

Be sure. **testo**

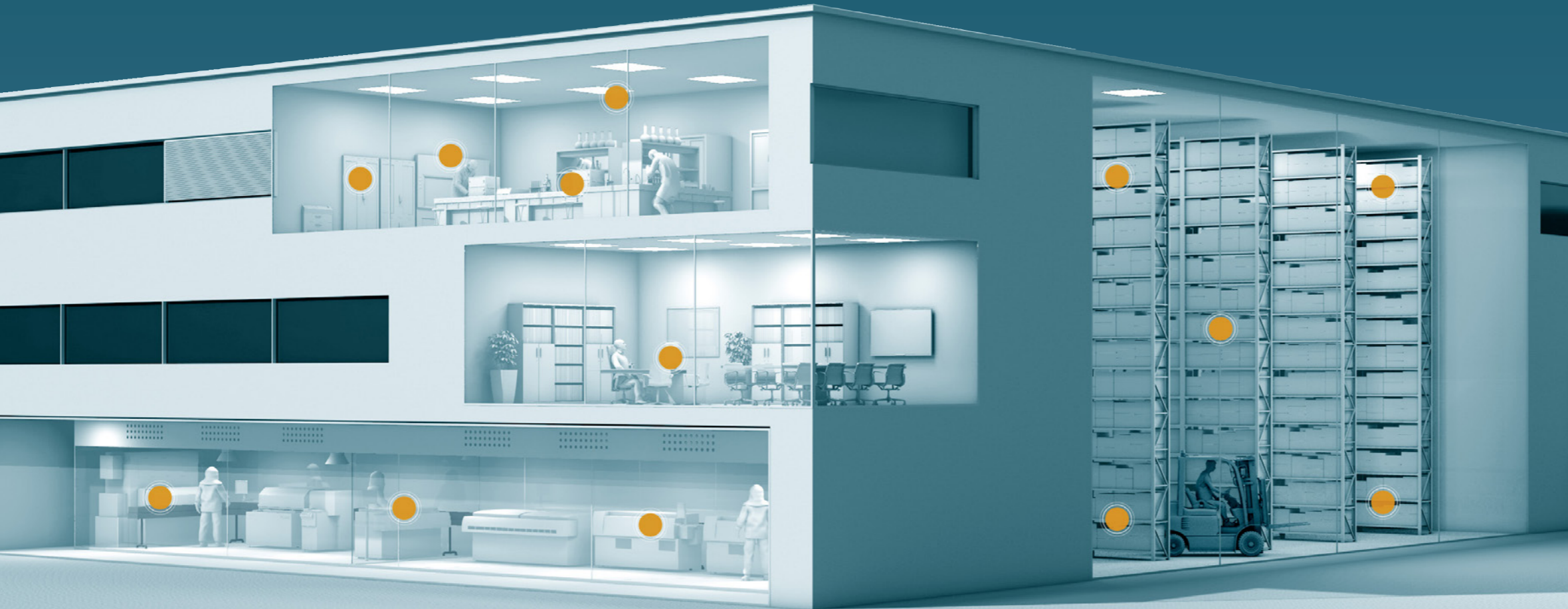


Environmental monitoring system **testo Saveris 1.**

Automated and uninterrupted measurement data recording with comprehensive alarm management.

testo Saveris 1: All the information at a glance – using just one system.

The all-in-one solution testo Saveris 1 was designed and implemented in collaboration with experts from industry as well as research and development. High-precision measurement technology, intuitive software and comprehensive services will help you to do your job quickly, efficiently and in compliance with current regulations



Get an overview of the entire process.

- ☑ Minimize risks and reduce costs to make your manufacturing processes more efficient.
- ☑ Access all your data on any platform, from anywhere and at any time.
- ☑ Use the recorded data for process analysis and optimization.

Achieve greater efficiency.

- ☑ Record the quality data for all key environmental parameters – digitally and paper-free.
- ☑ Record and document all relevant quality data for a variety of applications.
- ☑ Access your data at any time – and always be ready for your next audit.

Identify critical points.

- ☑ Detect faults early on and take corrective action.
- ☑ Use intelligent alarm functions for fast action.
- ☑ Identify potential issues before they even occur.

Have everything under control.

- ☑ Meet the high quality standards that are in force for your application.
- ☑ Strengthen quality awareness in your organisation and among your partners.
- ☑ Gain full control over the quality of individual areas of responsibility.

And for your next audit: **Be sure.**

testo Saveris 1: Areas of application for the Solution

Environmental monitoring just the way you need it

Indoor air quality

Stable ambient conditions are essential for protecting sensitive and valuable objects and products. For example, testo Saveris 1 undertakes the necessary monitoring of the indoor climate in museums, archives or even in the automotive industry.

The environmental monitoring system automates the central recording of all relevant climate data. By alerting you when limit values are exceeded, testo Saveris 1 proactively protects your valuable inventory from unwanted damage due to temperature or humidity deviations at all times.

At the measuring locations, the solution's probes can be attached flexibly and completely wirelessly. And the innovative, modular data logger principle, in combination with a diverse portfolio of probes, makes it possible to transmit the readings via WLAN, Ethernet or testo Ultra Range, adapted to your particular circumstances.

Laboratories & clean rooms

In order to meet the high quality standards in laboratories and cleanrooms, specified climate parameters must be maintained, among other things. Temperature in particular is a critical parameter that must be controlled and monitored. Humidity and pressure must also be included in standard-compliant IAQ monitoring. testo Saveris 1 offers you reliable, automated and continuous measurement and documentation of all relevant environmental conditions, thus providing optimum support in complying with your specifications.

Climatic chambers

Climatic chambers are a useful tool for a wide range of applications. Among other things, they are used to simulate storage and transport conditions. They can also be used to carry out life-cycle tests or simulate artificial ageing processes.

However, for these applications to be successful, the temperature and humidity conditions in the climatic chamber must correspond exactly to the specifications. This is the only way to simulate suitable ambient conditions. By monitoring temperature and humidity with testo Saveris 1, you can keep a close eye on these critical values at all times.

Ultra-low-temperature freezers/deep-freezers/ refrigerators

Wherever products and goods have to be cooled and monitored, measuring technology is used: Not only in the storage of vaccines, but also in hospitals, blood banks or laboratories.

It makes no difference whether it's long-term storage, temporary storage or just short-term storage. And depending on the specifications, extremely low temperatures are attained in the process.

If the storage process is ineffective, this can damage the products concerned and make them unusable. Then again, cooling that is set too cold can create high energy costs.

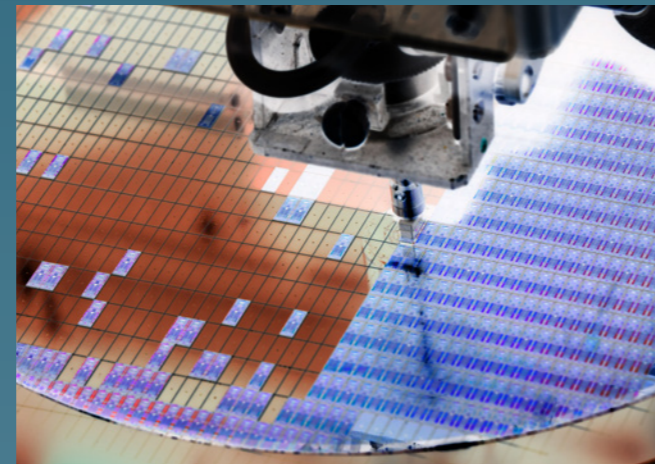
By seamlessly monitoring the temperature profile of the ultra-low-temperature freezers/deep-freezers/refrigerators, you always have complete assurance of sufficient cooling and no wastage of energy during the process.

