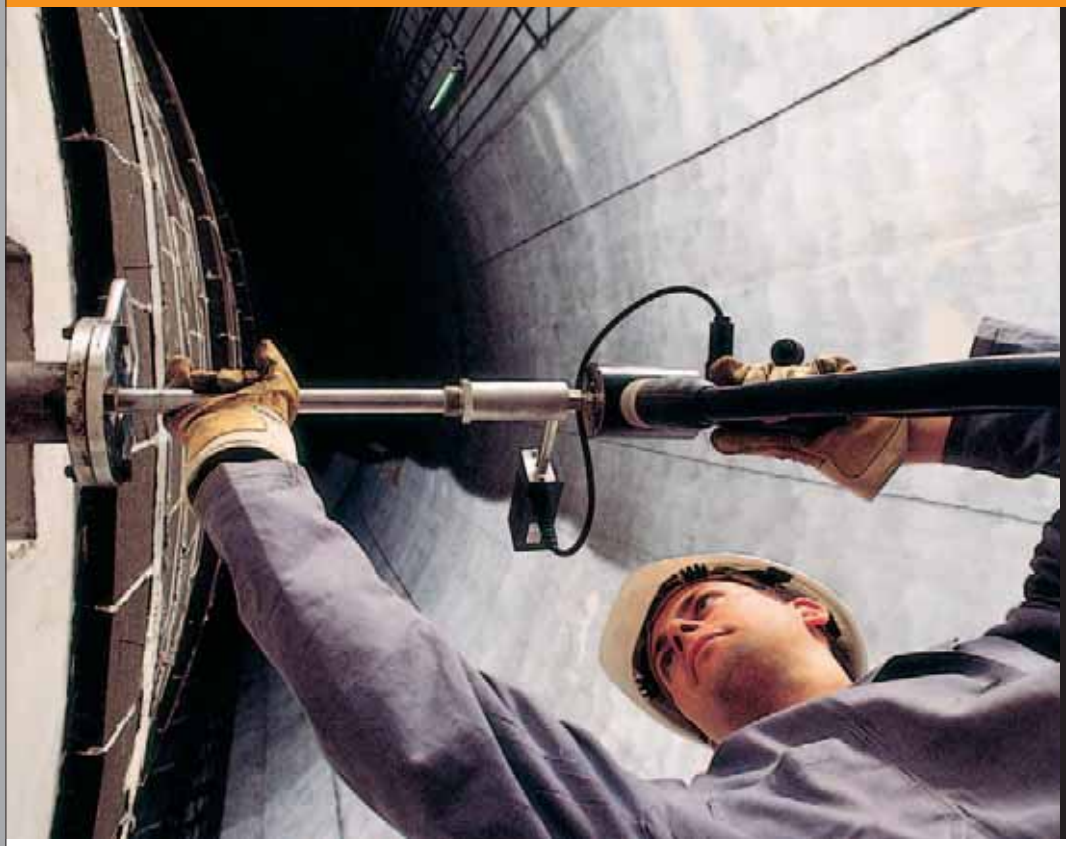
testo

Measurement Solutions for Emissions, Service and Thermal Processes

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818



Accurate Values In The Name Of Efficiency and Environment

Modern emission analysis is required to fulfill a set of requirements – Testo consistently meets these requirements:
Starting with continuous emission checks through to tuning and optimisation of burners to process monitoring in thermal manufacturing processes.

The adaptive flue gas analysis systems which Testo has been developing, producing and selling for the past 18 years not only concentrate on precision but also particularly on practicality and handling.

Directly to the customers

The requirements in the flue gas analysis sector are becoming more and more complicated and specialised – Testo has become active particularly in the industrial customers segment: Experienced Testo experts analyse the specifications profile, develop and define the optimum system solution. The transfer of qualified advice competence to the requirements on site has emerged and has established itself as an extremely important tool.
But that's not enough – Fast reaction time in all service questions after purchase underline Testo's efficiency and competence.

Measurement projects instead of measurement products

The range of products in the emission measurement sector is highly specialised and can be adapted accordingly. Against this background, Testo offers real project management. After all, the aim is to design measurement systems, adapted to each other, which guarantee optimum results at the highest efficiency levels. A full overview of your analysis processes is the basis for solution systems made by testo.

For special applications in industry

The flue gas analyser product line is geared especially toward industry requirements:

- High accuracy (comparable with infrared or chemical engineering from the stationary application sector).
- Long-term measurements (practically stationary) lasting several hours to several weeks.
- Flexible sampling probe program for highly different sampling points.
- High to extreme measurement ranges for use in raw gas or in special oven atmospheres.
- Service is carried out by the user saving money and downtimes.
- Not affected by dusty and damp flue gases or "tough" ambient conditions.

The special benefits pay off during daily use

The practical Testo instrument design for emission measurement have important features: Pre-calibrated measurement cells with electronics attached which are as easy to change as batteries as well as the long

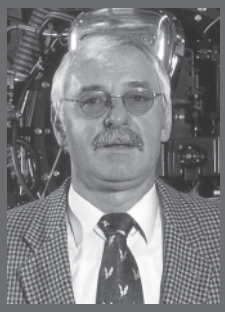
For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

service life of the measurement cells which greatly reduce test gas adjustment intervals. One other striking feature of Testo instruments is the built-in Peltier gas preparation unit with hose pump for automatic condensate elimination.

Learning changes

Do you have your current emission limits under control? Important parameters under control? Documentation without any gaps? Optimum interplay of emission analysis components? If you have any queries, do not hesitate to call us.

Testo is a reliable partner



Hartmut Dobrocky, Operations Manager at SAACKE Service

The SAACKE GmbH & Co. KG with headquarters in Bremen stands worldwide for High Tech Engineering in thermal process engineering. The family business manufactures industrial burners for practically all combustible materials.

Mr. Dobrocky, the family business, SAACKE, has been in existence since 1931. How has industrial heat and energy generation technology developed in this time?

When the company first started, there were mainly heavy fuel oil burners which took over from the coal era. They were first used as ship burners. The development of rotary atomizers signified significant progress. Light oil burning came later and the oil crisis in the seventies led to the development of gas burners.

Have qualitative requirements influenced burner engineering?

In the past, it was mainly about engineering to generate process heat. Now, a responsible attitude towards the environment has top priority.

In your service team, you use Testo instruments almost exclusively. Do instruments with electrochemical measurement cells have special benefits?

When selecting the measurement method used, accuracy always has top priority. In the case of instruments with electrochemical measurement cells, we achieve measurement accuracies within the measurement ranges required which can be compared with other systems. One major advantage is the user-friendliness of the instruments. The flue gas analysis systems manufactured by Testo and used by us are about the size of a briefcase. This enables fast and easy operation.

SAACKE Service therefore relies on Testo measurement engineering on a daily basis?

In Germany alone, 65 service technicians are equipped with portable flue gas analysis systems made by Testo. The instruments have proven themselves in terms of efficiency and measurement accuracy as well as easy handling and often in difficult conditions. An additional reason for our close partnership with Testo which must be mentioned is the presence of Testo subsidiaries and sales partners in over 60 countries all over the world.

