Data sheet
testo 735

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Temperature measuring instrument (3-channel)

testo 735 – Highest accuracy thanks to system adjustment



- Highest precision over the entire measuring range thanks to system adjustment
- System accuracy up to 0.05 °C
- Display, storage and print-out of Delta T, min., max. and mean values
- Audible alarm (adjustable limit values)
- Cyclic printing of measurement values, e.g once per minute
- Protection class IP65
- Certified according to EN 13485

EN 13485

°C

The robust and compact measuring instrument testo 735 is universally applicable and is available in two versions:
testo 735-1: Precise temperature measuring instrument without measurement value store
testo 735-2: Precise temperature measuring instrument with measurement value store (10,000 values) PC software and USB data transfer cable
The instrument has a probe input for highly accurate Pt100 probes and two inputs for fast thermocouple probes. The measurement values from up to three further temperature probes can be shown in the clear measuring instrument display wirelessly, i. e. using measurement data transfer by radio. A system accuracy of 0.05 °C at a resolution of 0.001 °C is achieved using the highly accurate plug-in Pt100 immersion/penetration probe.
The measurement system is thus ideal for use as a working standard. Selectable user profiles, i.e. programming of the buttons adapted to the application, enable intuitive and fast operation.

Technical data

testo 735-1

testo 735-1, 3 channel temperature measuring instrument T/C Type K/T/J/S/Pt100, audible alarm, connection for max. 3 optional radio probes, incl. battery and calibration protocol

Part no. 0560 7351



testo 735-2

testo 735-2, 3 channel temp. meas. instr. T/C Type K/T/J/S/Pt100, audible alarm, connection for max. 3 optional radio probes, with readings memory, PC software and USB data transmission cable, with battery and calibration protocol

Part no. 0563 7352

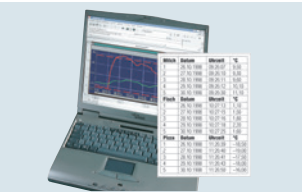


General technical data

Operating temperature	-20 to +50 °C
Storage temperature	-30 to +70 °C
Battery type	Alkali manganese, mignon, Type AA
Protection class	IP65
Dimensions	220 x 74 x 46 mm
Weight	428 g
Housing material	ABS/TPE/Metal
Standard	EN 13485



Wireless measurement with radio probes for air/immersion/ penetration measurement



Analyze and document measurement values by measurement site with PC software (included in delivery of testo 735-2)

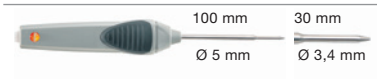
Sensor type	Measuring range	Accuracy ±1 digit	Resolution	Battery life
Pt100 with probe 0614 0235	-80 to +300 °C	±0.3 °C (-80 °C to -40 °C) ±(0.1 °C + 0.05 % of m.v.) (-40 °C to 0 °C) ±0.05 °C (0 to +100 °C) ±(0.05 °C + 0.05 % of m.v.) (+100 °C to +300 °C)	0.001 °C (-40 to +199.999 °C) 0.01 °C (remaining range)	Approx. 60 h
Pt100	-200 to +800 °C	±0.2 °C (-100 to +199.9 °C) ±0.2% of m.v. (remaining range)	0.05 °C	Approx. 250 h
Type K (NiCr-Ni)	-200 to +1370 °C	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of m.v.) (remaining range)	0.1 °C	Approx. 300 h
Type T (Cu-CuNi)	-200 to +400 °C	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of m.v.) (remaining range)	0.1 °C	Approx. 300 h
Type J (Fe-CuNi)	-200 to +1000 °C	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of m.v.) (remaining range)	0.1 °C	Approx. 300 h
Type S (Pt10Rh-Pt)	0 to +1760 °C	±1 °C (0 to +1760 °C)	1 °C	Approx. 300 h

