

testo 735, highly accurate alarm and logger thermometer – with measurement site management

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Wireless measurement with radio probes for air, immersion and penetration measurement



Evaluate and document readings by measurement location with PC software (included with testo 735-2)



A robust and reliable measuring instrument, protection class IP54 from impact



Print readings on site on testo printer



testo 735

Measuring several temperatures simultaneously

testo 735 – the highly versatile multi-channel measuring instrument. Fully equipped, up to 6 temperature probes can be recorded and displayed: Three radio probes and three attachable probes. For classical probes with wire, two inputs for fast thermocouple probes (Type K/T/J/S) and one input for highly precise Pt100 probes are available. The highly precise immersion/penetration probe reaches an accuracy of up to 0.05 °C via the Pt100 probe input. The resolution of the probe is 0.001 °C.

Versatility through radio probes

Readings can be transmitted to the testo 735 over a distance of up to 20 m (without obstruction) by radio. This takes place using the optional radio module and the corresponding probes. Damage to the wire or hindrances in usage are thus eliminated.

More user comfort

The testo 735 excels through its logical use and easy-to-follow menu. Functions such as timed and multi-point mean value calculation, differential temperature measurement, display of min/max values and the freezing of readings in the display provide support in day-to-day measurement.

Common advantages

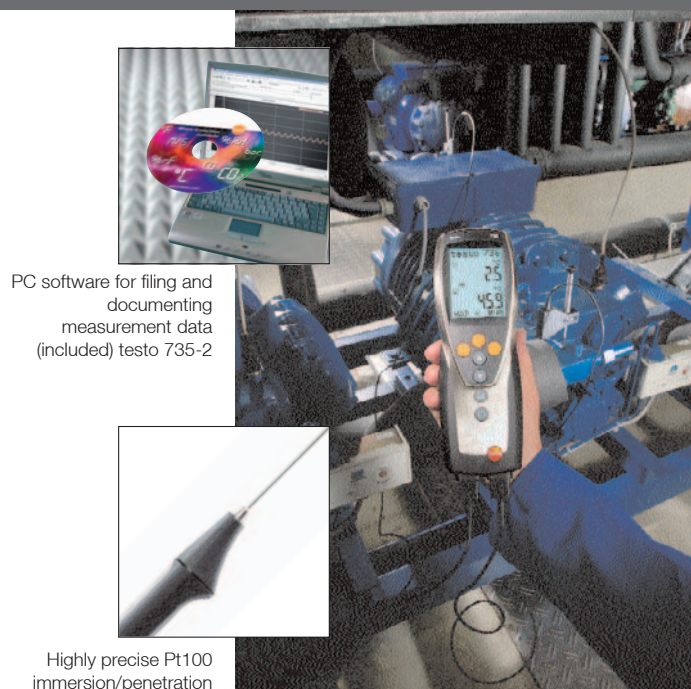
- Connection of 3 attachable probes and three radio probes
- Data printout on the testo printer
- Audible alarm when limit values are exceeded
- System accuracy up to 0.05 °C
- Display of Delta T, min., max. and mean values
- Backlit display
- Protection class IP 65

Further advantages testo 735-1

- Cyclic printing of readings on testo printer, e.g. once per minute

Further advantages testo 735-2

- Instrument store for 10,000 readings
- PC software for archiving and documenting measurement data
- Storage of single measurements or measurement series by measurement location, measurement rate from 0.5 sec.
- Quick access to the most important functions via user profiles
- Accuracy over the entire measurement range thanks to system adjustment