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

The right flue gas analyser for ev

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

ery requirement

The approved reference flue gas analyser for continuous emission measurement — **testo 360**

The flexible, portable flue gas analyser (measurement system) — **testo 350 M/XL**

The compact flue gas analyser for fast emission monitoring — **testo 300 M-I**, **testo 300 XL-I**

Introduction to portable flue gas measurement — **testo 325-I CO_{high} [O_2]**

Convenient introductory instrument for emission monitoring and tuning of gas burners — **testo 325-I CO_{low} set**

Convenient introductory instrument for emission monitoring of engines and burners — **testo 325-I NO set**

Convenient introductory instrument for emission monitoring on coal and heavy oil burners — **testo 325-I SO_2 set**

Maximum number of measurement cells		1	1	1	2	2	3	3	4	6	7
Possible measurable parameters	O_2				■	■	■	■	■	■	■
	CO				■	■	■	■	■	■	■
	CO_{low}	■					■	■	■	■	
	NO		■				■	■	■	■	■
	NO_{low}								■	■	
	NO_2								■	■	■
	SO_2			■			■	■	■	■	■
	H_2S									■	
	HC									■	■
	CO_2 (NDIR)								■	■	■
Measurement range extension for the following measurement cells									CO	CO	CO, CO_2, NO, NO_2, SO_2
Protection of CO measurement cell by manual switch-off								■			
Setting switch-off thresholds in measurement cells when specified concentrations are reached							■	■	■	■	■
Built-in Peltier measurement gas preparation unit									■	■	■
Data logger operation lasting several hours and days									■	■	■
Connection of robust, modular sampling probes for industrial applications							■	■	■	■	■
Easy-to-change measurement cells without test gas adjustment by the user		■	■	■	■	■	■	■	■	■	■
Analysis software for meas. data management incl. analysis and graphics function, online meas.							■	■	■	■	■
Built-in data memory							20 data blocks	100 data blocks	250'000 readings	250'000 readings	depending on laptop used
Interfaces for data transfer to PC							RS232	RS232	RS232	RS232	RS232

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Industrial flue gas – Affordable analysis and documentation

testo 325-I

testo 325-I provides affordable flue gas analysis for CO, NO and SO2. It combines precision with user-friendly operation and low costs. It is the ideal instrument for checking emissions and monitoring thermal processes.

- User-friendly operation and handling – Large display
- Measurement cell can be easily changed by the user
- Magnetic SoftCase protects from dirt and impact

Prints readings with date and time

Easy to service condensate trap

Adjusts flue gas feedback for NOx reduction

Printer and Accessories	Part no.
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries, For printout of reading on site	0554 0547
Recharger for instrument and printer (with 4 standard rech. batteries)	0554 0110
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls), permanent ink, Measurement data documentation legible for up to 10 years	0554 0568
Additional Accessories and Spare Parts	**Part no.**
Sealing cone with knurled screw for sampling probe	0554 9050
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug), For mains operation and battery recharging	0554 1084
Spare particle filter (10 off)	0554 0040
Smoke tester with oil, soot sheet, for measuring soot in flue gas	0554 0307
Filter paper to determine smoke number, 40 strips for approx. 200 measurements	0554 0308
Transport and Protection	**Part no.**
SoftCase made of elastic plastic with magnetic plate, carrier strap; Protects instrument from dirt and impact	<cmsattr
<cmsattr A="120" O="4678" L="12" S="145" P="32489" />; Protects instrument from dirt, moisture and impact	0516 0444
Transport case (plastic) for instrument, probes and accessories, For safe and orderly storage	0516 3250
Alu. case for analyser, probe and accessories, Probes in lid make it easy to find parts in case	0516 0325

Technical data	SO_2	NO	COlow
Meas. range	0 to +3000 ppm SO_2	0 to +1000 ppm NO	0 to +2000 ppm CO
Accuracy ±1 digit	±5% of mv (+400 to +3000 ppm SO_2) ±20 ppm SO_2 (0 to +400 ppm SO_2)	±5% of mv (+400 to +1000 ppm NO) ±20 ppm NO (0 to +400 ppm NO)	±5% of mv (+400 to +2000 ppm CO) ±20 ppm CO (0 to +400 ppm CO)
Resolution	1 ppm SO_2	1 ppm NO	1 ppm CO
Reaction time	80 s	60 s	60 s

testo 325-I SO_2

SO2 Set
SO2 Set includes analyser and sampling probe (with Tygon® hose), with batteries and calibration protocol

Part no. 0563 3260

- Checks emissions in coal and heavy oil burners
- Monitors flue gas desulphurisation systems
- Process monitoring in the glass and ceramics industry

testo 325-I NO

NO Set
NO set includes analyser and sampling probe, with batteries and calibration protocol

Part no. 0563 3261

- Checks emissions in motors and burners
- Monitors nitrogen removal systems/catlaytic converters
- Adjusts flue gas feedback for NOx reduction

testo 325-I COlow

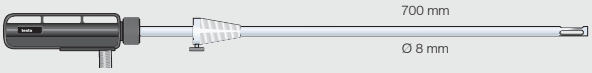
COlow Set
COlow set includes analyser and sampling probe, with batteries and calibration protocol

Part no. 0563 3262

- Emission control and adjustment of gas burners
- Localisation of ambient air leaks in long flue gas paths

Common data	
Dimensions	216 x 68 x 47 mm
Weight	500 g
Oper. temp.	+4 to +45 °C
Storage temp.	-20 to +50 °C
Battery type	4 AA batteries
Battery life	4 h
Material/Housing	ABS
Power supply	Mains unit
Voltage	115/230 V / 50/60 Hz
Display	LCD, 2 lines

Warranty:
Meausuring instrument: 2 years (excluding working parts, e.g. measurement cells, ...)
Measurement cells: 6 months
Power supply: Battery or power unit

Description	Illustration	Part no.
Sampling probe, 700 mm immersion depth, incl. cone, Tmax +1000°C, 3 m hose		0699 3451/3
Sampling probe, 300 mm, Ø 6 mm, Tmax. +500 °C, 3 m hose, without handle, is included in SO_2 set, NO set and CO_{low} set (see Figure above)		

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Your introduction to portable flue gas analysis

testo 325-I CO_{high} [O_2]

The testo 325-I CO_{high} [O_2] is your step to affordable flue gas analysis. Easy handling and low costs make it the ideal portable partner for

- checking the atmosphere of thermal processes (funnel furnaces, hardening furnaces, smelting and annealing)
- adjusting process burners and gas motors.

The readings are displayed constantly on the display for as long as the pump is running.

- Measurement cells can be easily changed by the user
- Instrument protection on account of detachable condensate trap

Prints readings on site with date, time

Special flue gas probe with 3 m hose

Tuning motors with the CO_{high} [O_2] analyser

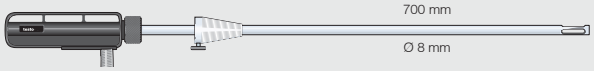
testo 325-I CO_{high}	testo 325-I CO_{high} [O_2]
Flue gas analyser with rechargeable batteries and calibration protocol	Flue gas analyser with rechargeable batteries and calibration protocol
Part no. 0632 3264	**Part no. 0632 3265**

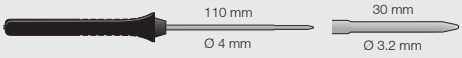
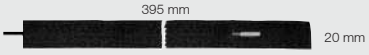
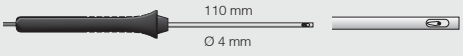
Accessories Ordering data	Part no.
Softcase made of elastic plastic	0516 2572
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries	0554 0547
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls), permanent ink, Measurement data documentation legible for up to 10 years	0554 0568
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug), For mains operation and battery recharging	0554 1084
Spare particle filter (10 off)	0554 0040
Transport case (plastic) for instrument, probes and accessories, For safe and orderly storage	0516 3250

Technical data	CO	O_2	Type K (NiCr-Ni)
Meas. range	0 to 7 Vol. %	0 to 21 Vol. %	-40 to +1000 °C
Accuracy ±1 digit	±40 ppm (0 to 0.08 Vol. %) ±5% of mv (0.08 to 0.2 Vol. %) ±10% of mv (0.2 to 7 Vol. %)	±0.2 Vol. %	±0.5 °C (-40 to +99.9 °C) ±0.5 % of mv (+100 to +1000 °C)
Resolution	0.001 Vol. %	0.1 Vol. %	0.1 °C
Oper. temp.	-5 to +45 °C	Storage temp.	-20 to +50 °C
Warranty	Meas. instr.: 2 years (excluding wear parts, e.g. meas. cells, ...); O_2 meas. cell: 1.5 years; CO meas. cell: 1 year		

