



ComSoft 3.3 Version 21CFR11

21CFR11 / GAMP4 Compliant Measurement Data

Security in pharmaceutical and chemical production processes due to validation compatible software

Certified by



Fraunhofer Institut Experimentelles Software Engineering



Authentic

Well proven

Unequivocal

Fulfill FDA Regulation 21 CFR Part 11 Using Testo

FDA

The American Food and Drug Administration regulatory authority is responsible for monitoring production processes in the food, chemical and pharmaceutical industry. Also companies which export to the US are monitored by the FDA and are subject to their regulations.

21CFR Part 11

The Code of Federal Regulations, as a body of rules and regulations, is obligatory for the industries involved. Part 11, which came into effect in 1997, deals with electronic records and signatures. They are equated with manual documents and signatures when Title 21 CFR Part 11 is adhered to.

GMP

The EU Good Manufacturing Practice handbook is a standard volume which regulates the manufacture and import of pharmaceutical products for use in the EU.

Validation

The manufacturers of FDA regulated products, in particular pharmaceutical and chemical products as well as foodstuffs are subject to strict validation. The American regulatory authority, Food & Drug Administration, stipulates uninterrupted documentation and long-term filing of process variables. Authority regulations in relation to the use of Electronic Records and Electronic Signatures are summarised in 21 CFR Part 11: **Authenticity:** Users and administrators of Electronic Records have to be clearly identifiable and authentic.

Integrity: Electronic Records must facilitate clear reference to the documented processes. All of the changes during the process have to be documented.

Non-repudiation: The electronic signature which is inseparable from the electronic record has to clearly identify the author responsible.

Validation compatible software & measuring instruments + services



The demands on certifications, qualifications and validations are growing constantly. With Testo as a partner, the customer can select from validation compatible products and software.

As support, Testo also offers various service packages ranging from drawing up a master plan to SOPs and risk analysis to complete solutions. In this way, the customer can select the ideal solution. A comprehensive validation on the complete system increases process efficiency in the company and reduces incalculable costs and risks in the long-term.

ComSoft 3.3 21CFR Part 11

Together with Testo data loggers, Testo has adapted ComSoft 3.3 to the requirements of 21 CFR Part 11 thus providing a complete tool.

Validation compatible loggers

Testo's data loggers have proven themselves in more than 10 years of applications. The most important criteria in order to be

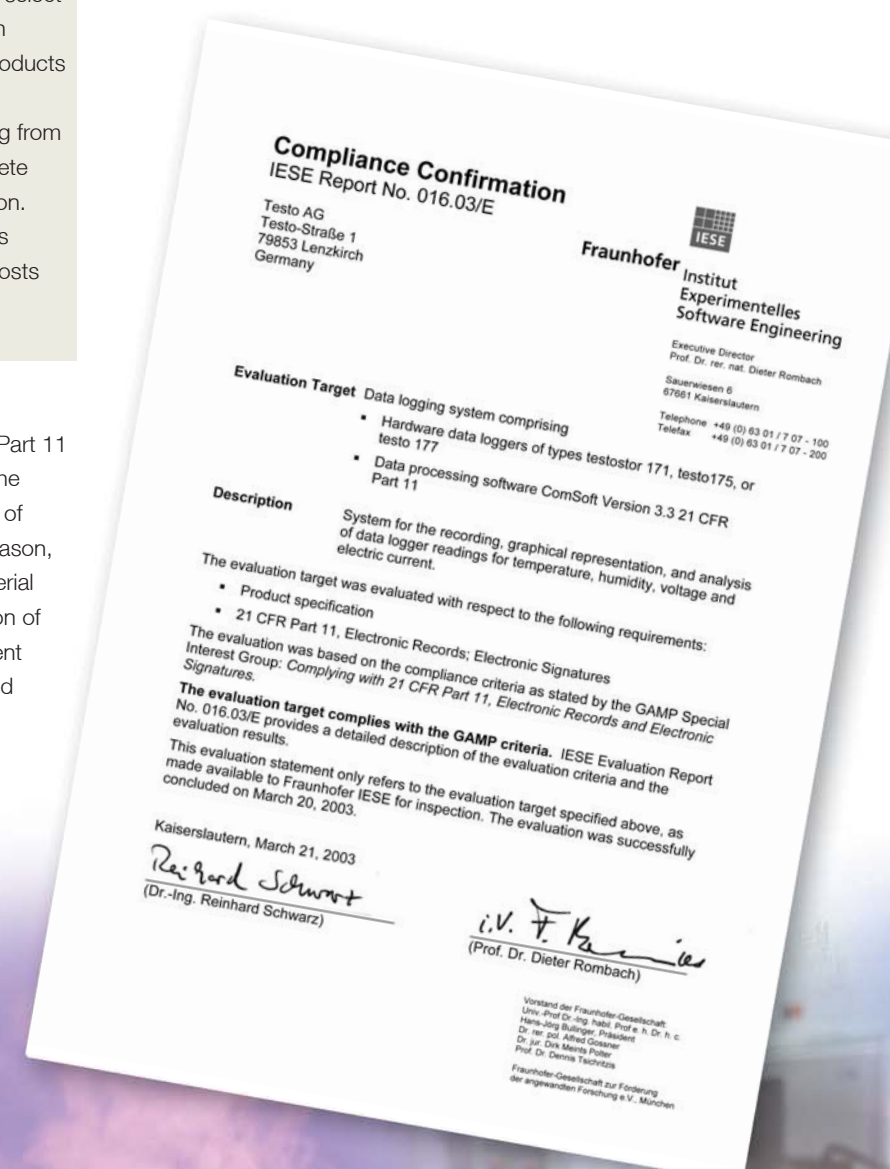
able to be validated in accordance with 21 CFR Part 11 are clear identification of the instrument and the option of access control. For this reason, our data loggers have a serial number and also the option of protecting the measurement program from unauthorised access via an instrument password.

