



testo 946

# Alarm thermometer with integrated HACCP limit values

Easy and efficient data documentation



°C

Max. +10°C

Max. +4°C

Min. +65°C

Min. +70°C

Max. +7°C

Tested and approved by  
food inspectors

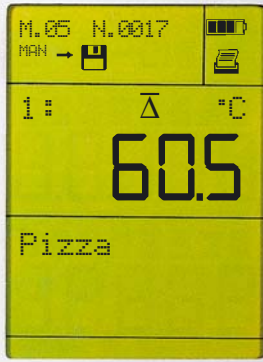


Max. +7°C

Max. +2°C



# Alarm thermometer with integrated HACCP limit values



## Convenient location management/limit value monitoring

Using Testo's Comfort software, product names such as pizza, milk etc. can be saved in the instrument. The HACCP limit values for the various products can be saved in the product data base. The limit values are automatically saved once the product is selected in the instrument.

## Probes for every application

- Very quick-action temperature measurement with type T probes in socket 1, e.g. readings within 2 seconds when using infrared or needle probe.
- Accurate checks in critical cases using highly accurate NTC or Pt100 probes, e.g. stainless steel food probe.

## System adjustment

Quick food probes can be checked and any deviations can be adjusted if required, using a system calibrated by Testo consisting of a highly accurate Pt100 probe and a **testo 946** instrument.



## Protection for your instrument

The **TopSafe** case protects the measuring instrument from water, dust and impact. Ideal for use in the food sector. TopSafe can be cleaned in a dishwasher.

## Analyse and print readings according to product names using Testo ComSoft 3

Milk	Date	Time	°C
1	26.10.1998	09:26:07	9.50
2	27.10.1998	09:26:10	9.30
3	28.10.1998	09:26:11	9.60
4	29.10.1998	09:26:12	10.10
5	30.10.1998	09:26:30	11.10
Fish	Date	Time	°C
1	26.10.1998	10:27:13	1.10
2	27.10.1998	10:27:15	1.50
3	28.10.1998	10:27:16	1.80
4	29.10.1998	10:27:18	2.20
5	30.10.1998	10:27:25	1.60
Pizza	Date	Time	°C
1	26.10.1998	11:26:39	-18.50
2	27.10.1998	11:26:40	-19.00
3	28.10.1998	11:26:41	-17.50
4	29.10.1998	11:26:43	-18.00
5	30.10.1998	11:26:50	-16.00

## Quick documentation via printout of measured data on site



Integrated RS232 interface (electrically isolated)

Non-contact infrared transmission of measurement logs

Socket 1: Type K/T/S probe e.g. for incoming goods

Socket 2: Pt100/NTC probe e.g. for refrigeration

Mains connection and battery recharging in instrument

4 line display

Prints at the touch of a button

Saves up to 130 measurement logs or 1 measurement log with 3000 readings

Selects up to 99 product names

Displays parameter and product name

Product-related limit value monitoring as part of HACCP, with buzzer and flashing alarm

User-friendly operation with cursor

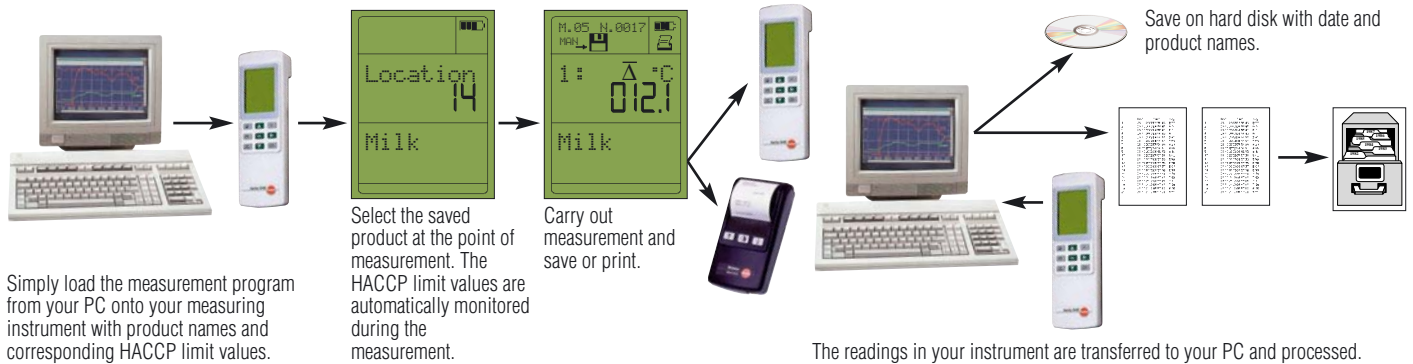
HOLD/MAX values/ MIN values/ Mean calculation - multi-point - timed

Robust, water-tight precision probe



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## Easy and reliable completion and documentation of important monitoring measurements









## You can order by fax, post or telephone

Simply copy this page, fill out quantities required and return to us by fax or post. Don't forget your name and address.