Recommended Set: Basic Set testo 325-I CO_{high} [O_2] in case

Flue gas analyser with rechargeable batteries and calibration protocol	0632 3265
Softcase made of elastic plastic	0516 2572
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug), For mains operation and battery recharging	0554 1084
Flexible flue gas probe, specially for measuring motor emissions, Tmax +500°C, 3 m hose	0600 9640
Spare particle filter (10 off)	0554 0040
Transport case (plastic) for instrument, probes and accessories, For safe and orderly storage	0516 3250

Description	Illustration		Part no.
Sampling probe, 700 mm immersion depth, incl. cone, Tmax +1000°C, 3 m hose			0699 3451/3
Flexible flue gas probe, specially for measuring motor emissions, Tmax +500°C, 3 m hose		Max. immersion depth: 235 mm Flexible range: 160 mm	0600 9640

Description	Illustration	Meas. range	Accuracy	t_{99}	Part no.
Waterproof immersion/penetration probe		-60 to +400 °C	Class 2	7 s	0602 1292 **Conn.:** Fixed cable
Pipe wrap probe with Velcro strip, for temperature measurement on pipes with diameter up to max. 120 mm, Tmax +120°C		-50 to +120 °C	Class 1	90 s	0628 0020 **Conn.:** Fixed cable
Robust, affordable air probe		-60 to +400 °C	Class 2	25 s	0602 1792 **Conn.:** Fixed cable

testo 330 M-I / XL-I – Compact flue gas analyser for fast emission “checks”

How many ppm NO are there really?

Knut Hoyer, Head of Competence Center for Gas Analysis

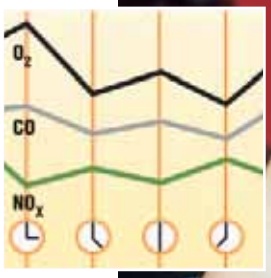
How sure can you really be that your analyser measures exactly what it should be measuring? Our exclusive sensors, developed especially for your respective applications, are unbeatable in terms of accuracy; confirmed also by independent test institutes such as TÜV.

The competence of our engineers is held in high esteem by expert groups and committees in Berlin and Brussels where they are involved in the developments of future guidelines in their capacity as representatives of industry.

A comprehensive exchange of knowledge and experience with official measurement institutes around the world (e.g. DKD for humidity, temperature) ensures that your Testo measuring instrument can hold up to any comparison of accuracy. Indeed, these efforts do have an objective: whoever uses Testo measurement engineering, can be assured that he is using the industrial standard.

Of further benefit to you: We know today about the guidelines and test specifications we will be faced with in the future.

Built-in flow and mass flow measurement (optional)



Long-term measurement lasting several hours

Softcase with magnetic holder

Measurement cells can be easily changed by user without test gas

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

testo 300 M-I / testo 300 XL-I

testo 300 M-I

Quick flue gas checks are of interest for all industrial burners. The testo 300 M-I/XLI flue gas analyser combines the accuracy and efficiency of large measuring systems. It is the ideal partner for tuning burners, emission checks and checking the atmosphere in the production process.

All in one instrument:

Basic version testo 300 M-I: analysis of °C, O_2, CO; calculation of CO_2, Lambda, efficiency

Optional: NO or SO_2; parallel differential pressure, velocity and mass flow measurement; calculation of flue gas dew point

testo 300 XL-I

Additional benefits of testo 300 M-I:

- Attachable printer (can also be used separately). The SoftCase protects the analyser from dirt and impact
- Larger memory for 100 complete measurements
- Memory upgrade for 400 complete measurements (optional)
- Differential temperature measurement
- Manual CO switch-off to continue measurement in presence of high CO concentrations
- Measurement of CO level in ambient air protects from CO poisoning (accessories)
- Detection of leaks in gas pipes protects from explosion (accessories)

- Large, illuminated display with clear user instructions and all of the important parameters at a glance
- Data memory for 20 measurements, documentation of readings via cordless infrared printer
- RS 232 interface to PC: data exchange with Testo Software; online measurements
- Mains or optional rechargeable battery operation with up to 4 hours' long-term measurements (not with compact gas drier)
- Easy to change rechargeable battery and measuring cell on site
- Ready to operate 1 minute after switch-on
- Gas units displayed in ppm or mg/m³
- Can be adjusted to measuring ranges specific to application using test gas on location

testo 300 M-I: Testo printer

testo 300 XL-I: Infrared printer can be attached or used separately

Burner tuning with testo 300 XL-I and mini gas preparation unit connected

testo 300 M-I	testo 300 XL-I
Flue gas analyser, incl. batteries and calibration protocol; for measuring O2, CO2, CO (with H2 compensation), NO (optional), SO2 (optional), absolute temperature, differential pressure (optional), velocity (optional), mass flow/volume flow (optional), flue gas dew point (optional), efficiency, flue gas loss, excess air	Flue gas analyser, incl. batteries and calibration protocol; for measuring O2, CO2, CO (with H2 compensation), NO (optional), SO2 (optional), temperature, differential pressure (optional), velocity (optional), mass flow, volume flow, flue gas dew point (optional), efficiency, flue gas loss, excess air
Part no. 0563 0311	**Part no. 0563 0301**

Good reasons for flue gas measurement

Flue gas duct

testo 300-I is portable (battery operated) which makes it easy to take measurements in hard to reach places in the flue gas duct. Flue gas dew point measurement is used for quick and easy checks on the filter and to locate ambient air leaks.

Emission checks

Flue gas velocity can be measured simultaneously when emissions are checked. For example, the position of a stationary sample probe can be checked. The testo 300-I can be field calibrated with cal gas to accurately measure the emission value.

Combustion chamber meas.

testo 300-I has very wide measuring ranges for the reliable detection of CO "nests" and to check for reduced atmosphere. The sampling probes can be used at up to 1800°C. In extreme conditions, the CO measuring cell in testo 300 XL-I can be switched out of the gas path.

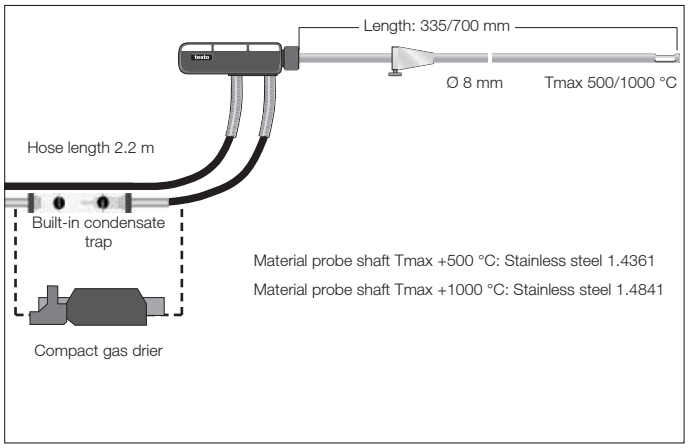
Burner adjustment

The testo 300-I calculates air ratio and efficiency to optimise burner operation. The pressure in the combustion chamber is measured parallel to the flue gas values. This is particularly important for multi-stage burners. Measurements lasting several hours are possible with the optional mini gas preparation unit.