PC software for filing and documenting measurement data (included) testo 735-2

Highly precise Pt100 immersion/penetration probe with an accuracy of ± 0.05 °C

Simultaneous measurement of several temperatures



Printer and Accessories	Part no.
Testo printer with wireless IRDA and infrared interface, 1 roll of thermal paper and 4 AA batteries	0554 0547
Spare thermal paper for printer (6 rolls), measurement data documentation legible for up to 10 years	0554 0568
Spare thermal paper for printer (6 rolls)	0554 0569
External fast charger for 1-4 AA rech. batteries, incl. 4 Ni-MH rech. batteries with individual cell charging and charge control display, incl. impulse trickle charging, integrated discharge function, with built-in international mains plug, 100-240 V, 300 mA, 50/60 Hz	0554 0610
Additional accessories	Part no.
Plug-in mains adapter, 5 VDC 500 mA with European adapter	0554 0447
Probe holder for connection to stand	0554 0735
Extension cable, 5m, for thermocouple probe Type K	0554 0592
Silicone heat paste (14g), T _{max} = +260°C, improves heat transfer in surface probes	0554 0004
Handle for attachable measurement tips	0409 1092
Transport and protection	Part no.
Service case for basic equipment of measuring instrument and probes, dimensions: 400 x 310 x 96 mm	0516 0035
Service case for measuring instrument, probes and accessories	0516 0235
Adjustment software for testo 735-2	Part no.
Software for adjustment testo 735-2 with user management, incl. USB data transfer cable	0554 0823
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. DKD calibration certificate, calibration points freely selectable	0520 0278
4-point adjustment incl. DKD calibration certificate, calibration points freely selectable	0520 0241
Calibration Certificates	Part no.
ISO calibration certificate/temperature, single point calibration for surface thermometer; calibration point +60°C	0520 0072
ISO calibration certificate/temperature, single point calibration for surface thermometer; calibration point +120°C	0520 0073
ISO calibration certificate/temperature, for air/immersion probes, calibration points -18°C; 0°C; +60°C	0520 0001
ISO calibration certificate/temperature, for air/immersion probes, calibration points -8°C; 0°C; +40°C	0520 0181

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

System adjustment

Precision over the entire measurement range due to system adjustment

The system adjustment of testo 735-2 offers precise measurement results at critical temperature points. Due to a system calibration, the testo 735-2 including probe, can be adjusted at up to six user-defined temperature points across the entire measurement range. The adjustment takes place in the course of an ISO or DKD calibration by the Testo calibration laboratory Testo industrial services, or can be carried out individually by the user via an optional adjustment software.

This results in the following advantages.

Very accurate measurements at critical temperature points

Customers appreciate the broad measurement range of thermocouple probes, however they are often dissatisfied with the accuracy according to EN. Thanks to a system adjustment on the testo 735-2, system deviations up to the accuracy of the reference system can be achieved even with thermocouples!

In the course of a DKD calibration of thermocouple probes and testo 735-2 by the Testo calibration laboratory, deviations from 0.2 K from the reference value can be achieved after adjustment has taken place.

Flexible handling

Up to 6 probes can be operated simultaneously from the testo 735-2:

- 2 plug-in thermocouple probes
- 1 plug-in Pt100 probe
- 3 wireless probes: Option of thermocouple and NTC probes

The complete range of probes of the testo 735-2 can be adjusted to the testo 735-2. This allows flexible handling.

Traceability of the adjustment

The adjustment data recorded and the probe identification (e.g. the number of the calibration certificate) are stored in the hand instrument. If a thermocouple probe is adjusted to the testo 735-2 on channel 3, for example, the recorded adjustment data are stored in channel 3 of the hand instrument.

The adjustment data and the probe identification can be viewed in testo 735-2 at any time, and can be matched with the corresponding calibration certificates and connected probes. This guarantees the traceability of the data. The adjustment data stored in the testo 735-2, the probe identification and the date of the adjustment can be printed out on site with the optional Testo report printer.



Manipulation-proof

The adjustment data stored in the testo 735-2 and the probe identification cannot be manipulated in the instrument. An alteration or update of the data is carried out by the Testo calibration laboratory in the course of a new system adjustment, or can be done by the user with the optional adjustment software.

Assurance in measurement

Probes with stored adjustment data are identified with "adj." in the instrument's display. This allows the user to see immediately in which channels adjustment data are stored. This clear referencing provides assurance in measurement.

Adjustment by the Testo calibration laboratory

The adjustment takes place on request in the course of a DKD or ISO calibration in the Testo calibration laboratory. You select the temperature points at which the measurement system (probe and instrument) is to be adjusted. You have the option of a two-point or a four-point adjustment. The ISO/DKD certificate documents the system accuracy recorded, including certificate number, date of adjustment and the instrument and probe serial numbers. The certificate number and the adjustment data are stored in the hand instrument. They can be viewed there at any time. This guarantees the traceability of the data.

Example of system deviation before and after adjustment with a TC probe.