Storage

Even in the general storage of goods of any kind, minimum standards are often required when it comes to implementing and documenting continuous temperature monitoring. This applies to the pharmaceutical industry and medical technology as well as to the food sector or logistics and industrial companies in general. The reason: Monitoring is the only way to ensure that the quality and safety of products is not jeopardized.

To ensure maximum quality, a reliable temperature distribution study (mapping) of the room to be monitored is essential. The system is then installed according to the findings from the mapping.

At Testo, not only do we supply you with the system, we also provide you with full support when it comes to calibration, mapping, qualification and validation of your individual storage situation.



testo Saveris 1: System overview

Communication modules
The use of different communication technologies with the testo 150 data logger modules is permitted. Depending on the application, you can either use an existing infrastructure (WLAN or Ethernet) or the **testo UltraRange** long-range radio technology. With this innovative product, you have the option of using an autonomous radio network via encrypted, proprietary signals, which has an excellent range and signal stability for use in enclosed spaces.

More information on page 10

testo Saveris Base V 3.0
The core component of testo Saveris manages measurement data from up to 3,000 channels, evaluates it and generates alarms if any limit value violations should occur.

More information on page 12

testo Saveris PRO software
All measurement data is compiled, visualized and documented seamlessly. At the same time, the software enables detailed analysis, graphic/tabular presentation and evaluation of the data. The alarm management system can be customized. Reports can be configured automatically or manually.

More information on page 21

Analog coupler
In addition to temperature and humidity, other measurement parameters such as differential pressure can be integrated into the testo measurement data monitoring system. For example, all transmitters with standardized current and voltage inputs can be integrated.

More information on page 14

Cockpit of testo Saveris
The web-based, intuitive cockpit of the testo Saveris PRO software makes it possible to detect alarms at any time, to initiate corrective measures and to acknowledge them. Alarms are clearly displayed in the cockpit. Each acknowledgement of an alarm must be completed with a personalized, digital signature as well as a mandatory comment on the event.

More information on page 20

testo 150 data logger modules
Safe, simple and efficient monitoring of critical environmental parameters in accordance with the strictest guidelines.

testo 150 TUC4
(four connections for digital sensors): Probe replacement and calibration during ongoing operation, independent of the data logger module.

testo 150 TC4
(four connections for thermocouples): Ideal for industrial applications and measurement of extreme conditions.

testo 150 DIN2
(two connections for standard probes): Enables use of the Testo probe portfolio covering all applications.

testo 150 T1
(internal sensor): Built-in NTC temperature sensor for temperature monitoring

More information on page 8

Transmitter
testo 6681 with probe:
Humidity and temperature measurement for special applications (high humidity / trace humidity / challenging measurement environments, e.g. H₂O₂)

testo 6383
High-precision differential pressure measurement in clean room applications (transmitter in flush design, optional combination of differential pressure, humidity and temperature)

For more information, please get in touch with your contact partner.

Digital probes
High-precision measurements for quality-relevant parameters in a regulated environment. It is not necessary to interrupt the measurement to calibrate the probes – they are replaced during operation. There is no need to remove the data loggers and there are no gaps in the measured values.

More information on page 16

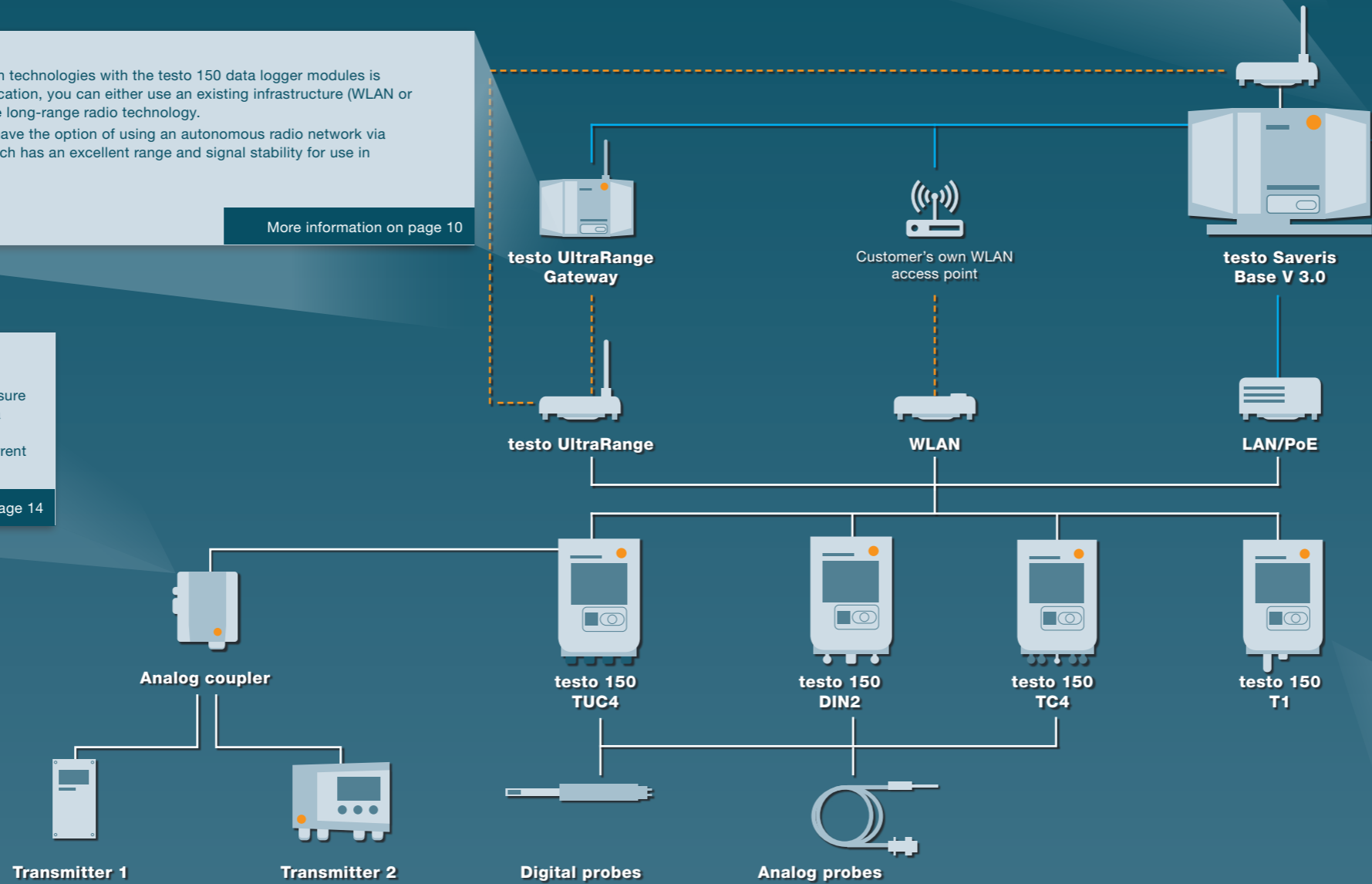
Analog probes
Almost every possible temperature measurement scenario is covered:

NTC resistance probes
are exceptionally robust and reliable

Platinum resistance probes
(PT 100) are used for measurements in a wider temperature range

Thermocouples
are used primarily in industry because of their wide measuring range and comprehensive selection of sensors.