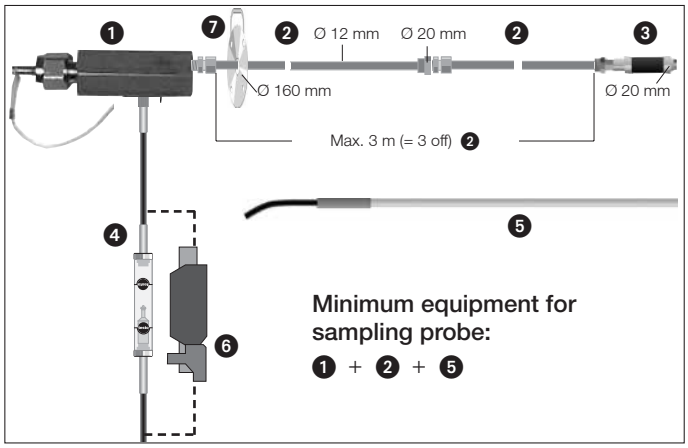
For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Suitable probes at a glance

Ordering data for standard probes



Ordering data for modular industrial probes



Standard probes 335 mm long		Part no.
Basic sampling probe, 335 mm long Up to +500°C		0600 7431
Options:	Hose, 5 m long (not for SO2 measurements)	0440 7440
	Special hose for SO2 measurements, 2.2m long, gas path in PTFE	0440 7439
	Outer shaft with filter, Tmax. +800 °C, 335 mm long, for dusty flue gases, 3 µm pore size, probe shaft stainless steel 1.4841	0440 7435
	Compact gas drier with automatic emptying function	0440 7433
	Mains unit to supply power to compact gas drier and testo 300M-I/XL-I, incl. adapter cable	0554 3376
Basic sampling probe, 335 mm long		0600 7431
Heat-proof probe pipe, 335 mm long, Tmax. +1000°C Up to +1000°C		0440 7437
Options:	Hose, 5 m long (not for SO2 measurements)	0440 7440
	Special hose for SO2 measurements, 2.2m long, gas path in PTFE	0440 7439
	Outer shaft with filter, Tmax. +800 °C, 335 mm long, for dusty flue gases, 3 µm pore size, probe shaft stainless steel 1.4841	0440 7435
	Compact gas drier with automatic emptying function	0440 7433
	Mains unit to supply power to compact gas drier and testo 300M-I/XL-I, incl. adapter cable	0554 3376

Standard probes 700 mm long		Part no.
Basic sampling probe, 700mm long Up to +500°C		0600 7432
Options:	Hose, 5m long (not for SO2 measurements)	0440 7441
	Special hose for SO2 measurements, 2.2m long, gas path in PTFE	0440 7439
	Outer shaft with filter, Tmax. +800°C, 700mm long, for dusty flue gases, 3 µm pore size, probe shaft: stainless steel 1.4841	0440 7436
	Compact gas drier with automatic emptying function	0440 7433
	Mains unit to supply power to compact gas drier and testo 300M-I/XL-I, incl. adapter cable	0554 3376
Basic sampling probe, 700mm long		0600 7432
Heat-proof probe pipe, 700mm long Up to +1000°C		0440 7438
Options:	Hose, 5m long (not for SO2 measurements)	0440 7441
	Special hose for SO2 measurements, 2.2m long, gas path in PTFE	0440 7439
	Outer shaft with filter, Tmax. +800°C, 700mm long, for dusty flue gases, 3 µm pore size, probe shaft: stainless steel 1.4841	0440 7436
	Compact gas drier with automatic emptying function	0440 7433
	Mains unit to supply power to compact gas drier and testo 300M-I/XL-I, incl. adapter cable	0554 3376

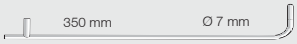
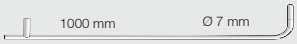
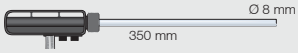
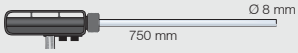
Industrial probes		Part no.
1 Adapter, non-heated		0600 7911
2 Extension pipe to +600 °C, stainless steel 1.4571		0600 7802
Extension pipe to +1200 °C, Inconel 625		0600 7804
Non-heated sampling pipe to +600 °C, stainless steel 1.4571		0600 7801
Non-heated sampling pipe to +1200 °C, Inconel 625		0600 7803
Non-heated sampling pipe to +1800 °C, Al-Oxide		0600 7805
3 Preliminary filter for dusty flue gases, ceramic Filter fineness 20 µm, dust: 20 g/m³, can be screwed onto extension pipes, not onto sampling pipes		0554 0710
4 Sampling hose, 2.2 m long		0554 3378
Sampling hose, 4m long		0554 3379
5 Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 1.2 m long	The length depends on the number of sampling and extension pipes used	0430 0065
Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 2.2 m long		0430 0066
Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 3.2 m long		0430 0067
6 Compact gas drier with automatic emptying function, To protect from condensate and for accurate SO2 measurements		0440 7433
Mains unit to supply power to compact gas drier and testo 300M-I/XL-I, incl. adapter cable		0554 3376
7 Mounting flange, stainless steel 1.4571		0554 0760

For testo 300 XL-I only	Illustration	Meas. range	t_{90}	Other features	Part no.
Gas leak detection probe to detect leaks in gas heating systems		0 to +10000 ppm CH_4	2 s	1st alarm limit: 200 ppm CH4 2nd alarm limit: 10,000 ppm CH4 Alarm: optical display (LED) and audible signal (buzzer) triggered if alarm limit is exceeded	0632 1246
Ambient CO probe to measure CO level in ambient air		0 to +500 ppm CO	35 s		0632 1247

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Suitable probes at a glance / Technical data

For testo 300 M-I and 300 XL-I	Illustration	Meas. range	Accuracy	t_{99}	Conn.	Part no.
Mini ambient air probe, Tmax +80°C, for separate ambient air temperature measurement		0 to +80 °C				0600 3692
Pipe wrap probe for pipes with diameter of up to 2", for flow/return temp. meas. in hydronic systems		-60 to +130 °C	Class 2	5 s	Fixed cable	0600 4593
Spare meas. head for pipe wrap probe		-60 to +130 °C	Class 2	5 s		0602 0092
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C		-200 to +300 °C	Class 2	3 s	Plug-in head. connection cable 0430 0143 or 0430 0145 required	0604 0194

Pitot tubes for flow measurement	Illustration	Meas. range	Probe type	Part no.
Pitot tube, 350 mm long, stainless steel, measures velocity speed		Oper. temp. 0 to +600 °C		0635 2145
Pitot tube, 1000 mm long, stainless steel, measures velocity speed		Oper. temp. 0 to +600 °C		0635 2345
Pitot tube, stainless steel, 350 mm long, measures velocity with temperature measurement, 3 x hoses (5 m long) and heat protection plate		-40 to +1000 °C	Type K (NiCr-Ni)	0635 2041
Pitot tube, stainless steel, 750 mm long, measures velocity with temperature measurement, 3x hoses (5 m long) and heat protection plate		-40 to +1000 °C	Type K (NiCr-Ni)	0635 2042

Accessories Ordering data	Part no.
Hose connection set for differential pressure and velocity measurement, 2 silicone hoses à 2.5 m, 1 silicone hose 0.3 m, Ø 4 and 6 mm adapter	0554 0316
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument, PUR coating material	0430 0145

Technical data for both testo 300 M-I and testo 300 XL-I analysers

Parameters	Meas. range	Accuracy	Resolution	Reaction time	Measurement procedure
O_2	0 to +25 Vol. % O_2	±0.8% of fsv (0 to +25 Vol. % O_2)	0.1 Vol. % O_2	t_{95} 20 s	Electrochemical measurement cell
CO_2	0 to CO_2 max Vol. % CO_2		0.1 Vol. % CO_2	t_{25} 20 s	Calculated from O_2
CO (with H_2 compensation)	0 to +10000 ppm CO	±5% of mv (+200.1 to +10000 ppm CO) ±10 ppm CO (0 to +200 ppm CO)[2]	1 ppm CO	t_{90} 40 s	Electrochemical measurement cell
NO (optional)[1]	0 to +3000 ppm NO	±5% of mv (+100.1 to +3000 ppm NO) ±5 ppm NO (0 to +100 ppm NO)[2]	1 ppm NO	t_{90} 40 s	Electrochemical measurement cell
SO_2 (optional)[1]	0 to +5000 ppm SO_2	±5% of mv (+200.1 to +5000 ppm SO_2) ±10 ppm SO_2 (0 to +200 ppm SO_2)[2,3]	1 ppm SO_2	t_{90} 40 s	Electrochemical measurement cell
Temperature	-40 to +1200 °C	±0.5% of mv (+101 to +1200 °C) ±0.5 °C (0 to +100 °C)	0.1 °C (0 to +1000 °C) 1 °C (+1001 to +1200 °C)	See probe data	Thermocouple Type K NiCr-Ni to DIN
Differential pressure (optional)	-80 to +80 hPa	±0.5% of mv (+20.1 to +80 hPa) ±0.1 hPa (0 to +20 hPa)	0.01 hPa	t_{95} 2 s	DMS sensor
Flow, mass flow, volume flow measurement (optional)	0 to +40 m/s	See differential pressure	0.1 m/s	t_{95} 2 s	Calculation from differential pressure (Pitot tube), temperature, gas density and gas concentration
Flue gas dewpoint (optional)[4]	0 to +99.9 °C td		0.1 °C td	20 s	Calculation from O_2, temperature and fuel
Efficiency	0 to +120 %		0.1 %	20 s	Calculation from O_2, temperature and fuel
Flue gas loss	-20 to +99.9 % qA		0.1 % qA	20 s	Calculation from O_2, temperature and fuel
λ Excess air	+1 to +20		0.01	20 s	Calculation from O_2, temperature and fuel