Data Loggers • Software • Services

Approved measurement systems with certificate

The Institute for Experimental Software Engineering in the Fraunhofer Gesellschaft confirms that the measurement system consisting of testostor 171, testo 175, testo 177 and ComSoft

software fulfills 21 CFR Part 11 requirements. The test was carried out in accordance with GAMP Special Interest Group benchmarking guidelines: Complying with 21 CFR Part 11, Electronic Records and Electronic Signatures.



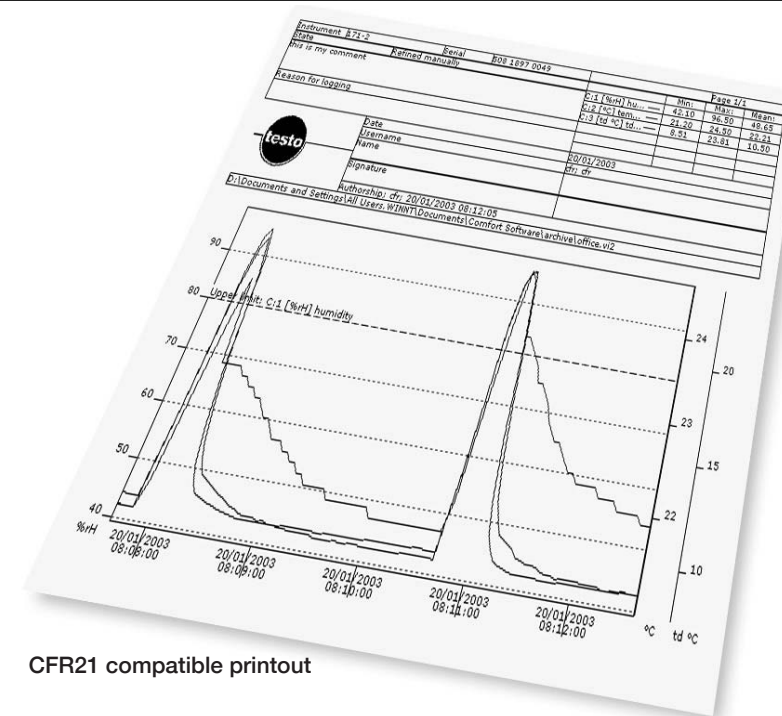
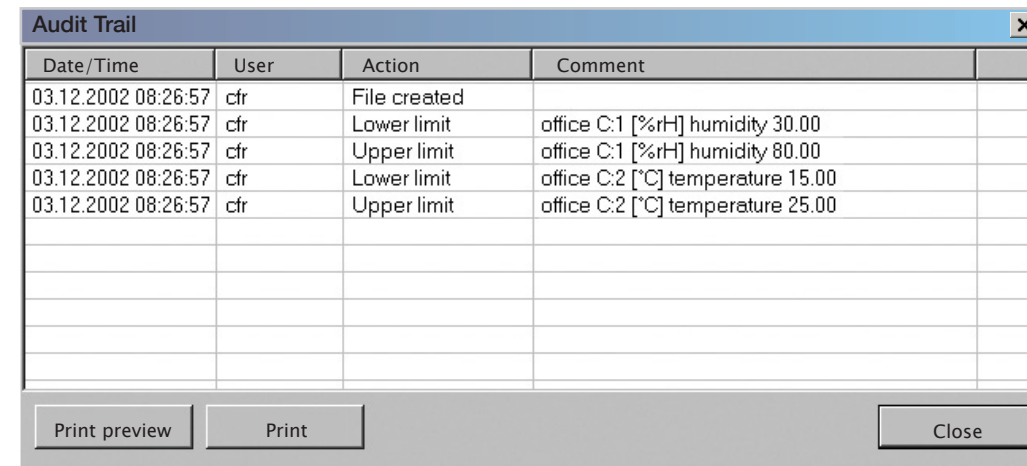
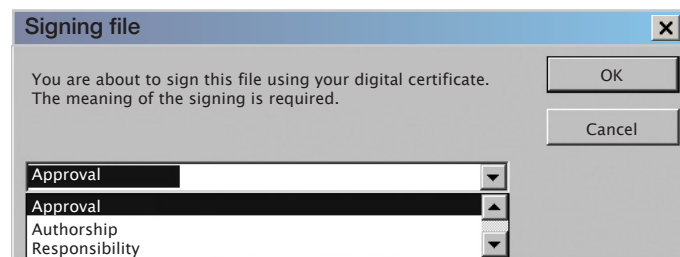
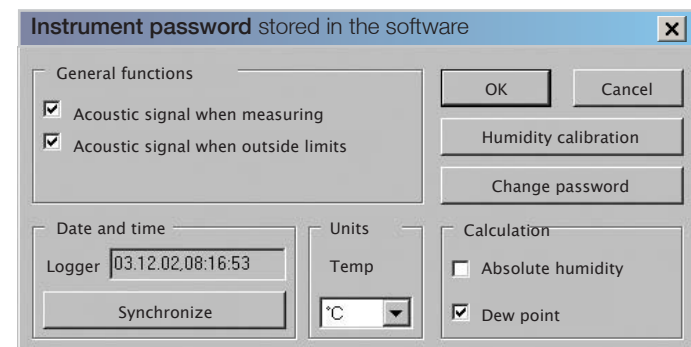
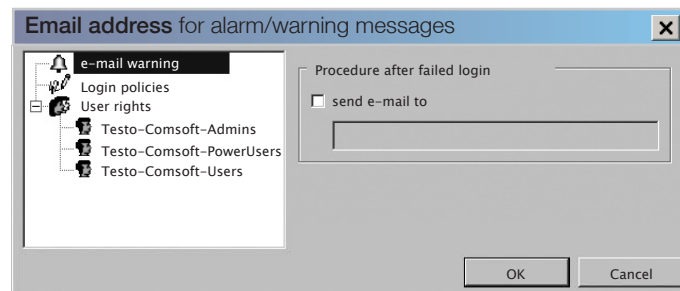
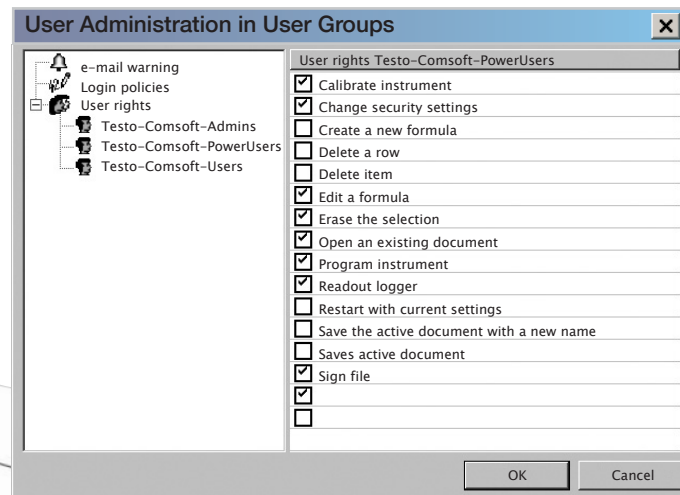
Validation compatible Software ComSoft 3.3 Version 21CFR11