More information on page 18



Data logger modules for monitoring environmental parameters

testo 150



- Automated, uninterrupted, no-loss recording of measurement data - even in regulated environments
- Can be combined with Testo communication modules for measurement data transmission via WLAN, Ethernet or testo UltraRange technology
- Reliable alarm system & comprehensive documentation
- Efficient monitoring by connecting up to four sensors
- Certified according to DIN EN 12830:2018
- In the event of any limit value violations, alarms on the logger itself

The four testo 150 data logger modules are part of the testo Saveris 1 environmental monitoring system and they enable safe, simple and efficient monitoring of critical environmental parameters in accordance with the strictest guidelines.

- **testo 150 TUC4** (four connections for digital sensors): Probe replacement and calibration during ongoing operation, independent of the data logger module.
- **testo 150 TC4** (four connections for thermocouples): Ideal for industrial applications and measurement of extreme conditions.
- **testo 150 DIN2** (two connections for standard probes): Enables use of the Testo probe portfolio covering all applications.
- **testo 150 T1** (internal sensor): Built-in NTC temperature sensor for temperature monitoring

All data logger modules alert you to limit violations via the measurement data management software, testo Saveris PRO software and the testo Saveris Cockpit.

Thanks to their modular design, the testo 150 data logger modules can be integrated into any existing communication infrastructure (WLAN, LAN). The optional testo UltraRange long-range radio technology also enables the autonomous and secure transmission of readings over long distances.

Note: Technical data can be found on page 22

Order data

testo 150 TUC4

Data logger module with display and 4 connections for all Testo sensors with TUC (Testo Universal Connector). Incl. wall bracket, batteries and calibration protocol.

Order no. 0572 3320



testo 150 DIN2

Data logger module with display and 2 connections for temperature sensors with miniDIN connector. Incl. wall bracket, batteries and calibration protocol.

Order no. 0572 3340



testo 150 TC4

Data logger module with display and 4 connections for thermocouples. Incl. wall bracket, batteries and calibration protocol.

Order no. 0572 3330



testo 150 T1

Data logger module with display and 1 internal NTC temperature sensor. Incl. wall bracket, batteries and calibration protocol.

Order no. 0572 3350



Accessories

Accessories	Order no.
L91 Energizer batteries	0515 0572
Mains unit & USB cable for testo 150	0572 5004
4 x AIMn battery LR 6 (alkaline manganese AA batteries)	0515 0414
Magnetic attachment for testo 150 wall bracket	0554 2001

Communication modules	Order no.
LAN / PoE communication module	0554 9330
WLAN communication module	0554 9320
testo UltraRange communication module (region Europe)	0554 9311 01
testo UltraRange communication module (region Americas)	0554 9312 01
testo UltraRange communication module (region China)	0554 9313 01
testo UltraRange communication module (region APAC*)	0554 9314 01
testo UltraRange communication module (region South Korea)	0554 9315 01
testo UltraRange communication module (region India)	0554 9316 01
testo UltraRange communication module (region Russia)	0554 9317 01

*Japan, Malaysia, Singapore, Taiwan, Macau

Communication modules for testo 150, testo Saveris Base V3.0 and testo UltraRange Gateway



Modular components for communication via WLAN, Ethernet and testo UltraRange (radio)

testo UltraRange technology: Very high radio range and signal stability compared with conventional radio technologies

International radio authorizations

Can be freely combined with all testo 150 data logger modules for maximum scope of application

Easy installation, maintenance and commissioning

The communication modules enable the use of a wide range of communication technologies with the testo 150 data logger modules. Depending on the application, you can either use an existing infrastructure (WLAN or Ethernet) or use the testo UltraRange long-range radio technology.

With this innovative product, you have the option of using an autonomous radio network via encrypted, proprietary signals, which has an excellent range and signal stability for use in enclosed spaces.



Note: Technical data for the modules can be found on page 23

Order data

LAN/PoE communication module

LAN communication module with PoE for testo 150 data loggers

Order no. 0554 9330



WLAN communication module

WLAN communication module for testo 150 data loggers

Order no. 0554 9320

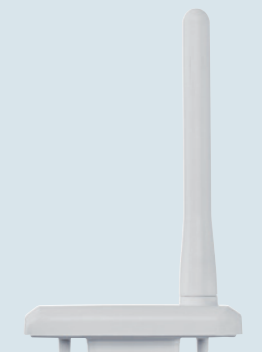


testo UltraRange communication module

testo UltraRange communication module for testo 150 data loggers and testo UltraRange Gateway

Version	for	Order no.	Version	for	Order no.
Region Europe	Data logger	0554 9311 01	Region South Korea	Data logger	0554 9315 01
	Base and Gateway	0554 9311 02		Base and Gateway	0554 9315 02
Region Americas	Data logger	0554 9312 01	Region India	Data logger	0554 9316 01
	Base and Gateway	0554 9312 02		Base and Gateway	0554 9316 02
Region China	Data logger	0554 9313 01	Region Russia	Data logger	0554 9317 01
	Base and Gateway	0554 9313 02		Base and Gateway	0554 9317 02
Region APAC*	Data logger	0554 9314 01			
	Base and Gateway	0554 9314 02			

*Japan, Malaysia, Singapore, Taiwan, Macau



Compatible components

Base	Order no.
testo Saveris Base V3.0	0572 9320

Gateway	Order no.
testo UltraRange Gateway	0572 9310

Data logger	Order no.
testo 150 TUC4 data logger	0572 3320
testo 150 TC4 data logger	0572 3330
testo 150 DIN2 data logger	0572 3340
testo 150 T1 data logger	0572 3350

Base station and Gateway

testo Saveris Base V3.0 testo UltraRange Gateway



- Automated, uninterrupted, no-loss storage of measurement data
- The testo Saveris Base V3.0 can manage up to 3,000 measurement channels
- Comprehensive alarm management
- Alarms in the event of limit value violations as per GxP specifications

testo Saveris Base V3.0 is the core component of the testo Saveris 1 environmental monitoring system. It manages measurement data from up to 3,000 channels, evaluates it and generates alarms if any limit value violations should occur.

The built-in emergency battery guarantees maximum data security, even in the event of a power failure. The system alerts you visually, as well as via e-mail and SMS. Optionally, further optical and acoustic signalling devices can be connected via an alarm relay.