Temperature	Accuracy probe 0602 1293, TC class 2	Deviation testo 735-2	System accuracy <u>before</u> adjustment	System deviation from the reference value <u>after</u> adjustment by Testo industrial services
+60 °C	±2,5 °C	±0,3 °C	±2,8 °C	from 0,2 K
+400 °C	±3,0 °C	±1,4 °C	±4,4 °C	from 0,4 K

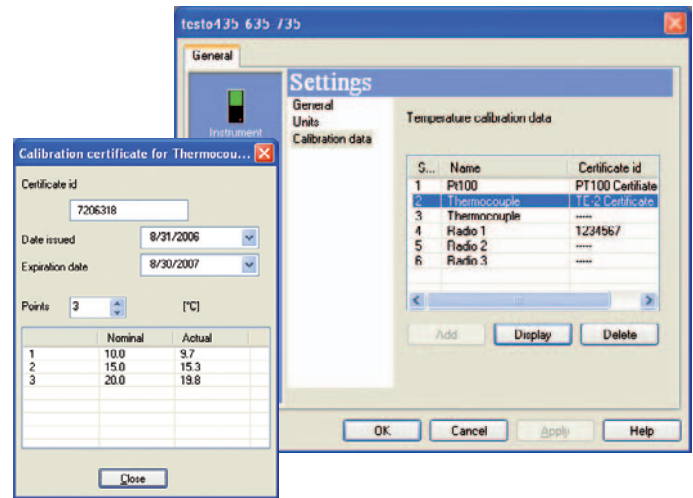
Example of system deviation before and after adjustment with a Pt100 probe.

Temperature	Deviation probe 0609 1273, Pt100	Deviation testo 735-2	System accuracy <u>before</u> adjustment	System deviation from the reference value <u>after</u> adjustment by Testo industrial services
+60 °C	±0,27 °C	±0,3 °C	±0,57 °C	from 0,02 K
+400 °C	±0,95 °C	±1,4 °C	±2,34 °C	from 0,03 K

System adjustment / Suitable probes at a glance, testo 735

Adjustment by the user

The adjustment can be carried out individually by the user himself, using the optional adjustment software. Up to six adjustment points per probe can be recorded during the course of a system calibration and entered into the software. You also have the option of documenting a probe identification and the date of the adjustment in the software. The data are transferred to the testo 735-2 via a USB cable. They can be viewed there at any time. This guarantees the traceability of the data.



Air probes	Illustration	Meas. range	Accuracy	t99	Part no.
Efficient, robust air probe, Pt100	114 mm Ø 5 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	70 s	0609 1773 Conn.: Fixed cable
Surface probes	Illustration	Meas. range	Accuracy	t99	Part no.
Robust, waterproof surface temperature probe, Pt100	114 mm Ø 5 mm	-50 to +400 °C	Class B	40 s	0609 1973 Conn.: Fixed cable
Fast-action surface probe with sprung thermocouple strip, also for uneven surfaces, measurement range short-term to +500°C, TC Type K	115 mm Ø 5 mm	-60 to +300 °C	Class 2	3 s	0602 0393 Conn.: Fixed cable, 1.2 m
Fast-reaction paddle surface probe, for measurements in inaccessible places, e.g. narrow apertures and slots, TC Type K	145 mm Ø 8 mm	0 to +300 °C	Class 2	5 s	0602 0193 Conn.: Fixed cable
Efficient, waterproof surface probe with small measurement head for flat surfaces, TC Type K	150 mm Ø 2.5 mm	-60 to +1000 °C	Class 1	20 s	0602 0693 Conn.: Fixed cable, 1.2 m
Fast-action surface probe with sprung thermocouple strip, bent, also for uneven surfaces, measurement range short-term to +500°C, TC Type K	80 mm Ø 5 mm	-60 to +300 °C	Class 2	3 s	0602 0993 Conn.: Fixed cable, 1.2 m
Flat head surface probe with telescopic handle max. 680 mm for measurements at hard-to-access points, TC Type K	680 mm Ø 25 mm	-50 to +250 °C	Class 2	3 s	0602 2394 Conn.: Fixed cable
Magnetic probe, adhesive force approx. 20 N, with magnets, for measurements on metal surfaces, TC Type K	35 mm Ø 20 mm	-50 to +170 °C	Class 2		0602 4792 Conn.: Fixed cable
Magnetic probe, adhesive force approx. 10 N, with magnets, for higher temp., for measurements on metal surfaces, TC Type K	75 mm Ø 21 mm	-50 to +400 °C	Class 2		0602 4892 Conn.: Fixed cable
Waterproof surface probe with widened measurement tip for flat surfaces, T/C Type K	115 mm Ø 5 mm	-60 to +400 °C	Class 2	30 s	0602 1993 Conn.: Fixed cable, 1.2 m
Pipe wrap probe with Velcro strip, for temperature measurement on pipes with diameter up to max. 120 mm, Tmax +120°C, TC Type K	395 mm 20 mm	-50 to +120 °C	Class 1	90 s	0628 0020 Conn.: Fixed cable
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Meas. range short-term to +280°C, TC Type K		-60 to +130 °C	Class 2	5 s	0602 4592 Conn.: Fixed cable
Spare meas. head for pipe wrap probe, TC Type K	35 mm 15 mm	-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, TC Type K		-50 to +100 °C	Class 2	5 s	0602 4692 Conn.: Fixed cable