Validation compatible software

ComSoft 3.3 Version 21CFR11

All of the FDA requirements can be fulfilled if used as part of a cohesive system:

- User management in User Groups by Administrator
- Save raw data in tamper-proof file format
- Recognition of transfer errors using proof totals
- Inactivity lockout to prevent unauthorised access
- Monitors logins and logouts, successful / failed use of digital signatures and modification of raw data with the aid of Audit Trail
- Complete integration in the Windows 2000 security system (certificates, rights management, user and password management, user authentication)
- Option of data export in generally readable PDF file format e.g. to send to the FDA validation point responsible or to display during a company audit.



CFR21 compatible printout

As a market leader in the high quality measurement systems sector, Testo places major emphasis on the complete security of their measured data. In the ComSoft complying with 21CFR11, we have consciously built on the existing Windows® NT security concept by the software developer Microsoft, for security based access monitoring, rights and the documentation required. The core operating system by Windows NT was successfully tested by NCSC in the C2 security level of the Orange Book. In this way, the security of user authentication and Audit Trail as well as the file protection of Electronic Records (using NTFS standards) is guaranteed in ComSoft 3.3 Version 21 CFR 11.

Ordering data

ComSoft 3.3 Version 21CFR11

Part no. 0554 0821

Minimum requirements

PC with operating system:

- Microsoft Windows® NT 5 or better (if compatible)
- Windows® 2000 or better (if compatible)
- XP Prof or better (if compatible)

Software:

- Internet Explorer 5.0 or better

Note: The ComSoft CFR software does not run on earlier Windows® versions (Windows® 9x). These operating systems do not provide the necessary functions in the area of security settings, user ID and password and are suitable for use in CFR relevant environments only under limited conditions.