Besides Ethernet and WLAN, the testo Saveris 1 environmental monitoring system also supports testo UltraRange long-range radio technology. In addition to using an existing infrastructure, this also offers the option of using an autonomous radio network via encrypted, proprietary signals, which has an excellent range and signal stability for use in enclosed spaces.

! **Note: For technical data on the Base station and Gateway, please see page 24**

Order data

testo Saveris Base V3.0


testo Saveris Base incl. rechargeable battery and configuration cable.
Caution: Communication modules and mains units are not included in delivery.



Order no. 0572 9320

testo UltraRange Gateway

Gateway for testo UltraRange radio connection incl. configuration cable.
Caution: Communication modules and mains units are not included in delivery.



Order no. 0572 9310

Accessories

Accessories for testo Saveris Base V3.0 and testo UltraRange Gateway	Order no.
Tabletop stand	0554 7200
Mains unit with USB cable	0572 5004
testo UltraRange communication module (region EU)	0554 9311 02
testo UltraRange communication module (region US)	0554 9312 02
testo UltraRange communication module (region CN)	0554 9313 02
testo UltraRange communication module (region APAC*)	0554 9314 02
testo UltraRange communication module (region KR)	0554 9315 02
testo UltraRange communication module (region IN)	0554 9316 02
testo UltraRange communication module (region RU)	0554 9317 02
*Japan, Malaysia, Singapore, Taiwan, Macau	

Accessories for testo Saveris Base V3.0	Order no.
Spare rechargeable battery	0515 5107
LTE stick (EMEA)	0554 7210
LTE stick (Americas)	0554 7211
LTE stick (APAC & Australia)	0554 7212
External antenna for LTE stick	0554 7230
Alarm module (optical & audible)	0572 9999
	for operation: 24V mains unit 0554 1749 required

Digital analog coupler with current/voltage input for the data logger module testo 150 TUC4

testo Saveris Pharma



Integration of lots of other measurement parameters
via 4 – 20 mA connection

Standardized interfaces for easy integration

Easy connection to the testo 150 TUC4 data logger via TUC
(Testo Universal Connector)

In addition to temperature and humidity, other measurement parameters such as differential pressure can be integrated into the Testo environmental monitoring system. For example, all transmitters with standardized current and voltage inputs can be integrated.

The digital analog coupler is easily integrated into the Saveris system via Ethernet, WLAN or testo UltraRange radio technology using the testo 150 TUC4 data logger.

Order data

Digital analog coupler for testo 150



Order no. 0572 2166



Note: For technical data on the digital analog coupler, please see page 25



Digital temperature and humidity probes for the testo 150 TUC4 data logger module



- High-precision digital probes for standard-compliant measurements
- Probe replacement within seconds, with no data gaps in the documentation
- Wide temperature measuring range
- Easy handling and installation
- Efficient system monitoring with digital door contacts

The digital probes make it possible to carry out high-precision measurements even in a regulated environment. It is not necessary to interrupt the measurement to calibrate the probes – they are replaced during operation. There is no need to remove the data loggers and there are no gaps in the measured values.

The digital probes can be used with the testo 150 TUC4 data logger module and benefit from the versatility of the testo Saveris 1 environmental monitoring system: Use either different communication infrastructures such as WLAN or Ethernet, or the state-of-the-art testo UltraRange radio technology for unparalleled, secure and efficient long-range communication in a proprietary network.



Note: For technical data on digital temperature and humidity probes, please see page 26

Order data

Probe/logger matrix

Order no.	Description	testo 150 TUC4	testo 150 TC4	testo 150 DIN2
Digital probes				
0572 2162	Digital NTC stub temperature probe	X	-	-
0572 2163	Digital PT100 cable temperature probe	X	-	-
0572 2164	Digital stub humidity/temperature probe	X	-	-
0572 2165	Digital cable humidity/temperature probe	X	-	-
0572 2161	Digital door contact	X	-	-
0618 0071	Flexible digital Pt100 temperature probe	X	-	-
0618 7072	Glass-coated digital Pt100 laboratory probe	X	-	-

Accessories

	Temperature range	Order no.
Extension cable 2 m	-30 to +50 °C	0449 3302
Extension cable 6 m	-30 to +50 °C	0449 3306
Extension cable 10 m	-30 to +50 °C	0449 3310

Analog temperature probes for the testo 150 data logger modules



- High-precision measurement in the GxP-regulated environment
- Wide temperature measuring range
- Extensive probe portfolio – customized adaptations are also possible
- Short response time
- Different cable variants and cable lengths available

Testo's analog temperature probes cover almost every possible temperature measurement scenario in sophisticated applications.

NTC resistance probes are exceptionally robust and reliable. They also feature a high degree of accuracy and a wide range of applications within temperature measurement.

Platinum resistance probes (PT100) are used when a wider temperature range needs to be measured than can be covered by NTC resistance probes, for example.

Thermocouples really stand out thanks to a flexible and broad selection of suitable sensors for a wide range of applications.

Probe/logger matrix

Type	Probes	Order no.	Probe suitable for data logger		
			testo 150 TUC4	testo 150 TC4	testo 150 DIN2
NTC	Penetration probe NTC with ribbon cable, cable length 2 m, IP 54	0572 1001	-	-	X
	External temperature probe 12 mm, plug-in, without cable	0572 2153	-	-	X
	Stub probe, IP 54	0628 7510	-	-	X
	Accurate immersion/penetration probe, cable length 6 m, IP 67	0610 1725	-	-	X
	Stationary probe with aluminium sleeve, IP 65	0628 7503	-	-	X
	Pipe wrap probe with Velcro tape for pipe diameters up to max. 75 mm	0613 4611	-	-	X
	Probe for surface measurement	0628 7516	-	-	X
	Wall surface temperature probe	0628 7507	-	-	X
	Stainless steel NTC food probe (IP65) with PU line	0613 2211	-	-	X
	Waterproof NTC immersion/penetration probe	0613 1212	-	-	X
	Accurate immersion/penetration probe, cable length 1.5 m, IP 67	0628 0006	-	-	X
	Waterproof immersion/penetration probe	0615 1212	X	-	-
	Robust air probe	0615 1712	X	-	-
	Temperature probe with Velcro	0615 4611	X	-	-
	PT100	Penetration probe Pt100 with ribbon cable, cable length 2 m, IP54	0572 7001	-	-
Robust, waterproof Pt100 immersion/penetration probe		0609 1273	-	-	X
Robust Pt100 stainless steel food probe (IP65)		0609 2272	-	-	X
TC	Penetration probe, TC type K with ribbon cable, cable length 2 m, IP 54	0572 9001	-	X	-
	Thermocouple with TC plug, flexible, length 800 mm, fibreglass	0602 0644	-	X	-
	Thermocouple with TC plug, flexible, length 1500 mm, fibreglass	0602 0645	-	X	-
	Thermocouple with TC plug, flexible, length 1500 mm, PTFE	0602 0646	-	X	-
	Magnetic probe, adhesive force approx. 20 N, with adhesive magnets	0602 4792	-	X	-
	Magnetic probe, adhesive force approx. 10 N, with adhesive magnets	0602 4892	-	X	-
	Immersion measuring tip, flexible, for measurements in air/flue gases	0602 5693	-	X	-
	Immersion measuring tip, flexible	0602 5792	-	X	-
	Flexible, low-mass immersion measuring tip	0602 0493	-	X	-
	Pipe wrap probe for pipe diameters 5 to 65 mm	0602 4592	-	X	-
	Pipe wrap probe with Velcro strip	0628 0020	-	X	-
	Stationary probe with stainless steel sheath	0628 7533	-	X	-
	Waterproof superfast needle probe	0628 0027	-	X	-
	Frozen food probe for screw-in use without pre-drilling	0603 3292	-	X	-
	Robust food penetration probe with special handle	0603 2492	-	X	-
Waterproof standard immersion/penetration probe	0603 1293	-	X	-	