Suitable probes at a glance, testo 735

Immers./penetr. probes	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Highly accurate Pt100 immersion/penetration probe with certificate	295 mm Ø 4 mm	-40 to +300 °C	±0.05 °C (+0.01 to +100 °C) ±(0.05 °C + 0.05% of mv) (remaining range)	60 s	0614 0235 Conn.: Fixed cable
Robust, waterproof Pt100 immersion/penetration probe	114 mm Ø 5 mm 50 mm Ø 3.7 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	12 s	0609 1273
Efficient and fast-action immersion probe, waterproof, TC Type K	300 mm Ø 1.5 mm	-60 to +1000 °C	Class 1	2 s	0602 0593 Conn.: Fixed cable, 1.2 m
Immersion tip, flexible, TC Type K	500 mm Ø 1.5 mm	-200 to +1000 °C	Class 1	5 s	0602 5792
Immersion measurement tip, flexible, for measurements in air/exhaust gases (not suitable for measurements in smelters)	1000 mm Ø 3 mm	-200 to +1300 °C	Class 1	4 s	0602 5693
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	500 mm Ø 0.25 mm	-200 to +1000 °C	Class 1	1 s	0602 0493 Conn.: 2 m, FEP insulated thermal wire, temperature proof up to 200 °C, oval wire with dimensions: 2.2 mm x 1.4 mm
Flexible, sharpened immersion measurement tip, ideal for immersion measurements in small volumes, such as test tubes, TC Type K	200 mm Ø 1 mm	-200 to +800 °C	Class 1	3 s	0602 2193 Conn.: Fixed cable
Robust, Pt100 stainless steel food probe (IP65)	125 mm Ø 4 mm 15 mm Ø 3 mm	-50 to +400 °C	Class A (-50 to +300 °C), Class B (remaining range)	10 s	0609 2272 Conn.: Fixed cable
Thermocouples	Illustration	Meas. range	Accuracy	t ₉₉	Part no.
Thermocouple with TC adapter, flexible, 800mm long, fibre glass, TC Type K	Ø 1.5 mm	-50 to +400 °C	Class 2	5 s	0602 0644
Thermocouple with TC adapter, flexible, 1500mm long, fibre glass, TC Type K		-50 to +400 °C	Class 2	5 s	0602 0645
Thermocouple with TC adapter, flexible, 1500mm long, Teflon, TC Type K		-50 to +250 °C	Class 2	5 s	0602 0646

Radio module for upgrading measuring instrument with radio option



Country versions	Radio freq.	Part no.
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	869.85 MHz FSK	0554 0188
Radio module for measuring instrument, 915.00 MHz FSK, approval for USA, CA, CL	915.00 MHz FSK	0554 0190

Radio probes for immersion/penetration measurements


Radio immersion/penetration probes	Meas. range	Accuracy	Resolution	t ₉₉
Radio immersion/penetration probe, NTC 105 mm 30 mm Ø 5 mm Ø 3.4 mm	-50 to +275 °C	±0.5 °C (-20 to +80 °C) ±0.8 °C (-50 to -20.1 °C) ±0.8 °C (+80.1 to +200 °C) ±1.5 °C (remaining range)	0.1 °C	t ₉₉ (in water) 12 s
Country versions	Radio freq.	Part no.		
Radio immersion/penetration probe, NTC, 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	869.85 MHz FSK	0613 1001		
Radio immersion/penetration probe, NTC, approval for USA, CA, CL	915.00 MHz FSK	0613 1002		