Hardware requirements:


- CD-ROM drive
- Pentium 133 MHz
- 64 MB RAM
- 15 MB free on hard disk
- Free serial interface (COM) or equivalent adapter

In order to export files in *.pdf format (Adobe Portable Document Format) you require, as additional software, Adobe Acrobat 5.0 or better (if compatible).

testostor 171: Pro data logger in robust housing

- > Robust metal housing
- > Memory for up to 55,000 readings
- > Measuring rate 2 s to 24 h, user defined

Versions without internal humidity sensor	
	Housing material Aluminium Measuring rate 2 s to 24 h, user defined Battery type Lithium battery Battery life Up to 5 years Storage temperature -40 to +85 °C Dimensions 131 x 68 x 26 mm Weight 305 g Warranty 2 years

Versions with internal humidity sensor	
	Housing material Aluminium Measuring rate 2 s to 24 h, user defined Lithium battery Up to 5 years -40 to +85 °C 131 x 68 x 84 mm 320 g 2 years



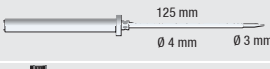



Type name	testostor 171-0	Ex 171-0	testostor 171-4
Description	Internal °C	Internal °C with Ex approval	4 x external °C NTC
Sensor	10 K NTC	10 K NTC	10 K NTC
Measurement range	-35 to +70 °C	-35 to +70 °C	-50 to +120 °C
System accuracy	±0.5 °C (-35 to +39.9 °C) ±0.6 °C (+40 to +70 °C)	±0.5 °C (-35 to +39.9 °C) ±0.6 °C (+40 to +70 °C)	±0.2 °C (-34.9 to +39.9 °C) ±0.4 °C (+40 to +120 °C) ±0.6 °C (-50 to -35 °C)
Resolution	0.1 °C	0.1 °C	0.1 °C
Application temperature	-35 to +70 °C	-35 to +70 °C	-35 to +70 °C
Memory	55,000 readings	55,000 readings	55,000 readings
Protection class	IP 68	IP 68	
Part no.	0577 1719	0577 1730	0577 1714





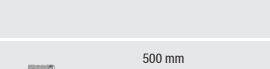
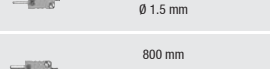
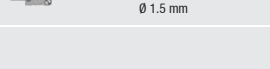
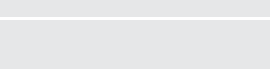

Type name	testostor 171-3	Ex 171-3
Description	Internal %RH / °C 20,000 readings	Internal %RH / °C with Ex approval
Sensor	5 K NTC	5 K NTC
Measurement range	-10 to +50 °C / 0 to 100%RH	-10 to +50 °C 0 to 100%RH
System accuracy	±0.4 °C (-10 to +50 °C) ±3% (2 to 98%RH)	±0.4 °C (-10 to +50 °C) ±2% (2 to 98%RH)
Resolution	0.1 °C / 0.1%RH	0.1 °C / 0.1%RH
Application temperature	-20 to +70 °C	-20 to +70 °C
Memory	20,000 readings	20,000 readings
Protection class	IP 65	IP 65
Part no.	0577 1713	0577 1733

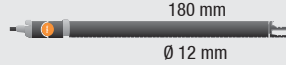
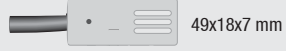
Type name	testostor 171-8	testostor 171-1	testostor 171-6
Description	High temperature data logger 4 x external °C	Internal °C + external °C or %RH/°C	2 x external %RH / °C or °C, td
Sensor	Type K (NiCr-Ni) Type T (Cu-CuNi)	10 K NTC (temperature probe) 5 K NTC (multi-function °C/%RH)	10 K NTC (temperature probe) 5 K NTC (multi-probe °C/%RH)
Measuring range	-200 to +1000 °C (Type K) -50 to +350 °C (Type T)	-50 to +120 °C (external) -35 to +70 °C (internal) 0 to 100%RH	-50 to +120 °C 0 to 100%RH -30 to +50 °C td
System accuracy	±0.4 °C (0 to +40 °C) ±0.5 °C (+40.1 to +70 °C)	±0.2 °C (-34.9 to +39.9 °C) ±0.4 °C (+40 to +70 °C) ext. ±0.4 °C (+40 to +120 °C) int. ±0.6 °C (-50 to -35 °C) ext. ±2% (2 to 98%RH)	±0.4 °C (-10 to +50 °C) ±0.6 °C (remaining range) ±2% (2 to 98%RH)
Resolution	0.1 °C (-200 to +249.9 °C) 1 °C (remaining range)	0.1 °C / 0.1%RH	0.1 °C / 0.1% RH
Application temperature	0 to +70 °C	-35 to +70 °C	-35 to +70 °C
Memory	55,000 readings	55,000 readings	55,000 readings
Protection class			
Alarm output (relay contact)			
Part no.	0577 1718	0577 1715	0577 1716

Type name	testostor 171-2	testostor 1722
Description	Internal %RH / °C, td 55,000 readings	Internal %RH / °C, td with alarm output
Sensor	5 K NTC	5 K NTC
Measurement range	-20 to +70 °C 0 to 100%RH -20 to +70 °C td	-20 to +70 °C 0 to 100%RH -20 to +70 °C td
System accuracy	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range) ±2% (2 to 98%RH)	±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range) ±2% (2 to 98%RH)
Resolution	0.1 °C / 0.1%RH	0.1 °C / 0.1%RH
Application temperature	-20 to +70 °C	-20 to +70 °C
Memory	55,000 readings	55,000 readings
Protection class	IP 65	IP 65
Alarm output (relay contact)		1A/42V max. load
Part no.	0577 1712	0577 1722