Qty.	Ordering data for measuring instrument, accessories	Part no.
	<b>testo 946 meas. instr. with TopSafe</b> , 2 channel thermometer (Type T/K/S, NTC, Pt100 thermocouple), with battery, instruction manual <b>and factory protocol</b>	0563.9460
	<b>Software</b>	
	<b>ComSoft 3</b> for data management. Incl. database, analysis and graphics function, data analysis, trend curve	0554.0830
	<b>RS232 cable</b> , connects measuring instrument ↔ PC for data transmission	0409.0178
	<b>Printer</b>	
	<b>Testo log printer</b> , prints data, product names with date and time	0554.0545
	<b>Printer paper</b> for Testo log printer (6 rolls)	0554.0569
	<b>Self-adhesive printer paper</b> for Testo log printer (6 rolls)	On request
	<b>Battery recharger</b> with 4 NC rechargeable batteries for the Testo log printer, batteries are recharged externally	0554.0110
	<b>Special sealing strip</b> for needle probe 0628.0030 (4 m). For measurements in vacuum products without loss of airtightness.	0554.1030
	<b>Additional accessories</b>	
	<b>Plug-in mains unit</b> for mains operation and to recharge battery in instrument	0554.0088
	<b>9 V rechargeable battery</b> , instead of battery	0515.0025
	<b>TopSafe/Case</b>	
	<b>TopSafe</b> protects instrument from dirt, water (IP 65) and impact, dishwasher-proof. With bench stand, belt clip and probe clip for attaching probe to TopSafe.	0516.0442
	<b>Transport case</b> , for safe storage of measuring instrument, TopSafe, probes and Testo log printer	0516.0445

Qty.	Incoming goods probe	Probe tip	Connection cable	Sensor	Measuring range	t <sub>99</sub> s	Part no.
	Flexible incoming goods probe, ideal for quick temperature measurement on incoming goods 			<b>Type T</b>	-50 to +350 °C Class 1	5 (water) 40 (air)	0628.0023

Qty.	Surface probe	Probe tip	Connection cable	Sensor	Measuring range	t <sub>99</sub> s	Part no.
	Robust, water-proof, accurate with widened measuring tip, e.g. for cooking plates T <sub>max</sub> handle +70 °C 		1.2 m PVC T <sub>max</sub> +70 °C	<b>Type T Select</b>	-50 to +350 °C	30	0603.1992
				<b>NTC</b>	-50 to +125 °C	35	0613.1911

Qty.	Air probes	Probe tip	Connection cable	Sensor	Measuring range	t <sub>99</sub> s	Part no.
	Robust, low cost precision probe for checking e.g. storage temperature T <sub>max</sub> handle +70 °C. 		1.2 m PVC T <sub>max</sub> +70 °C	<b>Type T Select</b>	-50 to +350 °C	25	0603.1792
				<b>NTC</b>	-50 to +125 °C	40	0613.1711
	Flexible oven probe. Accuracy: Class 1 		Insulation: Teflon T <sub>max</sub> +250 °C	<b>Type T</b>	-50 to +250 °C Class 1	5 (water)	0603.0646








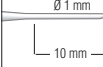




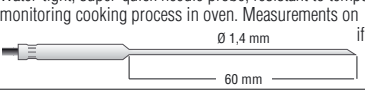

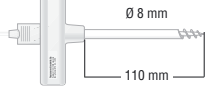
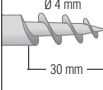

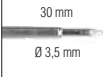
In combination with this probe and TopSafe, the testo 946 measuring instrument is water-proof (IP65).

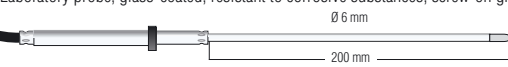
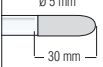




