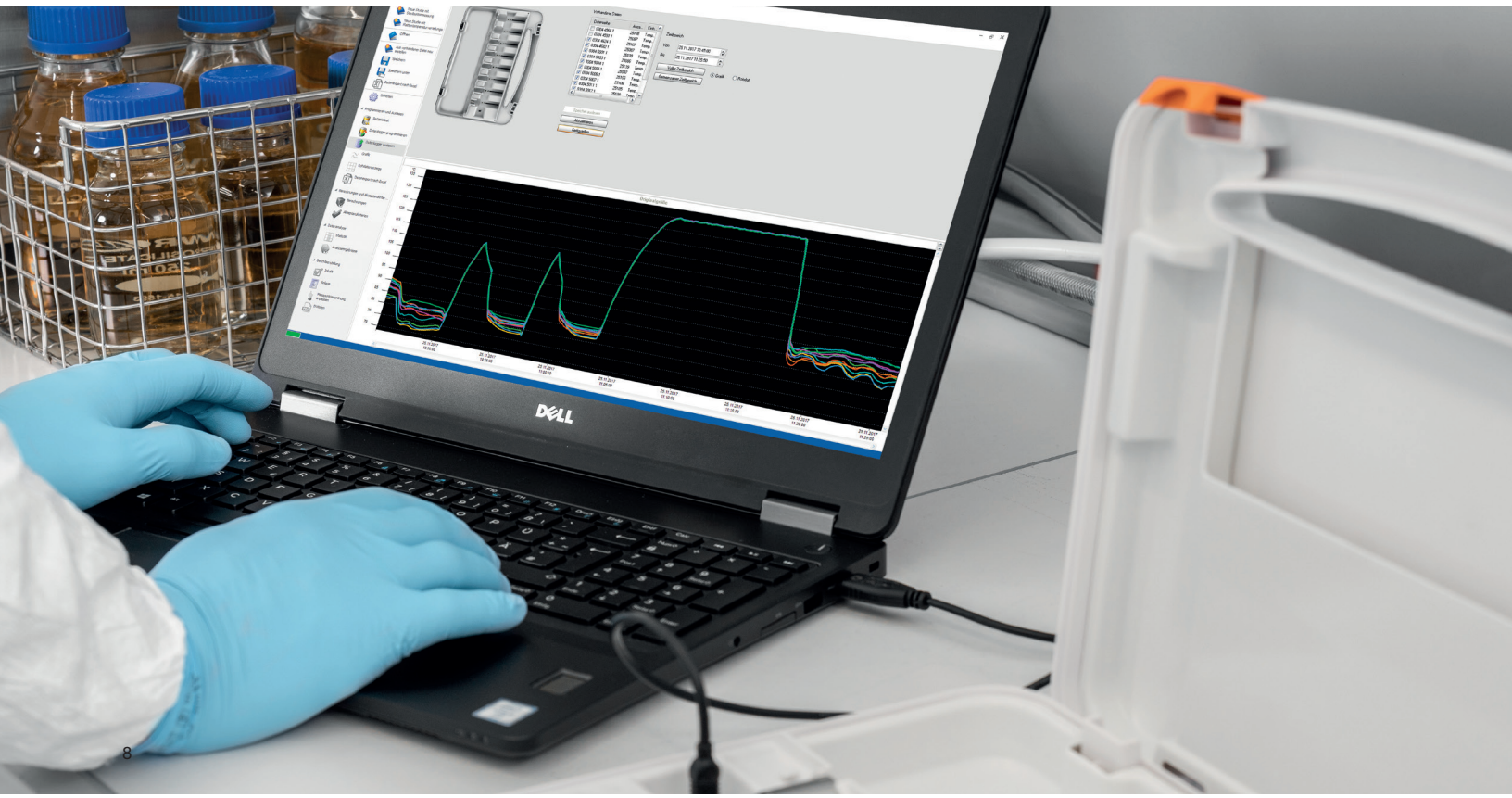
User Friendly Functionality:
The testo 190 CFR software.

The 21 CFR Part 11-compliant testo 190 CFR software provides you with effective support in your validation and qualification tasks. The testo 190 CFR software allows for fast simultaneous configuration and readout of up to eight data loggers with the multifunctional programming and readout case. The software's comprehensive data analysis tools and two audit reports are user friendly and informative for audit relevant activities.

The easily navigable software structure guides you intuitively through the process step by step and helps you at critical points in the input process through warnings. The functionality of the software was implemented with features to help with successful validation and qualification.

You will be impressed by these advantages:

- **Full System and File audit relevant documentation.**
- **Whether you are an expert or a novice: testo 190 CFR software provides users with optimum support during measuring processes.**
- **Fast and reliable overview of results.**
- **No data export to other applications; software contains chart tools for easier understanding of results.**
- **Readout of up to 254 loggers is possible for one validation qualification or study.**



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Tailor-made service:
So you can concentrate on what's important.

You can rely on Testo's experience and expertise for all services relating to the validation of your controlled temperature units, sterilization, and freeze drying processes. Our experts will implement your specifications based on your requirements.

Together we will individually determine the exact scope and right solution of the services required. Give us a call or send us an email.