[1] NO and SO_2 measurement cells cannot be used together
[2] When adjusting to application range with test gas
[3] A gas preparation unit must be used to avoid absorption
[4] Errors due to gas cleaning unit (e.g. gas desulphurising unit) or withdrawal of humidity

Dimensions	250 x 85 x 65 mm	Material/Housing	ABS
Weight	700 g	Battery type	4 AA batteries
Storage temp.	-20 to +50 °C	Voltage	115/230 V / 50/60 Hz
Oper. temp.	+4 to +45 °C		

Additional technical data for testo 300 M-I/XL-I:
Memory: 20 data blocks (testo 300 M-I)
Memory: 100 data blocks (testo 300 XL-I)
Flow of built-in pump: approx. 0.8 l/min
Max. positive pressure at flue gas inlet: 30 hPa (300 mm water column)
Max. negative pressure at flue gas inlet: 90 hPa (900 mm water column)
Display: Graphics display 128 x 100 pixels
Power supply: Via plug-in mains unit, batteries or exchangeable rech. batteries
No. of measuring cells: max. 3 (O2, CO standard, NO or SO2 optional)
Warranty for testo 300 M-I and testo 300 XL-I: Analysers: 2 years (excluding working parts e.g. measuring cells)
CO/NO/SO2 measuring cell: 1 year
O2 measuring cell: 1 1/2 years

Additional technical data only for testo 300 XL-I

CO ambient measurement (with CO probe)
Measuring range: 0 to 500 ppm
Accuracy: ±5 ppm (0 to 100 ppm)
±5 % of reading (greater than 100 ppm)
Resolution: 1 ppm
Reaction time t90: approx. 35 s
Gas leak measurement for combustible gases
(with gas leak detection probe):
1st alarm limit: 200 ppm CH4
2nd alarm limit: 10000 ppm CH4
Signal: optical display (LED) for 1st and 2nd alarm limit, audible buzzer alarm
Reaction time t90: less than 2 s

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Accessories

Software

Economical software for fast and user-friendly management of saved measured data with convenient graphics and analysis functions such as tables, graphics as well as online measurement and barcode printout.

Part no. 0554 0310

Economical software, Windows® software for data management

Compact gas drier

During long-term and efficient SO_2 measurements, condensate must be prevented from getting into the analyser and causing damage. Therefore in order to protect the analyser, simply replace the condensate trap in the sampling hose with a mini gas preparation unit which cools the flue gas. Condensate develops and is automatically pumped out via the built-in hose pump.

Part no. 0440 7433

Compact gas drier with automatic emptying function

Case

Transport case (plastic) for measuring instrument, probes, For secure and orderly storage

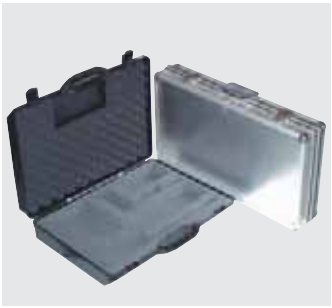
Transport case (plastic)

Part no. 0516 0300

Aluminium case for measuring instrument, probes (also for 700 mm flue gas probes), Pitot tube and accessories

Aluminium case

Part no. 0516 0305



Transport case (plastic) and spacious aluminium case

See Accessories for more cases

Attachable printer / Softcase for testo 300 XL-I

Practical infrared printer for attachment to testo 300 XL-I or for separate operation up to 2 m away. The SoftCase, made of flexible plastic, protects the printer from dirt and impact.

Attachable printer

Part no. 0554 0570

SoftCase

Part no. 0516 0411

Attachable, infrared thermal printer with particle/impact protection (for testo 300 XL-I)

Printer and Accessories	Part no.
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries, For printout of reading on site	0554 0547
Spare thermal paper for printer (6 rolls)	0554 0569
Recharger for printer (with 4 standard rech. batteries), Rechargeable batteries are recharged externally	0554 0110
Additional Accessories and Spare Parts	**Part no.**
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug), For mains operation and battery recharging	0554 1084
Rechargeable battery set for instrument (4 rechargeables 2.4V/700mAh), Selected for quick recharging in instrument	0554 0196
NO measuring cell, Built-in in flue gas analyser	0440 3922
NO measuring cell (upgrade), For subsequent installation in flue gas analyser	0554 3922
SO2 measuring cell, Integrated in flue gas analyser	0440 3923
SO2 measuring cell (upgrade), For subsequent installation in the testo 300 l analyser	0554 3923
Integrated velocity/differential pressure measurement (not upgradable), Including calculation of volume flow, mass flow	0440 0348
Integrated dew point calculation	0450 0301
Car charging adapter, ready to measure following recharging in car, Battery is recharged while travelling in car	0554 0424
Hose connection set for differential pressure and velocity measurement, 2 silicone hoses à 2.5 m, 1 silicone hose 0.3 m, Ø 4 and 6 mm adapter	0554 0316
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Accessories

Transport and Protection	Part no.
SoftCase (protects instrument from dirt and impact) made of elastic plastic, with carrier strap and magnetic plate	0516 0301
Transport case (plastic) for measuring instrument, probes, For secure and orderly storage	0516 0300
Aluminium case for measuring instrument, probes (also for 700 mm flue gas probes), Pitot tube and accessories, Contents can be clearly arranged by placing probe in lid	0516 0305
System case for analyser, probes and accessories	0516 0310
Universal system case without sections, can be attached to system case 0516 0310, For easy storage of analyser and additional accessories	0516 0331
PC Software and Accessories	**Part no.**
Economical software, Windows® software for data management, With convenient analysis and graphics function, online measurement and barcode printout	0554 0310
RS232 cable, Connects instrument to PC (1.8 m) for data transfer	0409 0178
Ordering data/Gas drier	**Part no.**
Compact gas drier with automatic emptying function, To protect from condensate and for accurate SO2 measurements	0440 7433
Mains unit to supply power to compact gas drier and testo 300M-I/XL-I, incl. adapter cable	0554 3376
Spare particle filter for compact gas drier (5 off)	0554 3370
Accessories Ordering Data for testo 330 XL-I only	**Part no.**
Memory extension to 400 data blocks, for saving the readings of up to 400 complete systems in testo 300 XL-I	0440 0122
Attachable printer (securely attached) including 1 roll of thermal paper and batteries, Quickly prints readings on location	0554 0570
SoftCase for attachable printer (protects printer from dirt/impact), Protects from impact and falls	0516 0411
Calibration Certificates	**Part no.**
ISO calibration certificate/Flue gas, Calibration points 2.5% O2; 100 and 1000 ppm CO; 800 ppm NO; 80 ppm NO2; 1000 ppm SO2	0520 0003
ISO calibration certificate/Velocity, Hot wire, vane anemometer, Pitot tube; calibration points 5; 10; 15; 20 m/s	0520 0034
DKD calibration certificate/Velocity, Hot wire, vane anemometer, Pitot tube; calibration points 2; 5; 10; 15; 20 m/s	0520 0204