Accessories

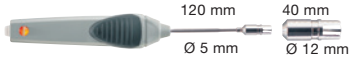
Accessories for measuring instrument	Part no.	
Plug-in mains adapter, 5 VDC 500 mA with European adapter, 100-250 VAC, 50-60 Hz	0554 0447	
Radio module for upgrading measuring instrument with radio option		
Radio module for measuring instrument, 869.85 MHz, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO	0554 0188	
Radio module for measuring instrument, 915.00 MHz FSK, approval for USA, CA, CL	0554 0190	
Printer and Accessories		
Testo fast printer IrDA with wireless infrared interface; 1 roll thermal paper; 4 AA batteries	0554 0549	
Spare thermal paper for printer (6 rolls), permanent ink measurement data documentation legible for up to 10 years	0554 0568	
Transport and Protection		
Service case for measuring instrument, probe and accessories, dimensions 454 x 319 x 135 mm	0516 1035	
Other features		
Extension cable, 5m, for thermocouple probe Type K	0554 0592	
Silicone heat paste (14g), Tmax = +260°C, improves heat transfer in surface probes	0554 0004	
Calibration Certificates		
ISO calibration certificate/temperature for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001	
ISO calibration certificate/temperature meas. instr. with air/immersion probe; cal. points 0°C; +150°C; +300°C	0520 0021	
ISO calibration certificate/temperature meas. instr. with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071	
DAkkS calibration certificate/temperature meas. instr. with air/immersion probe; calibration points -20 °C; 0 °C; +60 °C	0520 0211	
DAkkS calibration certificate/temperature contact surface temperature probes; calibration points +100°C; +200°C; +300°C	0520 0271	
4-point adjustment incl. ISO calibration certificate , calibration points freely selectable for probe 0614 0235	0520 0142	
4-point adjustment incl. DAkkS calibration certificate, calibration points freely selectable for probe 0614 0235	0520 0241	
Calibration certificates incl. adjustment for testo 735-2		
2-point adjustment incl. ISO calibration certificate, calibration points freely selectable	0520 0178	
4-point adjustment incl. ISO calibration certificate , calibration points freely selectable	0520 0142	
2-point adjustment incl. DAkkS calibration certificate, calibration points freely selectable	0520 0278	
4-point adjustment incl. DAkkS calibration certificate, calibration points freely selectable	0520 0241	

Radio probes

Radio handles and probe head for air-/ immersion-penetration-meas.	Part no.
Radio handle for plug-in probe heads, incl. T/C adapter, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO; Radio freq. 869.85 MHz FSK	0554 0189
T/C probe head for air/immersion/penetration measurement (T/C Type K)	0602 0293
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL; Radio freq. 915.00 MHz FSK	0554 0191
T/C probe head for air/immersion/penetration measurement (T/C Type K)	0602 0293

Dimensions Probe shaft/probe shaft tip	Measuring range	Accuracy	Resolution	t_{99}
	-50 to +350 °C Short-term to +500 °C	Radio handle: ±(0.5 °C +0.3% of m.v.) (-40 to +500 °C) ±(0.7 °C +0.5% of m.v.) (remaining range) T/C probe head: Class 2	0.1 °C (-50 to +199.9 °C) 1.0 °C (remaining range)	t_{99} (in water) 10 s

Radio handles and probe head for surface measurement	Part no.
Radio handle for plug-in probe heads, incl. T/C adapter, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO; Radio freq. 869.85 MHz FSK	0554 0189
T/C probe head for surface measurement (T/C Type K)	0602 0394
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL; Radio freq. 915.00 MHz FSK	0554 0191
T/C probe head for surface measurement (T/C Type K)	0602 0394

Dimensions Probe shaft/probe shaft tip	Measuring range	Accuracy	Resolution	t_{99}
	-50 to +350 °C Short-term to +500 °C	Radio handle: ±(0.5 °C +0.3% of m.v.) (-40 to +500 °C) ±(0.7 °C +0.5% of m.v.) (remaining range) T/C probe head: Class 2	0.1 °C (-50 to +199.9 °C) 1.0 °C (remaining range)	5 s

Radio handles for attachable T/C probes	Part no.
Radio handle for plug-in probe heads, incl. T/C adapter, approval for the countries: DE, FR, UK, BE, NL, ES, IT, SE, AT, DK, FI, HU, CZ, PL, GR, CH, PT, SI, MT, CY, SK, LU, EE, LT, IE, LV, NO ; Radio freq. 869.85 MHz FSK	0554 0189
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL; Radio freq. 915.00 MHz FSK	0554 0191