Probes for testostor 171 data loggers

NTC probes for testostor 171-4, 171-1, 171-6 data loggers							
Description	Illustration	Meas. range	Accuracy	Reaction time	Connection Cable/Length	Part no.	
Robust immersion/penetration probe, fast action, 6 m cable, probe tip IP68		-50 to +80 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (-50 to -25.1 °C)	5 s t99 (in water)	Fixed cable 6 m	0610 1720	
Air probe, highly accurate for direct attachment		-35 to +70 °C	±0.2 °C (-35 to +70 °C)	180 s t90	---	0610 1722	
Robust, accurate, water-tight food probe (IP65), made of stainless steel		-50 to +120 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (-50 to -25.1 °C) ±0.5 °C (+80.1 to +120 °C)	10 s t90 (in water)	Fixed cable 2 m	0610 2217	
Frozen food probe, corkscrew design		-50 to +120 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (-50 to -25.1 °C) ±0.5 °C (+80.1 to +120 °C)	8 s t90 (in water)	Plug-in cable 2 m	0610 3217	
Probe pipe with Velcro, measures flow/return temperature, pipe diameter max. 100 mm		-50 to +80 °C	±0.2 °C (-25 to +80 °C) ±0.4 °C (-50 to -25.1 °C)		Fixed cable 3 m	0610 4617	
Wall surface temperature, e.g. provides proof of damage to building material, cable 1.5 m long, probe tip 40x15x0.2 mm		-50 to +120 °C	±0.5 °C (-50 to +120 °C)	20 s t90	Fixed cable 1.5 m	0628 0007	

Thermocouple probes for testostor 171-8 data loggers							
Description	Illustration	Meas. range	Accuracy	t99	Connection	Part no.	
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Measuring range short-term to +280 °C		-60 to +130 °C	Class 2	5 s	Fixed cable	0602 4592	
Spare meas. head for pipe wrap probe		-60 to +130 °C	Class 2	5 s		0602 0092	
Clamp probe for measurements on pipes, pipe diameter 15 to 25 mm (max. 1"), meas. range short-term up to +130 °C		-50 to +100 °C	Class 2	5 s	Fixed cable	0602 4692	
Magnetic probe, adhesive force approx. 20 N, with magnets, for measurements on metal surfaces		-50 to +170 °C	Class 2		Fixed cable	0602 4792	
Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temperatures, for measurements on metal surfaces, Ø 21 mm		-50 to +400 °C	Class 2		Fixed cable	0602 4892	
Immersion tip, flexible		-200 to +1000 °C	Class 1	5 s		0602 5792	
Thermocouple, flexible, 800 mm long, Ø 1.5 mm, fibre glass		-50 to +400 °C	Class 2	5 s		0602 0644	
Thermocouple, flexible, 1500 mm long, Ø 1.5 mm, fibre glass		-50 to +400 °C	Class 2	5 s		0602 0645	
Thermocouple, flexible, 1500 mm long, Ø 1.5 mm, Teflon		-50 to +250 °C	Class 2	5 s		0602 0646	

Humidity probes for testostor 171-1, testostor 171-6							
Description	Illustration	Meas. range	Accuracy	t90	Cable length	Part no.	
Humidity/temperature probe with standard plastic protection cap		0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (-20 to -10.1 °C) ±0.5 °C (+50.1 to +70 °C)	12 s	3 m	0636 9717	
Mini humidity/temperature module for measurements at inaccessible points, module cable 1.5 m long, probe tip 49x18x7 mm		0 to +100 %RH -20 to +120 °C	±2 %RH (+2 to +98 %RH) ±0.5 °C (-20 to +120 °C)	20 s	1.5 m	0628 0008	

testo 177: Pro data logger for long-term and multi-channel measurements

- > Memory for up to 48,000 readings
- > Measuring rate 2 s to 24 h, user defined
- > Battery life of more than 5 years*