! Note: For technical data on analog temperature probes, please see pages 27 and 28

Measurement data management software for the most stringent requirements

testo Saveris CFR
testo Saveris PRO
Cockpit



- Client and viewer software including database for installation on PC or server
- Fast localization and analysis of alarms with graphic visualization
- Platform-independent data access
- Customizable alarm management and reporting
- Reduced training requirement and low error potential thanks to intuitive operability
- Possibility of alarm acknowledgement via smart device

In the testo Saveris software, all measurement data is collated, visualized and documented seamlessly.

The validatable CFR version of the software ensures strict compliance with US 21 CFR Part 11 as well as Annex 11 of the EU GMP Guideline through maximum data integrity, audit trail, user levels with different user rights and electronic signatures.

The web-based, intuitive testo Saveris Cockpit also allows alarms to be identified and acknowledged at all times and from any terminal device. Alarms are clearly presented in the testo Saveris Cockpit and can no longer be overlooked. Each acknowledgement of an alarm must be completed with a personalized, digital signature as well as a mandatory comment on the event.

Order data

testo Saveris PRO

testo Saveris PRO software (1-10 users) + Cockpit Order no. 0572 0181
testo Saveris PRO license (+1 user) Order no. 0572 0190

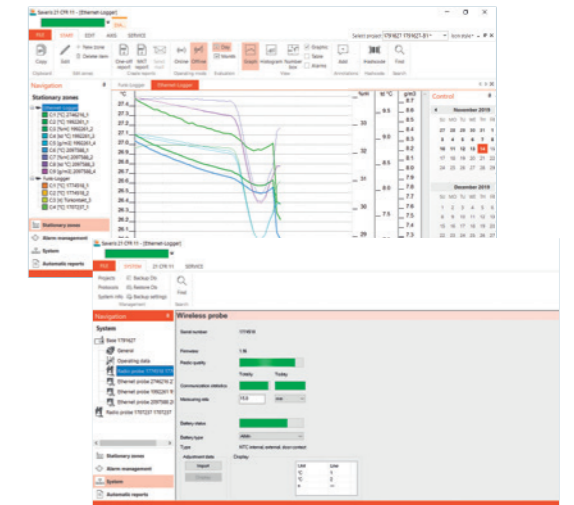
testo Saveris CFR

testo Saveris CFR software license (1-10 users) + Cockpit Order no. 0572 0182
testo Saveris CFR software license (+1 user) Order no. 0572 0193
testo Saveris CFR Software license (unlimited) Order no. 0572 0195



testo Saveris PRO Software

- Alarm management incl. escalation management
- Calibration management
- Extended analysis functions without data export as a CSV file (however optionally also possible)
- Individual reporting based on the rules and wishes of the user
- Analysis and graphical/tabular display of measurement data
- Client-server concept: the measurement data can be monitored by different PCs connected to the network
- All recorded measurement data from humidity and temperature monitoring is centrally archived and stored tamper-proof by the testo Saveris software.



The testo Saveris CFR software also includes

- Powerful user management based on different Windows user groups and the respective valid Windows Active Directory entries
- Audit trail and ERES (Electronic Records / Electronic Signatures) concept based on regulatory requirements according to 21CFR part 11 and EU Annex 11 of the GMP regulations

testo Saveris Cockpit

- Easy and location-independent access to measurement data as well as alarm acknowledgement via your smart device
- Easy and intuitively operated, platform-independent user interface
- Significantly reduced requirement for training and the creation of training courses and SOPs
- Geographically hierarchical structure allows zooming into complex systems with a large number of measurement locations
- Powerful user management, based on the customer's Windows Active Directory content
- Control of access and alarm acknowledgement rights
- Individualization of the system by upload of own floor plans and logos



Technical data for data logger modules

	testo 150 TUC4	testo 150 TC4	testo 150 DIN2	testo 150 T1
Display				
Display type	Segment display			
Display functions	Display of 2 measurement channels, limit value violations, connection status, signal strength, battery status, display can be disabled			
Physical specifications				
Housing material	PC/PET (front) / ABS+PC+10% GF/PET (rear)			
Size (W x H x L)	69.3 x 88.0 x 29.0 mm	69.3 x 89.3 x 29.0 mm	69.3 x 87.9 x 29.0 mm	69.3 x 88.3 x 29.0 mm
Measuring range	Analog (NTC): -40 to +150 °C Digital: See probes	1. TC Type K: -200 to +1350 °C 2. TC Type J: -100 to +750 °C 3 TC Type T: -200 to +400 °C	NTC: -40 to +150 °C Pt100 (with external probe): -200 to +600 °C	-40 to +50 °C (internal probe)
Accuracy (±1 digit)	Analog (NTC): ±0.3 °C Digital: See probes	±(0.5 °C + 0.5% of measured value)	NTC: ±0.3 °C Pt100: ±0.1 °C (0 to +60 °C) ±0.2 °C (-100 to +200 °C) ±0.5 °C (other measuring ranges)	±0.4 °C
Resolution	Analog (NTC): 0.1 °C / 0.1 °F Digital: See probes	0.1 °C	NTC: 0.1 °C / 0.1 °F Pt100: 0.01 °C / 0.01 °F	0.1 °C / 0.1 °F
Weight	Approx. 255 g			
IP protection class	IP 67 & IP 65 (with mounted testo UltraRange and WLAN communication module), IP 30 (Ethernet) (in each case without probe)			
Operating and storage conditions				
Storage temperature	-40 to +60 °C			
Operating temperature	-40 to +50 °C			
Power				
Power supply	optionally via mains unit & micro USB (0572 5004)			
Battery type	4 x AA alkaline manganese batteries At temperatures below +10 °C, the use of Energizer Li batteries is recommended (0515 0572)			
Battery life	testo UltraRange: Up to 7.2 years WLAN: 3.5 years (1 h communication cycle, 15 min measurement, +25 °C, 1 digital NTC probe connected)	testo UltraRange: Up to 6.4 years WLAN: 3.3 years (1 h communication cycle, 15 min measurement, +25 °C, 1 Type K probe connected)	testo UltraRange: Up to 6.7 years WLAN: 3.7 years (1 h communication cycle, 15 min measurement, +25 °C, 1 analog NTC probe connected)	testo UltraRange: Up to 7.2 years WLAN: 3.5 years (1 h communication cycle, 15 min measurement, +25 °C)
Interfaces				
Connections	4x TUC micro USB TCI (testo Communication Interface)	4x thermocouple (Type K, J, T) micro USB TCI (testo Communication Interface)	2x miniDIN micro USB TCI (testo Communication Interface)	micro USB TCI (testo Communication Interface)
Measurement data storage				
Measuring interval	5 seconds to 24 hours (Ethernet communication) / 1 minute to 24 hours (testo UltraRange radio or WLAN)			
Channels	16	4	2	1
Internal memory (per channel)	min. 16,000 readings	min. 64,000 readings	min. 128,000 readings	256,000 readings
Communication cycle	1 minute to 24 hours			
Other				
Wall bracket	Included			