Illustration	Measuring range	Accuracy	Resolution
	-50 to +1000 °C	±(0.7 °C +0.3% of m.v.) (-40 to +900 °C) ±(0.9 °C +0.5% of m.v.) (remaining range)	0.1 °C (-50 to +199.9 °C) 1.0 °C (remaining range)

Technical data Radio probes

Radio immersion/penetration probe, NTC

Battery type	2 x 3V button cell (CR 2032)
Battery life	150 h (meas. rate 0.5 s) 2 months (meas. rate 10 s)

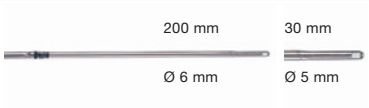
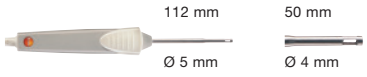
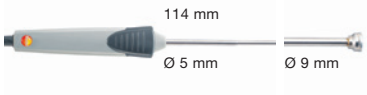
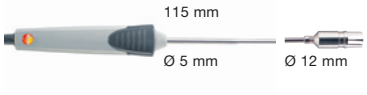
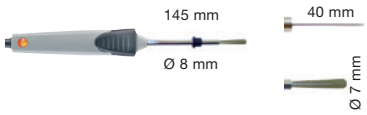
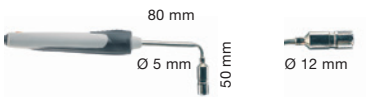
Radio handle

Battery type	2 x 3V button cell (CR 2032)
Battery life	215 h (meas. rate 0.5 s) 6 months (meas. rate 10 s)

Common Technical Data

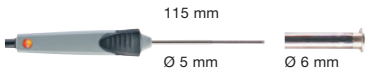
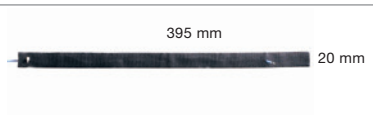
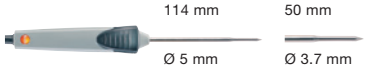
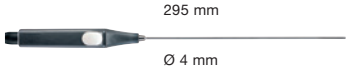
Measuring rate	0.5 s or 10 s, adjustable on handle
Radio coverage	Up to 20 m (without obstructions)
Radio transmission	Unidirectional
Operating temperature	-20 to +50 °C
Storage temperature	-40 to +70 °C

Probes

Probe type	Dimensions Probe shaft/probe shaft tip	Measuring range	Accuracy	t_{99}	Part no.
Laboratory probes					
Laboratory probe Pt100, glass-coated, exchangeable glass pipe (Duran 50), resistant to corrosive substances, Fixed cable		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range) [1]	45 s 12 s Without protective glass	0609 7072
Air probes					
Robust air probe, T/C Type K, Fixed cable		-60 to +400 °C	Class 2 [2]	200 s	0602 1793
Efficient, robust air probe, Pt100, Fixed cable		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range) [1]	70 s	0609 1773
Robust, affordable air probe, T/C Type T, Fixed cable 1.2 m		-50 to +350 °C	±0.2 °C (-20 to +70 °C) Class 1 (remaining range) [2]	25 s	0603 1793
Surface probes					
Robust, waterproof surface temperature probe, Pt100, Fixed cable		-50 to +400 °C	Class B [1]	40 s	0609 1973
Fast-action surface probe with sprung thermocouple strip, also for uneven surfaces, measurement range short-term to +500°C, TC Type K, Fixed cable		-60 to +300 °C	Class 2 [2]	3 s	0602 0393
Fast-reaction paddle surface probe, for measurements in inaccessible places, e.g. narrow apertures and slots, TC Type K, Fixed cable		0 to +300 °C	Class 2 [2]	5 s	0602 0193
Efficient, waterproof surface probe with small measurement head for flat surfaces, TC Type K, Fixed cable		-60 to +1000 °C	Class 1 [2]	20 s	0602 0693
Fast-action surface probe with sprung thermocouple strip, bent, also for uneven surfaces, measurement range short-term to +500°C, TC Type K, Fixed cable		-60 to +300 °C	Class 2 [2]	3 s	0602 0993

1) According to standard 60751, the accuracies of Class A and B refer to -200 to +600 °C (Pt100)
2) According to standard EN 60584-1, the accuracy of Class 1 refers to -40 to +1000 °C (Type K), Class 2 to -40 to +1200 °C (Type K), Class 3 to -200 to +40 °C (Type K). A probe always corresponds to only one accuracy class.