Type name	testo 177-T1	testo 177-T2	testo 177-T3	testo 177-T4	testo 177-H1
Description	1 channel temperature logger with internal sensor for long-term monitoring	1 channel temperature logger with internal sensor for long-term monitoring	3 channel temperature logger with event logging, internal °C + 2 x external °C	4 channel temperature logger for external thermocouples	4 channel humidity/temperature logger with internal sensors and ext. probe socket
Fig.					
Parameter	Temperature (°C/°F)	Temperature (°C/°F)	Temperature (°C/°F)	Temperature (°C/°F)	Humidity/Temp./Dew point
Sensor	NTC (internal)	NTC (internal)	NTC (internal + 2 external) Event logging e.g. door contact	T/C–Type K or T (4 x external)	Humidity sensor NTC (internal) NTC (external)
No. of measurement channels	1 channel (internal)	1 channel (internal)	4 channels (1 internal, 2 ext.) + 1 door contact (external)	4 channels (external)	4 channels 3 x internal: %RH, °C, °C td 1 x external: °C
Measurement range	–40 °C to +70 °C	–40 °C to +70 °C	–40 °C to +70 °C (internal) –40 °C to +120 °C (external)	Type K: –195 °C to +1000 °C Type T: –200 °C to +400 °C	0 to 100 %RH –20 to +70 °C (internal) –40 to +70 °C td –40 to +120 °C (external)
Resolution	0.1 °C	0.1 °C	0.1 °C	0.1 °C (–200 to +1000°C)	0.1%RH/0.1 °C/0.1 °C td
Accuracy ±1 digit	Inside system ±0.4 °C (–25 to +70 °C) ±0.8 °C (–40 to –25.1 °C)	Inside system ±0.4 °C (–25 to +70 °C) ±0.8 °C (–40 to –25.1 °C)	Inside system ±0.4 °C (–25 to +70 °C) ±0.8 °C (–40 to –25.1 °C) Outside instrument ±0.2 °C (–25 to +70 °C) ±0.4 °C (remaining range)	Instrument ±0.3 °C (–100 to +70 °C) ±0.5% of reading (+70.1 to +1000 °C) ±1% of reading (–200 to –100.1 °C)	System ± 2%RH ± 0.5 °C Instrument ± 0.2 °C (–25 to +70 °C) ± 0.4 °C (remaining range)
Application temperature	–40 °C to +70 °C	–40 °C to +70 °C	–40 °C to +70 °C	0 °C to +70 °C	–20 °C to +70 °C
Storage temperature	–40 °C to +85 °C	–40 °C to +85 °C	–40 °C to +85 °C	–40 °C to +85 °C	–40 °C to +85 °C
Memory	48,000 readings	48,000 readings	48,000 readings	48,000 readings	48,000 readings
Measuring cycle	2 s to 24 h	2 s to 24 h	2 s to 24 h	2 s to 24 h	2 s to 24 h
Battery type	Lithium (1AA)	Lithium (1AA)	Lithium (1AA)	Lithium (1AA)	Lithium (1AA)
Battery life	>5 years*	>5 years*	>5 years*	>5 years*	>5 years*
Dimensions(housing w/o probes)	103 x 64 x 33 mm	103 x 64 x 33 mm	103 x 64 x 33 mm	103 x 64 x 33 mm	103 x 64 x 33 mm
Weight	111 g	122 g	127 g	129 g	130 g
Protection class	IP 68	IP 68	IP 67	IP 43	IP 54
Warranty	2 years	2 years	2 years	2 years	2 years
Part no.	0563 1771	0563 1772	0563 1773	0563 1774	0563 1775

*At a measuring rate of 15 min (–10 to +50 °C)

testo 175: Compact data logger

- > Memory for up to 16,000 readings
- > Measuring rate 10 s to 24 h, user defined
- > Battery life of more than 2.5 years*

Type name	testo 175-T1	testo 175-T2	testo 175-T3	testo 175-S1	testo 175-H1/H2
Description	1 channel temperature logger with internal sensor	2 channel temperature logger with internal sensor and external probe socket	2 channel temperature logger for external thermocouples	1 channel current/voltage logger	2 channel humidity/temperature logger with internal sensor
Fig.					
Parameter	Temperature (°C/°F)	Temperature (°C/°F)	Temperature (°C/°F)	Current/voltage	Humidity/Temperature
Sensor	NTC (internal)	NTC (internal + external)	T/C–Type K or T (external)	Probe: Built-in screwed contact socket	Humidity sensor NTC (internal)
No. of measurement channels	1 channel (internal)	2 channels (1 int, 1 ext.)	2 channels (external)	1 channel (external)	2 channels internal %RH; °C
Measurement range	–35 °C to +70 °C	–35 °C to +70 °C (internal) –40°C to +120 °C (external)	–50 °C to +1000 °C (Type K) –50 °C to +400 °C (Type T)	0 to 1 V / 0 to 10 V 0 to 20 mA / 4 to 20 mA	0 to 100 %RH 175–H1: –10 °C to +50 °C 175–H2: –20 °C to +70 °C
Resolution	0.1 °C (–20 to +70 °C) 0.3 °C (remaining range)	0.1 °C (–20 to +70 °C) 0.3 °C (remaining range)	0.1 °C	1 mV (0 to 1 V) 10 mV (1 to 10 V) 0.01 mA (0 to 20 mA)	0.1%RH/0.1 °C
Accuracy ±1 digit	Inside system ±0.5 °C (–20 to +70 °C) ±1 °C (–35 to –20.1 °C)	Inside system ±0.5 °C (–20 to +70 °C) ±1 °C (–35 to –20.1 °C) Outside instrument ±0.3 °C (–25 to +70 °C) ±0.5 °C (remaining range)	Instrument w/o probes ±0.5 °C (–50 to +70 °C) ±0.7% of reading (70.1 to +1000 °C)	System ± 2 mV (0 to 1 V) ± 20 mV (1 to 10 V) ± 0.05 mA (0 to 20 mA)	System ± 3 %RH ± 0.5 °C
Memory	7,800 readings	16,000 readings	16,000 readings	16,000 readings	175–H1: 3,700 readings 175–H2: 16,000 readings
Application temperature	–35 °C to +70 °C	–35 °C to +70 °C	0 °C to +70 °C	–10 °C to +50 °C	175–H1: –10 °C to +50 °C 175–H2: –20 °C to +70 °C
Storage temperature	–40 °C to +85 °C	–40 °C to +85 °C	–40 °C to +85 °C	–40 °C to +70 °C	175–H1: –40 °C to +70 °C 175–H2: –40 °C to +85 °C
Battery type	Lithium (1AA)	Lithium (1AA)	Lithium (1/2 AA)	Lithium (1/2 AA)	Lithium (1/2 AA)
Battery life	>2.5 years*	>2.5 years*	>2.5 years*	>2.5 years*	>2.5 years*
Dimensions	82 x 52 x 30 mm	82 x 52 x 30 mm	82 x 52 x 30 mm	82 x 52 x 30 mm	82 x 52 x 30 mm
Weight	90 g	84 g	90 g	80 g	175–H1: 80 g / 175–H2: 85 g
Protection class	IP 68	IP 68	IP 54		
Warranty	2 years	2 years	2 years	2 years	2 years
Part no.	0563 1754	0563 1755	0563 1756	0563 1759	175–H1 (w/o display): 0563 1757 175–H2 (with display): 0563 1758