Technical data for communication modules

	LAN/PoE communication module	WLAN communication module	testo UltraRange communication module
Physical specifications			
Housing material	Plastic		
Size (W x H x L)	67.8 x 29.5 x 28.9 mm	67.8 x 12.2 x 28.9 mm	67.8 x 112.8 x 28.9 mm
Weight	Approx. 45 g	Approx. 17 g	Approx. 30 g
IP protection class (when connected to a testo 150 data logger module)	IP 30	IP 67	IP 67
Operating and storage conditions			
Storage temperature	-40 to +60 °C		
Operating temperature	-35 to +50 °C	-35 to +50 °C	-40 to +50 °C
Power			
Power supply	via PoE (Class 0)	via TCI	via TCI
Interfaces			
Connections	LAN (transmission rate: 10/100 Mbit)	TCI	TCI
Connectible loggers	testo 150 TUC4, testo 150 TC4, testo 150 DIN2, testo 150 T1		
Measurement data storage			
Communication cycle	1 min to 24 h		
Other			
Radio frequency	-	2.4 GHz	868 MHz (region Europe) 868 MHz (China) 920 MHz (region APAC*) 915 MHz (region Americas) 922 MHz (South Korea) 865 MHz (India) 868 MHz (Russia)
Transmission range		20 m inside buildings	100 m inside buildings (depending on spatial conditions) 17 km with no obstructions

*Japan, Malaysia, Singapore, Taiwan, Macau

Technical data for Base station and Gateway

	Base station testo Saveris Base V3.0	testo UltraRange Gateway
Physical specifications		
Housing material	ABS/PC plastic	
Dimensions (L x W x H)	193 x 112 x 46 mm	
Weight	Approx. 370 g	Approx. 314 g
IP protection class	IP20	
Operating and storage conditions		
Storage temperature	-20 to +60 °C	-20 to +80 °C
Operating temperature	+5 to +35 °C	0 to +50 °C
Power		
Power supply	PoE class 0; optionally via mains unit & micro USB cable (order no. 0572 5004)	
Rechargeable battery type	Li-Ion rechargeable battery, 3.7 V / 2.6 Ah, Order no. 0515 0107 (for data backup and emergency alarm in the event of power failure)	-
Interfaces		
Connections	2x USB LAN/PoE: Transfer rate 10/100 Mbit PoE class 0 micro USB alarm relay connection	1x USB LAN/PoE: Transfer rate 10/100 Mbit PoE class 0 micro USB
Channels per Base	3,000	-
Loggers per Gateway	-	40
Measurement data storage		
Memory	Circular buffer memory	-
Max. number of measurement values	120,000,000	-
Internal memory (per channel)	40,000	-
Other		
Alarm relay	Connection for external alarm relay available	-
GSM module	via LTE stick	-

Technical data for digital analog coupler

Physical specifications	
Housing material	Plastic
Size (W x H x L)	85 x 100 x 38 mm
Weight	240 g
IP protection class	IP54
Operating and storage conditions	
Storage temperature	-25 to +60 °C
Operating temperature	+5 to +45 °C
Power	
Power supply	Power supply via testo 150 TUC4 logger
Interfaces	
Connections	2- or 4-wire current/voltage input
Connectible loggers	testo 150 TUC4
Measurement data storage	
Measuring range	4 to 20 mA; 0 to 10 V
Measuring interval	1 min to 24 h
Internal memory (per channel)	6,000 readings
Communication cycle	depends on method of communication of testo 150
Accuracy	Power Maximum error: ±0.03 mA Resolution (min. error): 0.75 µA (16 bit) typical error: 5 µA
	Voltage 0 to 1 V maximum error: ±1.5 mV resolution (min. error): 39 µV (16 bit) Typical error: 250 µV 0 to 5 V maximum error: ±7.5 mV resolution (min. error): 0.17 mV typical error: 1.25 mV 0 to 10 V maximum error: ±15 mV Resolution (min. error): 0.34 mV Typical error: 2.50 mV

Technical data for digital temperature and humidity probes


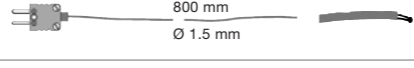
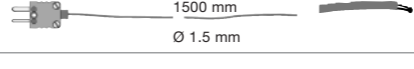
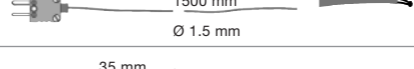
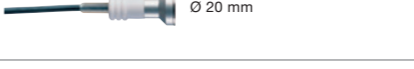

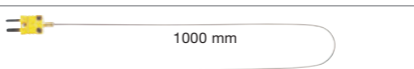


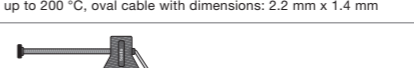


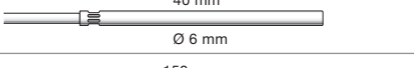
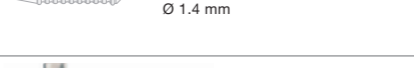


Probes	Digital NTC stub temperature probe 0572 2162	Digital stub humidity/temperature probe 0572 2164**	Digital cable humidity/temperature probe 0572 2165**	Digital door contact 0572 2161
Order no.	0572 2162	0572 2164**	0572 2165**	0572 2161
Measurement parameters	°C/°F	°C/°F, %RH (+ °C _{td} , g/m ³)	°C/°F, %RH (+ °C _{td} , g/m ³)	-
Probe type	NTC	NTC	NTC	-
Operating temperature	-30 to +50 °C			
Storage temperature	-30 to +60 °C			
Measuring range	-30 to +50 °C	-30 to +50 °C / 0 to 100 %RH (non-condensing)		I/O
System accuracy	±0.4 °C	±0.4 °C at +25 °C ±2.0 %RH at 0 to 90 %RH at +25 °C ±0.03 %RH/K (k=1) ±1.0 %RH hysteresis ±1.0 %RH/year drift		-
Resolution	0.1 °C	0.1 °C / 0.1 %RH		-
Dimensions	Length 140 mm Ø 15 mm	Length 140 mm Ø 15 mm		Length 30 mm / width 40 mm / height 7 mm
Cable diameter	-	-	5 mm	2 mm
Cable length	-	-	1.3 m	1.3 m
Protection class	IP42 in the data logger/probe system			
Weight	17.2 g	17.4 g	40.8 g	22.8 g
t ₉₀	°C 240 s	°C 240 s / %RH 20 s	°C 240 s / %RH 20 s	-
Connection	TUC			

**Please do not use the probe head in condensing atmospheres. For continuous application in high-humidity ranges: > 80 %RH at ≤ 30 °C for > 12 h and > 60 %RH at > 30 °C for > 12 h, please contact Testo Service or contact us via the Testo website.