Calibration of the testo 190 data loggers in accredited laboratories

- Reliable measurement results thanks to highly accurate calibration of your data loggers – traceable to national or international standards
- Depending on your individual needs, you get accredited NIST traceable calibrations
- All calibration certificates are available to you in PDF format in our calibration system.



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Ordering information.

testo 190 system components	Order no.
Data loggers	
testo 190-T1, temperature data logger, including large battery and adapter for testo 190 programming and readout unit.	0572 1901
testo 190-T2, temperature data logger, including large battery and adapter for testo 190 programming and readout unit.	0572 1902
testo 190-T3, temperature data logger, including large battery and adapter for testo 190 programming and readout unit.	0572 1903
testo 190-T4, temperature data logger, including large battery, adapter for testo 190 programming and readout unit and thread extension.	0572 1904
testo 190-P1, pressure data logger, including large battery.	0572 1900
Software	
testo 190 CFR software, 21 CFR Part 11-compliant software for configuration and readout of testo 190 data loggers. System requirements: Windows 7 (32/64 bit), Windows 8, Windows 10.	0554 1901
Case	
testo 190 small case, case for transport, storage, configuration and readout of testo 190 data loggers. Including USBcable and 1 programming and readout unit for a maximum of 8 data loggers. Dimensions: 340 x 265 x 60 mm.	0516 1901
testo 190 large case, case for transport, storage, configuration and readout of testo 190 data loggers. Including USBcable and 1 programming and readout unit for a maximum of 8 data loggers. With storage space for up to 32 data loggers, 25 batteries and additional accessories. Dimensions: 518 x 398 x 155 mm.	0516 1902

testo 190 accessories	Order no.
testo 190 small battery, PEEK coated. For the power supply of all testo 190 models. Application range: -20 to +140°C.	0515 1900
testo 190 large battery, PEEK coated. For the power supply of all testo 190 models. Application range: -50 to +140°C.	0515 1901
testo 190 freeze-drying probe holder (puck) for more precise measurement of surface temperature with the testo 190-T3 and testo 190-T4.	0554 1907
Retaining clamps (10 off), to secure the loggers (testo 190-T1/-T2/-T3/-T4) in the application areas (e.g. in autoclaves).	0554 0297
Distance adapters short (10 off) to secure the testo 190-T4 data logger in the programming and readout unit.	0554 0298
Distance adapters long (10 off) to secure the testo 190-T1, testo 190-T2 and testo 190-T3 data loggers in the programming and readout unit.	0554 0299



Small or large battery



Freeze-drying probe holder



Retaining clamp



Distance adapter short or long

testo 190 calibration certificates	Order no.
ISO temperature calibration certificate (testo 190-T1/-T2/-T3/-T4), calibration points -50°C; 0°C; +90°C; +121°C; +140°C	0520 0141
DAkkS temperature calibration certificate (testo 190-T1/-T2/-T3/-T4), calibration points -50°C; 0°C; +90°C; +121°C; +140°C	0520 0281
ISO pressure calibration certificate (testo 190-P1), calibration points 200 / 1400 / 2600 / 3800 / 5000 mbar	0520 0025
DAkkS pressure calibration certificate (testo 190-P1), calibration points 200 / 800 / 1400 / 2000 / 2600 / 3200 / 3800 / 4400 / 5000 mbar	0520 0215

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Be sure. testo

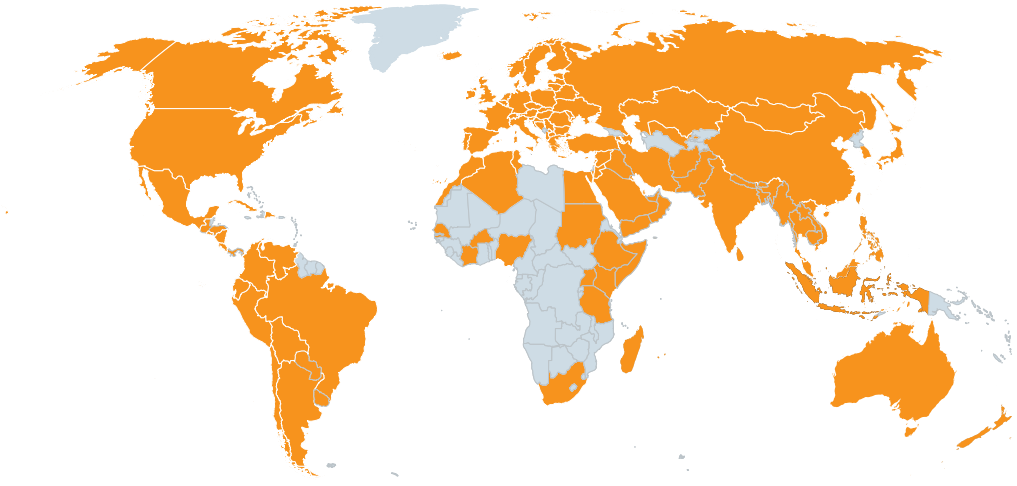
Testo:
High-tech from the Black Forest.



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

Subject to change, including technical modifications.

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