Recommended Set: testo 300 M-I, The affordable basic set

Flue gas analyser, incl. batteries and calibration protocol; for measuring O2, CO2, CO (with H2 compensation), NO (optional), SO2 (optional), absolute temperature, differential pressure (optional), velocity (optional), mass flow/volume flow (optional), flue gas dew point (optional), efficiency, flue gas loss, excess air	0563 0311
Basic sampling probe, 335 mm long	0600 7431
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug), For mains operation and battery recharging	0554 1084

Recommended Set: testo 300 M-I, Professional set for fast emission measurement

Flue gas analyser, incl. batteries and calibration protocol; for measuring O2, CO2, CO (with H2 compensation), NO (optional), SO2 (optional), absolute temperature, differential pressure (optional), velocity (optional), mass flow/volume flow (optional), flue gas dew point (optional), efficiency, flue gas loss, excess air	0563 0311
Integrated velocity/differential pressure measurement (not upgradable), Including calculation of volume flow, mass flow	0440 0348
NO measuring cell, Built-in in flue gas analyser	0440 3922
Rechargeable battery set for instrument (4 rechargeables 2.4V/700mAh), Selected for quick recharging in instrument	0554 0196
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug), For mains operation and battery recharging	0554 1084
Basic sampling probe, 335 mm long	0600 7431
Pitot tube, stainless steel, 350 mm long, measures velocity with temperature measurement, 3 x hoses (5 m long) and heat protection plate	0635 2041
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries, For printout of reading on site	0554 0547
Transport case (plastic) for measuring instrument, probes, For secure and orderly storage	0516 0300

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Good advice IS possible!

Axel Rieple, Head Sales Manager Germany

Highly qualified personnel is needed to provide it. Understanding, a little creativity, time to listen and accessibility when the matter is urgent are also necessary.

Our qualified personnel would be delighted to answer your questions. They are there when you need them. Good to know when the situation requires.

All of the above elements ensure that we can provide you with the highly qualified advice which is our standard.

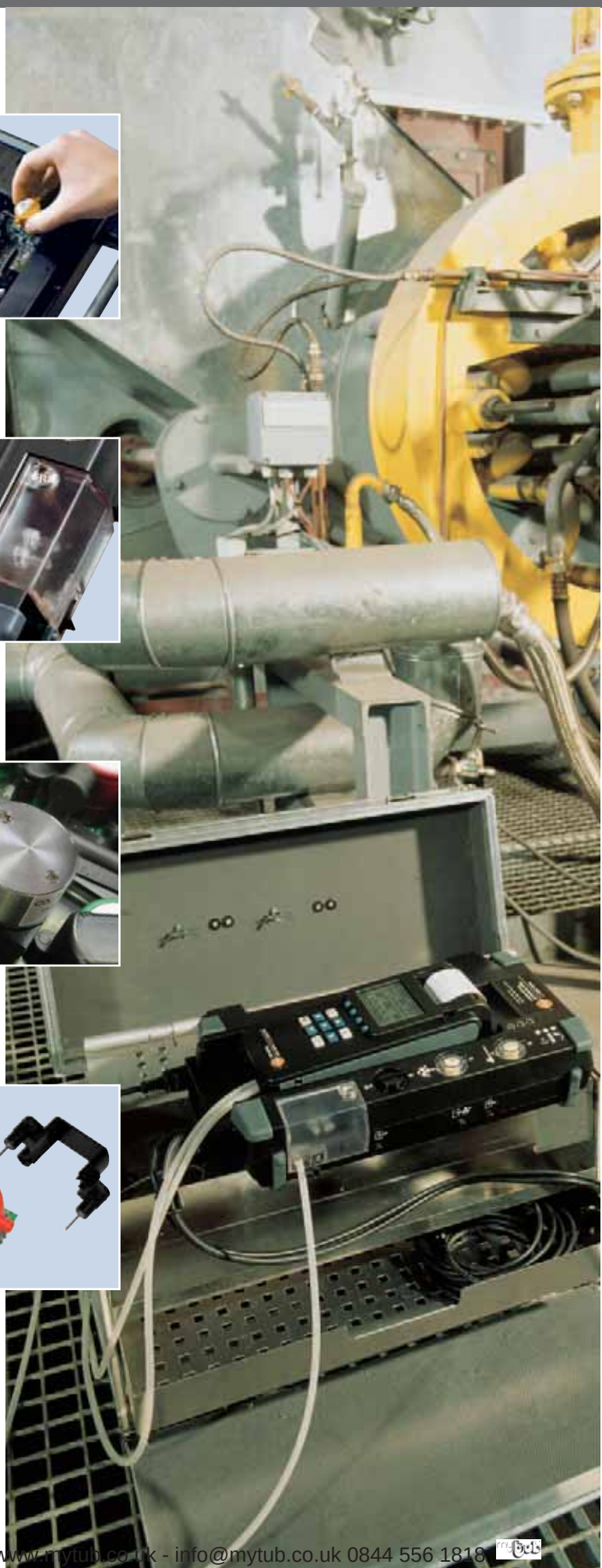
Our experience has shown that it is needed and appreciated. Qualified advice provides you with the assurance you need to make the right decisions, particularly in the case of complicated measurement tasks.

Fast-action and user-friendly measurement cell exchange by the user on site

Condensate trap – Integrated Peltier gas preparation with hose pump for condensate disposal for long-term measurement lasting several hours

Infrared(NDIR) measurement module for direct CO_2 measurement

Measurement cell heating element – Protects from damage by condensate and increases sensor reaction times at low ambient temperatures



For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Flexible flue gas analysis system testo 350 M/XL

testo 350

testo 350 is a flexible portable measuring system. The measuring system basically consists of a control unit, an analyser box and a flue gas probe.

The detachable **control unit** can control the measuring system and read out data. Additionally, it can also be used as a separate hand-held instrument for measuring differential pressure (built-in) and also for temperature, humidity, flow etc. thanks to its additional probe socket. The readings are printed on the built-in printer.

The **analyser box** is the "heart" of the measuring system and is available in two different versions:

- Basic design testo 350 M
- Advanced design testo 350 XL.

testo 350 M can be equipped with **up to maximum 4 measurement modules**. Measurement modules are equipped for O_2 and CO by default. In addition, measurement modules for NO (optional), NO_2 (optional), SO_2 (optional) or CO_2 can be retrofitted with the infrared measurement module (optional). Standard parameters such as Δ, qA, etc. are calculated while temperature and differential pressure are also measured.

The more advanced **testo 350 XL** can be fitted with **up to maximum 6 measurement modules**. Measurement modules for O_2, CO, NO and NO_2 are fitted as standard. In addition, measurement modules for HC (optional), SO_2 (optional), H_2S (optional) or CO_2 can be selected via the infrared measurement module (optional). In addition to the features of the M version, the testo 350 XL analyser box also has a fresh air valve for long-term measurements lasting several hours.

Both versions of the analyser boxes include a built-in rechargeable battery (for battery operation, also with gas preparation unit of up to 2-3h), data memory (250,000 readings), Testo data bus adapter as well as a complete Peltier gas preparation unit with hose pump for controlled condensate disposal.