Probes	Digital Pt100 cable temperature probe 0572 2163*	Flexible digital Pt100 temperature probe 0618 0071	Glass-coated digital Pt100 laboratory probe 0618 7072
Order no.	0572 2163*	0618 0071	0618 7072
Measurement parameters	°C/°F	°C/°F	°C/°F
Probe type	Pt100	Pt100	Pt100
Operating temperature	-30 to +50 °C		
Storage temperature	-30 to +60 °C		
Measuring range	-85 to +150 °C (only probes and cable)	-100 to +260 °C	-50 to +400 °C
System accuracy	±(0.25 °C + 0.3% of reading) at -49.9 to +99.9 °C ±0.55 °C remaining measuring range	±(0.3 °C + 0.3% of measured value)	±(0.3 °C + 0.3% of measured value) (-50 to +300 °C) ±(0.4 °C + 0.6% of measured value) (+300.01 to +400 °C)
Resolution	0.01 °C	0.01 °C	0.01 °C
Dimensions	Length 90 mm Ø 3 mm	Length 1000 mm Ø 4 mm	Length 200 mm Ø 3 mm
Cable diameter	5 mm	4 mm	3 mm
Cable length	1.3 m	1 m	1.6 m
Protection class	IP42 in the data logger/probe system		
Weight	23.8 g	29 g	39 g
t ₉₀	°C 20 s	°C 45 s	°C 45 s
Connection	TUC		

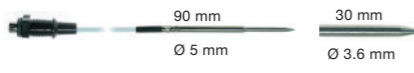


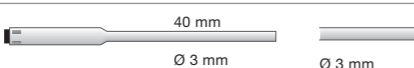
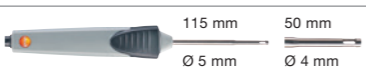

*Pt100 accuracy Class A

Technical data for TC probes

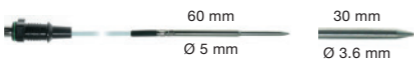

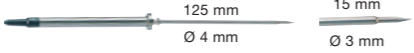
	Dimensions Probe shaft/probe shaft tip	Measuring range	Accuracy	t ₉₀	Order no.
TC probes					
Penetration probe, TC type K with ribbon cable, cable length 2 m, IP 54		-40 to +220 °C	Class 1*	7 sec	0572 9001
Thermocouple with TC plug, flexible, length 800 mm, fibreglass, TC Type K		-50 to +400 °C	Class 2*	5 sec	0602 0644
Thermocouple with TC plug, flexible, length 1500 mm, fibreglass, TC Type K		-50 to +400 °C	Class 2*	5 sec	0602 0645
Thermocouple with TC plug, flexible, length 1500 mm, PTFE, TC Type K		-50 to +250 °C	Class 2*	5 sec	0602 0646
Magnetic probe, adhesive power approx. 20 N, with adhesive magnets, for measurements on metal surfaces, TC Type K, connection: fixed cable		-50 to +170 °C	Class 2*	150 sec	0602 4792
Magnetic probe, adhesive power approx. 10 N, with adhesive magnets, for higher temperatures, for measurements on metal surfaces, TC type K, connection: fixed cable 1.6 m		-50 to +400 °C	Class 2*	60 sec	0602 4892
Immersion measuring tip, flexible, for measurements in air/flue gases (not suitable for measurements in smelters), TC Type K		-200 to +1300 °C	Class 1*	4 sec	0602 5693
Immersion measuring tip, flexible, TC Type K		-200 to +1000 °C	Class 1*	5 sec	0602 5792
Flexible, low-mass immersion measuring tip, ideal for measurements in small volumes, such as Petri dishes, or for surface measurements (e.g. fixed with adhesive tape)	 TC Type K, 2 m, FEP-insulated thermal wire, temperature-resistant up to 200 °C, oval cable with dimensions: 2.2 mm x 1.4 mm	-200 to +1000 °C	Class 1*	1 sec	0602 0493
Pipe wrap probe for pipe diameters 5 to 65 mm, with replaceable measuring head, short-term measuring range up to +280 °C, TC type K, connection: fixed cable 1.2 m		-60 to +130 °C	Class 2*	5 sec	0602 4592
Pipe wrap probe with Velcro tape, for measuring temperatures on pipes with diameters up to max. 120 mm, Tmax +120 °C, TC type K, connection: fixed cable 1.5 m		-50 to +120 °C	Class 1*	90 sec	0628 0020
Stationary probe with stainless steel sheath, TC type K, connection: fixed cable 1.9 m		-50 to +205 °C	Class 2*	20 sec	0628 7533
Waterproof superfast needle probe for measurements with no visible penetration hole, TC type T, fixed cable		-50 to +250 °C	±0.2 °C (-20 to +70 °C) Class 1* (remaining meas. range)	2 sec	0628 0027
Frozen food probe for screw-in use without pre-drilling; TC type T, plug-in cable		-50 to +350 °C	±0.2 °C (-20 to +70 °C) Class 1* (remaining meas. range)	8 sec	0603 3292
Robust food penetration probe with special handle, reinforced cable (PVC), TC type T, fixed cable		-50 to +350 °C	±0.2 °C (-20 to +70 °C) Class 1* (remaining meas. range)	6 sec	0603 2492
Waterproof standard immersion/penetration probe, TC Type T, fixed cable		-50 to +350 °C	±0.2 °C (-20 to +70 °C) Class 1* (remaining meas. range)	7 sec	0603 1293

*According to standard EN 60584-2, the accuracy of Class 1 refers to -40 to +1000 °C (type K), Class 2 refers to -40 to +1200 °C (type K), Class 3 refers to -200 to +40 °C (type K).