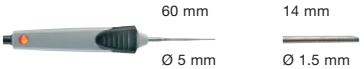
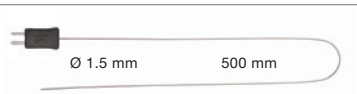
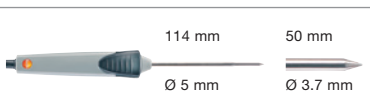
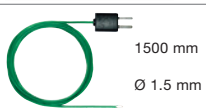
Probes

Probe type	Dimensions Probe shaft/probe shaft tip	Measuring range	Accuracy	t_{99}	Part no.
Surface probes					
Flat head surface probe with telescopic handle max. 680 mm for measurements at hard-to-access points, TC Type K, Fixed cable 1.6 m (correspondingly shorter when telescope extended)		-50 to +250 °C	Class 2 [2]	3 s	0602 2394
Magnetic probe, adhesive force approx. 20 N, with magnets, for measurements on metal surfaces, TC Type K, Fixed cable		-50 to +170 °C	Class 2 [2]	150 s	0602 4792
Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temp., for measurements on metal surfaces, TC Type K, Fixed cable		-50 to +400 °C	Class 2 [2]		0602 4892
Waterproof surface probe with widened measurement tip for flat surfaces, T/C Type K, Fixed cable		-60 to +400 °C	Class 2 [2]	30 s	0602 1993
Pipe wrap probe with velcro strip; for temperature measurement on pipes with diameter up to max. 120 mm; Tmax. +120 °C; TC Type K , Fixed cable		-50 to +120 °C	Class 1 [2]	90 s	0628 0020
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term up to +280 °C, TC Type K, Fixed cable		-60 to +130 °C	Class 2 [2]	5 s	0602 4592
Spare meas. head for pipe wrap probe, TC Type K		-60 to +130 °C	Class 2 [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, TC Type K, Fixed cable		-50 to +100 °C	Class 2 [2]	5 s	0602 4692
Waterproof surface probe with widened measurement tip for flat surfaces, T/C Type T, Fixed cable 1.2 m		-50 to +350 °C	±0.2 °C (-20 to +70 °C) Class 1 (remaining range) [2]	30 s	0603 1993
Immers./penetr. probes					
Robust, waterproof Pt100 immersion/penetration probe, Fixed cable		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range) [1]	12 s	0609 1273
Highly accurate Pt100 immersion/ penetration probe incl. calibration protocol (test points 0 °C and +157 °C), Fixed cable		-80 to +300 °C	±0.3 °C (-80 °C to -40 °C) ±(0.1 °C + 0.05 % of m.v.) (-40 °C to 0 °C) ±0.05 °C (0 to +100 °C) ±(0.05 °C + 0.05 % of m.v.) (+100 °C to +300 °C)	60 s	0614 0235

1) According to standard 60751, the accuracies of Class A and B refer to -200 to +600 °C (Pt100)
2) According to standard EN 60584-1, the accuracy of Class 1 refers to -40 to +1000 °C (Type K), Class 2 to -40 to +1200 °C (Type K), Class 3 to -200 to +40 °C (Type K).
A probe always corresponds to only one accuracy class.

Information on surface measurement:
- The response times t_{99} stated are measured on ground steel or aluminium plates at +60 °C.
- The stated accuracies are sensor accuracies.
- The accuracy in your application is dependent on the surface structure (roughness), material of the measurement object (heat capacity and heat transfer), as wel as sensor accuracy. Testo creates a corresponding calibration certificate for the deviations of your measurement system in your application. For this purpose, Testo uses a surface test bench developed in cooperation with the PTB (Physikalisch Technische Bundesanstalt).