- Measuring range extension (optional) for CO with selectable dilution factors
- Extremely high accuracies in the lower range for CO and NO on account of special gas sensors
- Use as single instrument – user-friendly operation on account of low weight (approx. 4.5 kg) and compact size facilitates applications at difficult-to-access points
- Use of several analyser boxes in a bus system – enables simultaneous measurement of several parameters at different measurement locations
- Infrared measurement module with wide measurement range – for accurate CO_2 direct measurement independent of fuel

testo 350, control unit

Control unit displays measurement data and controls the measuring system, incl. built-in printer, pressure measurement 80/200 hPa, 1 user defined probe socket, programmable measurements and memory space for 250,000 readings, connection for Testo data bus, incl. terminal plug

Part no. 0563 0353

testo 350 M analyser box

testo 350 M analyser box, with O2, CO (with switch-off and rinse functions), gas preparation, diff. pressure meas., 2 temperature probe sockets, can be upgraded to max. 4 measurement modules (with NO/NO_2/SO_2/CO_2 NDIR), Testo data bus connection, built-in rech. batt., data memory

Part no. 0563 0351

testo 350 XL analyser box

testo 350 XL analyser box, equipped with O_2, CO (with switch-off and rinse function), NO, NO_2, differential pressure measurement, 2 temperature probe sockets, gas preparation, Testo data bus adapter, automatic fresh air rinse with valve, built-in rechargeable battery, data memory, can be upgraded to max. 6 measurement modules (with H_2S, HC, SO_2, CO_2 NDIR)

Part no. 0563 0350

Control unit for display and control, incl. printer, touchscreen (optional)

Analyser box with built-in measurement modules and measurement engineering

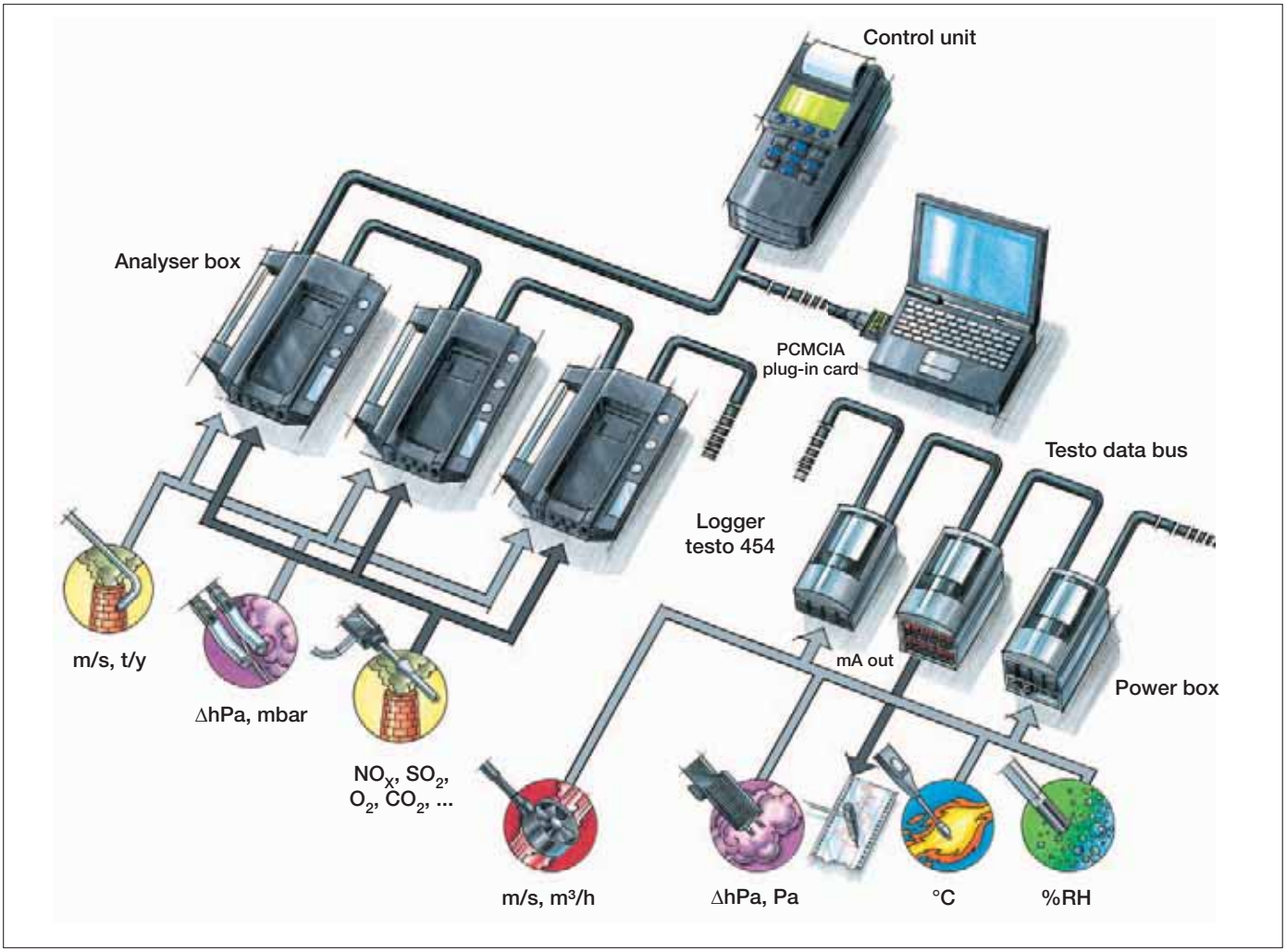
User-friendly and convenient measurement on motors for monitoring and adjustment on site

Differences between analyser boxes at a glance

		testo 350 M	testo 350 XL
Maximum number of measurement modules		4	6
O_2	0 – 25 vol.%	■	■
CO (H2)	0 – 10,000 ppm	■	■
CO_{low} (H2)	0 – 500 ppm	○	○
NO	0 – 3.000 ppm (0.1 ppm resolution)	○	■
NO_{low}	0 – 300 ppm (0.1 ppm resolution)	○	○
NO_2	0 – 500 ppm (0.1 ppm resolution)	○	■
SO_2	0 – 5,000 ppm	○	○
HC	0 – 4 vol. % (0.001 % resolution)	–	○
H_2S	0 – 300 ppm (0.1 ppm resolution)	–	○
CO_2 (NDIR)	0 – 50 Vol. %	○	○
Built-in gas preparation unit		■	■
Automatic fresh air rinse with valve		○	■
Measuring range extension for CO meas. module (with selectable dilution factors)		○	○
CO measurement module switch-off and rinse (automatic overload protection)		■	■
Trigger inlet – to start and stop measurement externally		–	○
Differential pressure measurement (-40 to +40 hPa)		■	■
Built-in rechargeable battery		■	■
2 temperature probe sockets (Type K NiCr-Ni)		■	■
Data memory (250,000 readings)		■	■
Testo data bus adapter		■	■

■ = Standard ○ = Upgrade optional – = Not possible

Measurement system



The testo 350 M/XL system concept

For many applications in the industrial sector, an analyser with additional features is needed to fulfill the following requirements:

- Simultaneous gas and process analysis at different measurement points without a time-consuming measurement point changeover switch
- Option of connecting additional parameters such as °C; %RH; mA/mV etc.
- Long-term measurements in order to be able to assess different system cycles
- Flexibility of system in order to be able to react to the different requirements of the different systems. The **testo 350 M/XL** measurement system fulfills these requirements. Several analyser boxes, equipped differently or up 10 loggers are connected together via the Testo data bus, over distances up to max. 1000m.

If several analyser boxes, for example, are connected to the Testo data bus, they can be controlled, read out or programmed via the following:

- **One analyser box after the other** via the Control Unit, for example, or via the PC and an RS 232 cable

Alternatively:

- **Several analyser boxes simultaneously** via the PC and a PCMCIA insert card.

Parameters

Parameters which can be measured using **testo 350 M/XL**:

a) testo 350 M/XL analyser box

- Flue gas parameters such as O_2, CO, NO_x, SO_2, H_2S, HC, CO_2(IR)
- Differential pressure, e.g. for combustion pressure measurement
- Flow measurement with Pitot tube

The analyser boxes are positioned at the respective measurement point. They are operated either connected to each other via the Testo data bus or as a separate data-logger without being connected. Separate measurement programs are saved in the analyser box e.g. measurement cycles, fresh air phases etc. **testo 350 M** and **XL** and also boxes equipped differently can be used. Likewise loggers and analog outputs (6 ducts, 4-20mA) can be connected in this way.

b) Logger box

- Temperature, e.g. of surfaces, liquids
- Humidity, e.g. in suction ducts or ambient air
- Pressure, e.g. with differential pressure and high pressure probes
- Flow and volume flow, e.g. with vanes, hot wire probes
- rpm etc.