*At measuring rate of 15 min (–10 to +50 °C)

Probes for testo 175, testo 177 data loggers

NTC probes for testo 175-T2, 177-T3, 177-H1 data loggers						
Description	Illustration	Meas. range	Accuracy	t99	Conn. Cable/Length	Best.-Nr.
Mounting probe with aluminium sleeve, IP65		-30 to +90 °C	±0.2 °C (0 to +70 °C) ±0.5 °C (-30 to -0.1 °C) ±0.5 °C (+70.1 to +90 °C)	60 s	Fixed cable	0628 7503*
Accurate imm./pen. probe, IP 67		-35 to +80 °C	±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-35 to -25.1 °C) ±0.4 °C (+75 to +80 °C)	5 s	Fixed cable	0610 1725*
Screw-in probes for measurements at hard-to-access points, M6 thread, IP 54		-50 to +80 °C	±0.5% of m.v. (+100 to +150 °C)	70 s	Fixed cable	0628 7514*
Probe for surface measurement		-50 to +80 °C	±0.2 °C (0 to +70 °C)	150 s	Fixed cable	0628 7516*
Wall surface temperature probe, e.g. to prove damage in building material		-50 to +80 °C	±0.2 °C (0 to +70 °C)	20 s	Fixed cable	0628 7507
Food probe (IP65), stainless steel, PUR cable can be used at up to +80 °C, IP54 plug-in connection		-50 to +150 °C ²⁾	±0.5% of m.v. (+100 to +150 °C) ±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-50 to -25.1 °C) ±0.4 °C (+75 to +99.9 °C)	8 s	Fixed cable	0613 2211*
Robust food penetration probe with special handle, IP 65, reinforced cable (PUR) and reinforced protection against buckling		-50 to +150 °C ²⁾	±0.5% of m.v. (+100 to +150 °C) ±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-50 to -25.1 °C) ±0.4 °C (+75 to +99.9 °C)	7 s	Fixed cable	0613 2411*
Robust, affordable air probe to check storage temperatures		-50 to +150 °C ²⁾	±0.5% of m.v. (+100 to +150 °C) ±0.2 °C (-25 to +74.9 °C) ±0.4 °C (-50 to -25.1 °C) ±0.4 °C (+75 to +99.9 °C)	60 s	Fixed cable	0613 1711*

* Probe tested to EN 12830 for suitability in the transport and storage sectors

²⁾ Long-term measurement range +125 °C, short-term +150 °C or +140 °C (2 minutes)

Thermocouple probes for testo 175-T3, 177-T4 data loggers						
Description	Illustration	Meas. range	Accuracy	t99	Conn. Cable/Length	Part no.
Mounting probe with stainless steel sleeve		-50 to +205 °C	±1.5	20 s	Fixed cable	0628 7533
Pipe wrap probe with Velcro, for temperature measurement on pipes with diameter up to max. 120 mm, Tmax +120 °C		0 to +120 °C	Class 1	90 s	Fixed cable	0628 0020
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Measuring range short-term to +280 °C		-60 to +130 °C	Class 2	5 s	Fixed cable	0602 4592
Surface temperature probe fitting with M 14x1.5 and 2 nuts, fast action surface probe with crossed strip		-50 to +180 °C	Class 2	3 s	Fixed cable	0628 7521
Thermocouple, flexible, 1500 mm long, fibre glass		-50 to +400 °C	Class 2	5 s	Fixed cable	0602 0645
Thermocouple, flexible, 1500 mm long, Teflon		-50 to +250 °C	Class 2	5 s	Fixed cable	0602 0646
Immersion tip, flexible		-200 to +1000 °C	Class 1	5 s	Fixed cable	0602 5792
Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temperatures, for measurements on metal surfaces		-50 to +400 °C	Class 2	Fixed cable	Fixed cable	0602 4892
Waterproof immersion/penetration probe		-60 to +400 °C	Class 2	7 s	Fixed cable	0602 1292
Accurate and quick-action immersion probe, waterproof		-60 to +1000 °C	Class 1	2 s	Fixed cable	0602 0592
Robust, affordable air probe		-60 to +400 °C	Class 2	25 s	Fixed cable	0602 1792