Option: Radio / Technical data, testo 735

Assembled for you: Radio handles with probe head

Radio handles with probe head for air-/ immersion-penetration-meas.	Meas. range	Accuracy	Resolution	t ₉₉
Radio handle for attachable TC probe heads with TC probe head for air/immersion/penetration measurement 	-50 to +350 °C Short-term to +500 °C	Radio handle: ±(0.5 °C + 0.3% of mv) (-40 to +500 °C) ±(0.7 °C + 0.5% of mv) (remaining range) TC probe head: Class 2	0.1 °C (-50 to +199.9 °C) 1.0 °C (remaining range)	t ₉₉ (in water) 10 s
Country versions		Radio freq.	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		869.85 MHz FSK	0554 0189	
T/C probe head for air/immersion/penetration measurement, attachable to radio handle, T/C Type K			0602 0293	
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL		915.00 MHz FSK	0554 0191	
T/C probe head for air/immersion/penetration measurement, attachable to radio handle, T/C Type K			0602 0293	
Radio handles with probe head for surface measurement	Meas. range	Accuracy	Resolution	t ₉₉
Radio handle for attachable probe heads with T/C probe head for surface measurement 	-50 to +350 °C Short-term to +500 °C	Radio handle: ±(0.5 °C + 0.3% of mv) (-40 to +500 °C) ±(0.7 °C + 0.5% of mv) (remaining range) TC probe head: Class 2	0.1 °C (-50 to +199.9 °C) 1.0 °C (remaining range)	5 s
Country versions		Radio freq.	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		869.85 MHz FSK	0554 0189	
T/C probe head for surface measurement, attachable to radio handle, T/C Type K			0602 0394	
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL		915.00 MHz FSK	0554 0191	
T/C probe head for surface measurement, attachable to radio handle, T/C Type K			0602 0394	

Radio handles, separate

Radio handles for attachable T/C probes	Meas. range	Accuracy	Resolution
Radio handle for attachable probe heads incl. adapter for attaching TC probes (Type K) 	-50 to +1000 °C	±(0.5 °C + 0.3% of mv) (-40 to +900 °C) ±(0.7 °C + 0.5% of mv) (remaining range)	0.1 °C (-50 to +199.9 °C) 1.0 °C (remaining range)
Country versions		Radio freq.	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		869.85 MHz FSK	0554 0189
Radio handle for plug-in probe heads, incl. T/C adapter, approval for USA, CA, CL		915.00 MHz FSK	0554 0191

Radio probes: General technical data

Battery type	Radio immersion/penetration probe, NTC 2 x 3V button cell (CR 2032)	Radio handle 2 AAA micro batteries	Measuring rate	0.5 s or 10 s, adjustable on handle	Radio transmission	Unidirectional
Battery life	150 h (meas. rate 0.5 s) 2 months (meas. rate 10 s)	215 h (meas. rate 0.5 s) 6 months (meas. rate 10 s)	Radio coverage	Up to 20 m (without)	Oper. temp.	-20 to +50 °C
					Storage temp.	-40 to +70 °C

Technical data

Probe type*	Pt100	Pt100 with probe 0614 0235	Type K (NiCr-Ni)	Type T (Cu-CuNi)	
Meas. range	-200 to +800 °C	-40 to +300 °C	-200 to +1370 °C	-200 to +400 °C	
Accuracy ±1 digit	±0.2 °C (-100 to +199.9 °C) ±0.2% of mv (remaining range)	See probe data	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)	
Resolution	0.05 °C	0.001 °C (-40 to +199.999 °C) 0.01 °C (remaining range)	0.1 °C	0.1 °C	
Probe type*	Type J (Fe-CuNi)	Type S (Pt10Rh-Pt)			
Meas. range	-200 to +1000 °C	0 to +1760 °C			
Accuracy ±1 digit	±0.3 °C (-60 to +60 °C) ±(0.2 °C + 0.3% of mv) (remaining range)	±(1 °C + 0.1% of mv)			
Resolution	0.1 °C	1 °C			
Oper. temp.	-20 to +50 °C	Battery type	Alkali manganese, mignon, Type AA	Weight	428 g
Storage temp.	-30 to +70 °C	Dimensions	220 x 74 x 46 mm	Protection class	IP65
Battery life	approx. 300 h with TC probe	approx. 250 h with Pt100	approx. 60 h with 0614 0235		

*Probe type NTC when using radio immersion/penetration probes

