Data sheet
testo 190

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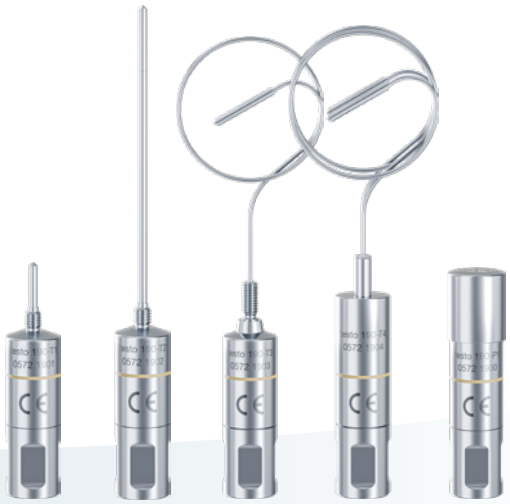
# CFR
# data logger system

## testo 190 – highly efficient validation of sterilization and freeze-drying processes



1-click report: full, audit-relevant documentation with just the click of a mouse

Reduction of processing time with full compliance

Acceptance criterion:
No problem meeting "10% failure rate"

21 CFR Part 11-compliant software:
provides both novices and experts with optimum support for measuring processes

°C

bar

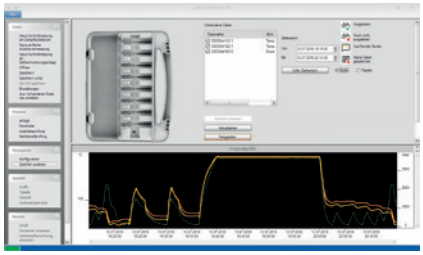
Its innovative design makes the testo 190 CFR data logger system the modern solution for the validation of sterilization and freeze-drying processes. The loggers' battery can be changed quickly and safely without tools. This speeds up your processes enormously – and after the change, the loggers remain 100% tight. The system comprises four temperature loggers and one pressure logger with rigid and flexible probes, a multifunction case with integrated programming and readout units, as well as 21 CFR Part 11-compliant software.

The battery can be freely combined with all testo 190 data loggers. The user-friendly testo 190 CFR software and the special readout units in the case allow up to 8 data loggers to be read out and programmed simultaneously.

# Overview of the system components

**The CFR data loggers** come in four temperature and one pressure models. They stand for robustness, durability and reliability. The thread means batteries can be safely changed in just a few seconds without any 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 190 completes the system. It is robust, smart and practical, not only providing storage for the data loggers, but also enabling configuration and readout. A programming and readout unit is installed in every case. This means that up to 8 data loggers can be configured and read out simultaneously.



**The data loggers are programmed and read out** using the intuitive testo 190 CFR software. No data export is needed for data analysis (e.g. in Excel). 1-click report means that full, audit-relevant documentation can be achieved with just one click of a mouse. 21 CFR Part 11-compliant of course. It is possible to read out a total of up to 254 loggers in one validation process.

# Ordering data

## testo 190-T1

testo 190-T1, CFR temperature data logger, including battery and adapter for testo 190 programming and readout unit.

Order no. 0572 1901

## testo 190-T2

testo 190-T2, CFR temperature data logger, including battery and adapter for testo 190 programming and readout unit.

Order no. 0572 1902

## testo 190-T3

testo 190-T3, CFR temperature data logger, including battery and adapter for testo 190 programming and readout unit.

Order no. 0572 1903

## testo 190-T4

testo 190-T4, CFR temperature data logger, including battery, adapter for testo 190 programming and readout unit and thread extension.

Order no. 0572 1904

## testo 190-P1

testo 190-P1, CFR pressure data logger, including battery.

Order no. 0572 1900

## 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.

Order no. 0554 1901

## testo 190 small case

testo 190 small case, case for transport, storage, configuration and readout of testo 190 CFR data loggers. Including USB cable and 1 programming and readout unit for a maximum of 8 data loggers.
Dimensions: 340 x 265 x 60 mm.

Order no. 0516 1901

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# Technical data / accessories

| CFR 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 mbar to 4 bar abs. |
| Accuracy | ±0,2 °C (-50 to -40 °C)<br>±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 | | | | |
| Operating temperature/ operating pressure | -50 to +140 °C<br>1 mbar to 4 bar | | | | 0 to +140 °C<br>1 mbar to 4 bar |
| Storage temperature | -20 to +50°C | | | | |
| Dimensions | | | | | |
| Logger with 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** | | | | | |
| Battery type | ½ AA lithium | | | | |
| Service life | 750 operating hours (measuring cycle 10 seconds at 121°C) | | | | |
| Application range | -50 to +140°C | | | | |

| testo 190 accessories | Order no. |
|---|---|
| testo 190 battery, replacement battery for all 190 logger models with long service life for quick and easy replacement. Application range: -50 to +140°C. | 0516 1902 |
| testo 190 battery retrofit kit, For the power supply of all testo 190 models. | 0515 1903 |
| 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 (5 off), to secure the loggers (testo 190-T1/-T2/-T3/-T4) in the application areas (e.g. in autoclaves). | 0554 0297 |
| Distance adapters short to secure the testo 190-T4 data logger in the programming and readout unit. | 0554 0298 |
| Distance adapters long to secure the testo 190-T1, testo 190-T2 and testo 190-T3 data loggers in the programming and readout unit. | 0554 0299 |
| 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 |
| GMP compliant IQ /OQ documentation (Basic Package, Guided Service Package or Full Service Package selectable) | 0520 9726 |

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Subject to change, including technical modifications.