☑ The specified tightness class of the data loggers is achieved with these probes

Accessories

Accessories for testostor 171	
Description	Part no.
PC interface for direct data exchange with PC, can be attached with serial interface cable	0554 1781
Display, can be attached to all data loggers	0554 0176
Signal device for testostor 1722, with connection cable	0554 1722
Holder for data logger, with lock	0554 1782
Transport case, for 5 data loggers and accessories	0516 0117
Spare battery set, with seal	0515 0018
Heat protection unit incl. heat protection insert, for ambient temperatures of up to +1000 °C	0553 1701

Accessories for testo 175 / testo 177	
Description	Part no.
Interface for testo 175 / 177 incl. desktop holders for testo 175/177, PC connection cable (for ComSoft 3 – Professional, please also order)	0554 1757
Lock for wall holder for testo 175 / 177 data loggers	0554 1755
Battery 3.6 V / 0.8 Ah 1/2 AA; for testo 175-T3/175-H1/175-H2/175-S1	0515 0175
Battery 3.6 V / 1.9 Ah 1AA; for testo 175-T1/175-T2 and all testo 177 loggers	0515 0177
Transport case for up to 5 x testo 175 data loggers, testo 575 printer, testo 580 data collector and accessories	0516 1750
Transport case for up to 5 x testo 177 data loggers, testo 575 printer, testo 580 data collector and accessories	0516 1770

Accessories for testo 177-H1	
Description	Part no.
Metal protection cage for humidity probes, V4A stainless steel, for velocities of less than 10/m/s	0554 0755
Cap with wire mesh filter	0554 0757
Teflon sintered filter, for corrosive substances, high humidity range (long-term measurements), high velocities	0554 0756
Stainless steel sintered caps, can be screwed onto humidity probes for measurements at high velocities or in contaminated air	0554 0647
Control and humidity adjustment set 11.3 %RH / 75.3 %RH, incl. adapter for humidity probes	0554 0660

Calibration certificates for testostor 171, testo 175 / 177 data loggers

Description	Part no.
ISO calibration certificate for temperature; temperature data loggers; calibration points: -18 °C; 0 °C; +60 °C; per channel/instrument	0520 0151
ISO calibration certificate for temperature; temperature data loggers; 2 point calibration per channel/instrument, calibration points: -18 °C; +60 °C	0520 0443
DKD calibration certificate for temperature; temperature data loggers; calibration points: -20 °C; 0 °C; +60 °C; per channel/instrument	0520 0261
ISO calibration certificate for humidity; humidity data loggers; calibration points: 11.3 %RH and 75.3 %RH at +25 °C; per channel/instrument	0520 0076
DKD calibration certificate for humidity; humidity data loggers; calibration points: 11.3 %RH and 75.3 %RH at +25 °C; per channel/instrument	0520 0246
ISO calibration certificate for temperature; temperature data loggers; calibration point: -80 °C	0520 0221
ISO calibration certificate for temperature; temperature data loggers; calibration points: 0 °C; +150 °C; +300 °C	0520 0021
ISO calibration certificate for temperature; temperature data loggers; calibration points: -18 °C; 0 °C; +60 °C; per channel/instrument	0520 0171
ISO calibration certificate for electricity; calibration in measuring ranges 0-20 mA; 4-20 mA; 0-1 V; 0-10 V	0520 1000

ISO/DKD calibration certificates at user defined points within the measurement range are possible for all loggers.

Recommended Sets

Recommended set: testostor 171	
Description	Part no.
The complete set for temperature measurement:	
Professional testostor 171-0 data logger	0577 1719
ComSoft 3.3 Version 21CFR11	0554 0821
PC interface for direct data exchange with the PC, can be attached with serial interface cable	0554 1781
DKD calibration certificate for temperature, Calibration points: -20 °C; 0 °C; +60 °C; per channel/instrument	0520 0261

Recommended set: testo 177	
Description	Part no.
The complete set for humidity measurement:	
testo 177-H1 data logger	0563 1775
ComSoft 3.3 version 21CFR11	0554 0821
Interface for testo 175 / 177 incl. desktop holders for testo 175/177, PC connection cable (for ComSoft 3 – Professional, please also order)	0554 1757
DKD calibration certificate for humidity, Calibration points: 11.3 %RH and 75.3 %RH at +25 °C; per channel/instrument	0520 0246



Testo – Never Far Away

Subject to change without notice.

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