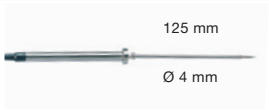
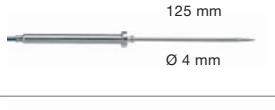
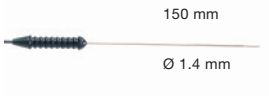
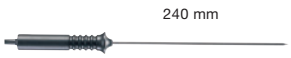
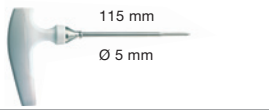
Probes

Probe type	Dimensions Probe shaft/probe shaft tip	Measuring range	Accuracy	t_{99}	Part no.
Immers./penetr. probes					
Efficient and fast-action immersion probe, waterproof, TC Type K, Fixed cable		-60 to +1000 °C	Class 1 [2]	2 s	0602 0593
Fast-action, waterproof immersion/ penetration probe, TC Type K, Fixed cable		-60 to +800 °C	Class 1 [2]	3 s	0602 2693
Immersion tip, flexible, TC Type K		-40 to +1000 °C	Class 1 [2]	5 s	0602 5792
Immersion tip, flexible, TC Type K		-200 to +40 °C	Class 3 [2]	5 s	0602 5793
Immersion measurement tip, flexible, for measurements in air/ exhaust gases (not suitable for measurements in smelters), TC Type K		-40 to +1000 °C	Class 1 [2]	4 s	0602 5693
Waterproof immersion/penetration probe, TC Type K, Fixed cable		-60 to +400 °C	Class 2 [2]	7 s	0602 1293
Flexible, low-mass immersion measurement tip, ideal for measurements in small volumes such as petri dishes, or for surface measurements (e.g. attached with adhesive tape), TC Type K, 2 m, FEP insulated thermal wire, temperature proof up to 200 °C, oval wire with dimensions: 2.2 mm x 1.4 mm		-40 to +1000 °C	Class 1 [2]	1 s	0602 0493
Thermocouples					
Thermocouple with TC adapter, flexible, 800 mm long, fibre glass, TC Type K		-50 to +400 °C	Class 2 [2]	5 s	0602 0644
Thermocouple with TC adapter, flexible, length 1500 mm , fibreglass, TC Type K		-50 to +400 °C	Class 2 [2]	5 s	0602 0645
Thermocouple with TC adapter, flexible, 1500 mm long, PTFE, TC Type K		-50 to +250 °C	Class 2 [2]	5 s	0602 0646

2) According to standard EN 60584-1, the accuracy of Class 1 refers to -40 to +1000 °C (Type K), Class 2 to -40 to +1200 °C (Type K), Class 3 to -200 to +40 °C (Type K).
A probe always corresponds to only one accuracy class.

Be sure. testo

Probes

Probe type	Dimensions Probe shaft/probe shaft tip	Measuring range	Accuracy	t_{99}	Part no.
Food probes					
Robust, Pt100 stainless steel food probe (IP65), Fixed cable		-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range) [1]	10 s	0609 2272
Waterproof food probe made of stainless steel (IP65), TC Type K, Fixed cable		-60 to +400 °C	Class 2 [2]	7 s	0602 2292
Waterproof super-fast needle probe, highly accurate measurements without visible penetration hole. Specially for food, ideal for hamburgers, steaks, pizza, eggs etc., T/C Type K, Fixed cable		-60 to +250 °C	Class 1 [2]	1s	0628 0026
Waterproof robust immersion/ penetration probe with metal protection hose Tmax +230°C, e.g. for monitoring temp. in cooking oil, T/C Type K, Fixed cable		-50 to +230 °C	Class 1 [2]	15 s	0628 1292
Stable, robust surface probe with PTFE standing area and metal protection hose Tmax +230 °C for cooking surfaces, heating and baking trays, T/C Type K, Fixed cable		-50 to +230 °C	Class 2 [2]	45 s	0628 9992
Robust food penetration probe with special handle, reinforced cable (PVC), T/C Type T, Fixed cable		-50 to +350 °C	±0.2 °C (-20 to +70 °C) Class 1 (remaining range) [2]	6 s	0603 2492

1) According to standard 60751, the accuracies of Class A and B refer to -200 to +600 °C (Pt100)
2) According to standard EN 60584-1, the accuracy of Class 1 refers to -40 to +1000 °C (Type K), Class 2 to -40 to +1200 °C (Type K), Class 3 to -200 to +40 °C (Type K).
A probe always corresponds to only one accuracy class.

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Subject to change without notice.