# Alarm thermometer with integrated HACCP limit values

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Qty.	Immersion/penetration probes	Probe tip	Connection cable	Sensor	Measuring range	t <sub>90</sub> s	Part no.
	Robust, water-proof precision probe. T <sub>max</sub> handle +70 °C 		1.2 m PVC T <sub>max</sub> +70 °C	<b>Type T Select</b>	-50 to +350 °C	7	0603.1292
				<b>NTC</b>	-50 to +125 °C	10	0613.1211
	Robust, accurate, water-proof stainless steel food probe (IP67) with Teflon cable, also resistant to corrosive cleaning agents 		1.5 m Teflon T <sub>max</sub> +200 °C (short-term +250 °C)	<b>Type T Select</b>	-50 to +350 °C	7	0603.3392
				<b>NTC</b>	-50 to +125 °C	8	0613.3311
	Water-proof precision probe for quick measurements, bore hole not visible, T <sub>max</sub> handle +70 °C 		1.2 m PVC T <sub>max</sub> +70 °C	<b>Type T Select</b>	-50 to +350 °C	3	0603.2692
	Robust penetration probe for measuring small, thin frozen pieces such as pizza, spinach, fillet pieces, fish... 		1.2 m PVC T <sub>max</sub> +70 °C	<b>Type T</b>	-50 to +250 °C ±0.2 °C (-20 to +70 °C) Class 1 (rem. range)	5	0628.0028
	Water-proof, super-quick needle probe. Ideal for hamburgers, steaks, pizza, eggs etc. Very accurate measurements, bore hole not visible 		1.2 m PVC T <sub>max</sub> +70 °C	<b>Type T Select</b>	-50 to +250 °C	1.5	0628.0027
	Water-tight, super-quick needle probe, resistant to temperatures of up to +200 °C. Ideal for monitoring cooking process in oven. Measurements on vacuum products also possible if special sealing strip is used. 		1.2 m Teflon T <sub>max</sub> +200 °C (short-term +250 °C)	<b>Type T</b>	-50 to +250 °C ±0.2 °C (-20 to +70 °C) Class 1	1.5	0628.0030
	Frozen food probe (screw in probe, no drilling required), T <sub>max</sub> handle +70 °C 		1.2 m PVC T <sub>max</sub> +70 °C	<b>Type T Select</b>	-50 to +350 °C	8	0603.3292
			1.5 m PUR T <sub>max</sub> +70 °C	<b>NTC</b>	-50 to +140 °C	20	0613.3211
	Robust food penetration probe with special handle, IP 65, reinforced, cable (PUR) and reinforced protection from buckling 		Fixed cable	<b>Type T</b>	-50 to +350 °C ±0.2 °C (-20 to +70 °C) Class 1 (rem. range)	6	0603.2492

Qty.	Immersion/penetration probes (Pt100)	Probe tip	Connection cable	Meas. range/Accuracy	t <sub>90</sub> s	Part no.
	Laboratory probe, glass-coated, resistant to corrosive substances, screw-on glass stem 		1.5 m PUR	-50 to +400 °C Class A	45 12*	0609.7072
	Spare glass for laboratory probe					0554.7072
	Robust, water-proof stainless steel food probe with long term stable Pt100 sensor 		1.2 m PVC	-50 to +400 °C Class A	12	0609.1272

## Technical data

### Probe connection

**Socket 1:** Thermocouple probe (type T/K/S)

**Socket 2:** NTC probe, Pt100 probe

### Temperature measurement

#### NTC

Measuring range: -50 to +150 °C  
Resolution: 0.1 °C  
Accuracy of instrument\*: ±0.2 °C (-25 to +74.9 °C)  
±0.4 °C (+75 to +99.9 °C)  
±0.5 % of reading (remaining range)  
System accuracy\*\*: Up to ±0.4 °C

#### Type T (Cu-CuNi)

Measuring range: -50 to +400 °C  
Resolution: 0.1 °C  
Accuracy of instrument\*: ±0.3 °C or ±0.5 % of reading at +22 °C (the larger value applies)  
System accuracy\*\*: Up to ±0.5 °C

#### Pt100

Measuring range: -200 to +800 °C  
Resolution: 0.1 °C  
Accuracy of instrument\*: ±0.2 °C or ±0.1 % of reading at +22 °C (the larger value applies)  
System accuracy\*\*: Up to ±0.35 °C

**Warranty:** Meas. instr.: 2 years

### Typical battery lifetimes:

Temperature probe: 40 – 45 h. The hour times are reduced by a factor of 5 if a 9V battery is used.

\*Accuracy: ±1 digit

\*\*System accuracy: total accuracy of probe and measuring instrument.

Order our Testo Catalogue for more information.

Qty.	Calibration certificates	Part no.
	<b>ISO calibration certificate</b> , calibration points -18 °C, 0 °C, +60 °C (air/immersion probes)	0520.0001
	<b>ISO calibration certificate</b> , calibration points +60 °C, +120 °C, +180 °C (surface probes)	0520.0071

\* Without protection glass

## Accuracy data of sensors

Sensor	Temperature range	Class	Permissible tolerances	
			Fixed value	Referred to temperature
Type T thermocouple, Standard	-40 to +350 °C	1	±0.5 °C	±0.004 •  t
Type T thermocouple, Select	-20 to +70 °C	2/5 Class 1	±0.2 °C	±0.004 •  t
	-40 to -19.9; +70.1 to +350 °C	1	±0.5 °C	
Pt100	-200 to +600 °C	A	± (0.15 + 0.002) •  t	
NTC	-50 to -25.1 °C	-	±0.4 °C	
	-25 to +74.9 °C	-	±0.2 °C	
	+75 to +150 °C	-	±0.5 % of reading	

t = Temperature reading

Subject to change without notice.

### Please send me:

- Information on Testo's calibration services
- The Informative Catalogue with a wide range of probes for **testo 946**

Name \_\_\_\_\_ Address \_\_\_\_\_

Company \_\_\_\_\_

Department \_\_\_\_\_ Date, Signature \_\_\_\_\_



In combination with this probe and TopSafe, the **testo 946** measuring instrument is **water-proof (IP65)**.