Technical data for NTC probes / Pt100 probes

	Dimensions Probe shaft/probe shaft tip	Measuring range	Accuracy	t ₉₀	Order no.
NTC probes					
Penetration probe NTC with ribbon cable, cable length 2 m, IP 54		-40 to +125 °C	±0.5% of measured value (+100 to +125 °C) ±0.2 °C (-25 to +80 °C) ±0.4 °C (remaining meas. range)	8 sec	0572 1001
External temperature probe 12 mm, plug-in, without cable		-30 to +50 °C	±0.2 °C (-30 to +50 °C)	240 sec	0572 2153
Stub probe, IP 54		-20 to +70 °C	±0.2 °C (-20 to +40 °C) ±0.4 °C (+40.1 to +70 °C)	15 sec	0628 7510
Accurate immersion/penetration probe, cable length 6 m, IP 67, connection: fixed cable; Cable length: 6 m		-35 to +80 °C	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining meas. range)	5 sec	0610 1725
Stationary probe with aluminium sleeve, IP 65, connection: fixed cable; cable length: 2.4 m		-30 to +90 °C	±0.2 °C (0 to +70 °C) ±0.5 °C (remaining meas. range)	190 sec	0628 7503
Pipe wrap probe with Velcro tape for pipe diameters up to max. 75 mm, Tmax +75 °C, NTC, connection: fixed cable; cable length: 1.5 m		-50 to +70 °C	±0.2 °C (-25 to +70 °C) ±0.4 °C (-50 to -25.1 °C)	60 sec	0613 4611
Probe for surface measurement, fixed cable, 2 m		-50 to +80 °C	±0.2 °C (0 to +70 °C)	150 sec	0628 7516
Wall surface temperature probe, e. g. for proof of structural damage in buildings, connection: fixed cable; Cable length: 3 m		-50 to +80 °C	±0.2 °C (-25 to +80 °C) ±0.5 °C (-40 to -25.1 °C)	20 sec	0628 7507
Stainless steel NTC food probe (IP65) with PUR cable, connection: fixed cable; Cable length: 1.6 m		-50 to +150 °C	±0.5% of measured value (+100 to +150 °C) ±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining meas. range)	8 sec	0613 2211
Waterproof NTC immersion/penetration probe, fixed cable 1.2 m		-50 to +150 °C	±0.5% of measured value (+100 to +150 °C) ±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining meas. range)	10 sec	0613 1212
Accurate immersion/penetration probe, cable length 1.5 m, IP 67, connection: fixed cable; Cable length: 1.5 m		-35 to +80 °C	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining meas. range)	5 sec	0628 0006
Waterproof NTC immersion/penetration probe, fixed cable 1.2 m		-50 to +150 °C	±0.5% of measured value (+100 to +150 °C) ±0.2 °C (-25 to +74.9 °C) ±0.4 °C (remaining meas. range)	10 sec	0615 1212
Robust NTC air probe, fixed cable 1.2 m		-50 to +125 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (remaining meas. range)	60 sec	0615 1712
Temperature probe with Velcro (NTC), fixed cable 1.4 m		-50 to +70 °C	±0.2 °C (-25 to +70 °C) ±0.4 °C (-50 to -25.1 °C)	60 sec	0615 4611

The standard temperature probes from the Testo range can be individually tailored to your application. For more information please contact your Testo partner.

Pt100 probes					
Penetration probe Pt100 with ribbon cable, cable length 2 m, IP54		-85 to +150 °C	Class A*	35 sec	0572 7001
Robust, waterproof Pt100 immersion/penetration probe, fixed cable		-50 to +400 °C	Class A* (-50 to +300 °C) Class B* (remaining meas. range)	12 sec	0609 1273
Robust Pt100 stainless steel food probe (IP65), connection: fixed cable		-50 to +400 °C	Class A* (-50 to +300 °C) Class B* (remaining meas. range)	10 sec	0609 2272

* According to standard EN 60751, the accuracies of Classes A and B refer to -200 to +600 °C (Pt100).



The testo Saveris performance promise.

testo Saveris 1 supports you in four ways. The environmental monitoring system records and analyzes your critical environmental data, alerts you immediately if limit values are violated and can help you optimize your processes. For this, the all-in-one solution uses three performance-related components: sensors, software and services.



Sensors: **Reliable recording of quality data.**

Thanks to more than 60 years of experience in the manufacture of measuring solutions and sensors, Testo has all the measuring instruments you need to monitor environmental parameters. These include data loggers for automatic recording of readings and alerts.



Software: **Audit-proof compliance for your data.**

The testo Saveris PRO software meets the most stringent requirements for contemporary measurement data management. The globally accessible and audit-proof platform enables comprehensive analysis and evaluation of all recorded measurement parameters – with the aid of flexible alarm systems, various logging functions and a wide variety of database hosting options.



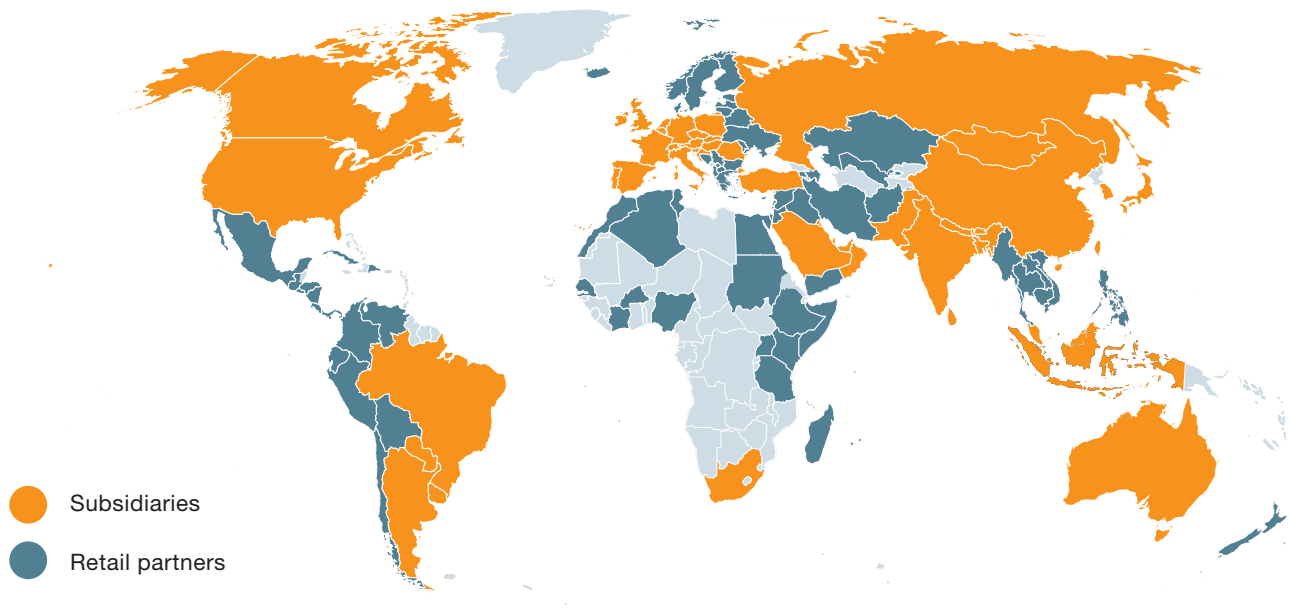
Services: **A competent partner worldwide.**

Our specially trained service team accompanies you through all process steps in a customer-oriented and systematic manner – from the planning, mapping, site acceptance test (SAT), documentation and system qualification through to service and support.

Together with you, we define a tailored service concept in all project phases. You can rely on us during operation, too. We will take care of the support, maintenance and calibration of your system.



High-tech from southern Germany.



For over 60 years, Testo has been known for creating innovative measuring solutions made in Germany. As a world market leader in portable and stationary measuring technology, we support our customers in saving time and resources, in protecting the environment and human health and in increasing the quality of goods and services. More than 3000 employees work in research, development, production and marketing for the high-tech company in 35 subsidiaries all over the world. Testo impresses more than 1 million customers all over the world with

high-precision measuring instruments and innovative solutions for the measurement data management of tomorrow. An average annual growth of over 10% since the company's foundation in 1957 and a current turnover of just short of 300 million Euros impressively demonstrate that southern Germany and high-tech systems go perfectly together. The above-average investments in the future of the company are also a part of Testo's recipe for success. Testo invests about a tenth of annual turnover in research and development.