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Standard gas sampling probes

The probe has to endure extreme conditions when measuring flue gases:

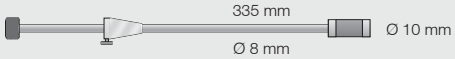
- High temperatures
- Corrosive condensate
- Dust
- Mechanical loads.

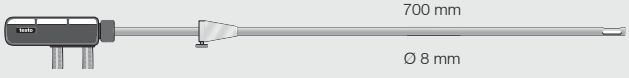
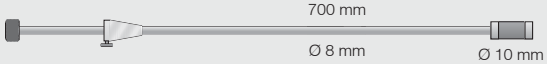
The selection of the right probe is critical for accurate and consistent measurements. Because the sampling locations are often different, it's beneficial to have a standard probe designed for a wide variety of applications. In addition to the standard sampling probes, Testo also offers probe systems for specific industrial applications.

Standard gas sampling probes

The affordable standard sampling probe is available in lengths of 335 mm and 700 mm and for different temperature ranges. The outer shaft with a sintered filter is used for dusty flue gases. The hose has a standard length of 2.2 m (5 m, optional).

Standard gas sampling probes, available in lengths of 335 mm and 700 mm

Standard flue gas sampling probe, 335 mm long	Part no.
Basic flue gas probe, 335 mm immersion depth incl. probe stop, NiCr-Ni (TI) T/C Tmax 500°C, probe shaft: stainless steel 1.4361, 2.2 m hose, robust plug-in coupling	0600 7451
Options: Outer shaft with filter, Tmax. +800 °C, 335 mm long, for dusty flue gases, 3 µm pore size, probe shaft stainless steel 1.4841 	0440 7435
or: Heat-resistant probe shaft (material: stainless steel 1.4841) with heat-resistant plate, 335 mm long, Tmax + 1000 °C	0440 7437
Hose, 5 m long	0440 7443
Special hose for NO2/SO2 measurements, 2.2 m long*	0440 7442
Special hose for NO2/SO2 measurements, 5 m long*	0440 7445

Standard gas sampling probe, 700 mm long	Part no.
Basic flue gas probe, 700 mm immersion depth incl. probe stop, NiCr-Ni (TI) T/C Tmax 500°C, probe shaft: stainless steel 1.4361, 2.2 m hose, robust plug-in coupling 	0600 7452
Options: Outer shaft with filter, Tmax. +800°C, 700mm long, for dusty flue gases, 3 µm pore size, probe shaft: stainless steel 1.4841 	0440 7436
or: Heat-resistant probe shaft (material: stainless steel 1.4841) with heat-resistant plate, 700 mm long, Tmax +1000 °C	0440 7438
Hose, 5 m long	0440 7444
Special hose for NO2/SO2 measurements, 2.2 m long*	0440 7442
Special hose for NO2/SO2 measurements, 5 m long*	0440 7446

* Use outer shaft with filter for dusty flue gases.

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Industrial gas sampling probes – Modular system

We are dealing here with a modular, portable probe system. The basis for the system is the heated handle or the non-heated adapter to which the sampling hoses are connected.

A thermocouple, which is connected to the testo 350 M/XL, is used for simultaneous temperature measurements. The probe can be adapted for larger flue gas ducts using extension pipes (up to max. 3m). A preliminary filter is screwed on to protect the probe in dusty gases.

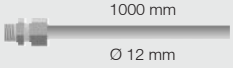
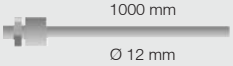
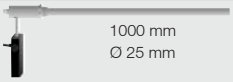
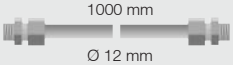
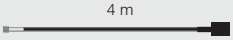
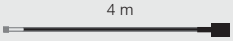
The heated probe is used for moist flue gases to eliminate absorption of NO2 and SO2. The probes are attached to the flue gas duct using the mounting flange.

The heated probe is used for moist flue gases to eliminate incorrect readings caused by the absorption of NO2 and SO2. The probes are attached quickly and securely to the flue gas duct using the mounting flange.

Non-heated probe pipes are used for flue gases up to 1200 °C. The non-heated adapter can be used instead of a heated handle to measure O_2, CO and NO or dry flue gases.

Ceramic sampling pipes which can withstand the enormous thermal load are used for measurements at more than 1200 °C.

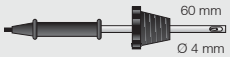
Industrial gas sampling probes, a modular probe system individual for every application

Industrial gas sampling probes – Modular system			Part no.
Heated handle, power supply 115 to 230 V, 50/60 Hz		Power consumption: 200 watts; Temp. gas path: > 180 °C; Ready to operate: after approx. 20 min; Length of mains cable: 3 m; Protection class: IP54; Ambient temp.: -20 to +50 °C; gas inlet: G1/4"; gas outlet: M 10x1 outer thread; weight: 1.7 kg	0600 7920
Adapter, non-heated		Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inlet: G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0,4 kg	0600 7911
Non-heated sampling pipe to +600 °C, stainless steel 1.4571 Non-heated sampling pipe to +1200 °C, Inconel 625		Connection: G1/4"; Weight: 0.4 kg	0600 7801 0600 7803
Non-heated sampling pipe to +1800 °C, Al-Oxide		Connection: G1/4"; Weight: 0.4 kg	0600 7805
Heated sampling pipe, power supply 230 V / 50 Hz, stainless steel 1.4571 Heated sampling pipe, power supply 115 V / 60 Hz, stainless steel 1.4571		Heating: > +180 °C; power consumption: 650 watts; Connection: electr. connection to heated handle, connection adapter with thread connection/screw socket G1/4"; Max. flue gas temp.: +600 °C	0600 7820 0600 7821
Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625		Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg	0600 7802 0600 7804
Preliminary filter for dusty flue gases, ceramic		Dust load: max. 20 g / m3; filter fineness: 20 µm; Temperature: max. 1000 °C; Material: ceramic; Connection: G1/4" thread nipple; Weight: 0.2 kg	0554 0710
Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 1.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 2.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 3.2 m long		Connection: To analyser via 4 m connection cable with 8 pin plug; Weight: 0.15 kg. The length depends on the number of sampling and extension pipes used.	0430 0065 0430 0066 0430 0067
Standard sampling hose for connection to the testo 350 M/XL analyser, 1 x Viton hose with robust plug		Weight: 0.4 kg	0554 3382
Special sampling hose for accurate NO2/SO2 measurements, for connection to testo 350 M/XL, patented 1x hose with robust plug		Hose material inside: PFFE hose with 2 mm inner diameter (lowest absorption, self-cleaning effect); Material outside: rubber; length: 4.0 m; Weight: 0.45 kg	0554 3384
Mounting flange, stainless steel 1.4571, adjustable quick-action fitting suitable for all sampling/extension pipes	Ø 160 mm		0554 0760

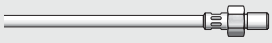
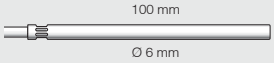
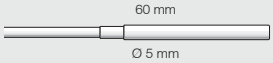
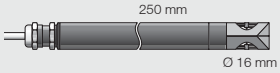
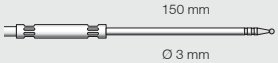
Cases	Part no.
Transport case for industrial probes, aluminium, Space for: handle, probes, flange and accessories	0516 7900

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Suitable probes for control unit or testo 454 logger

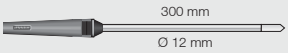
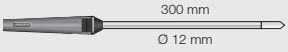
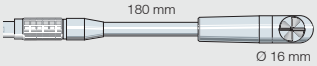
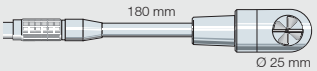
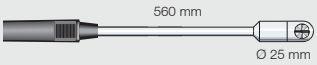
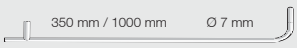
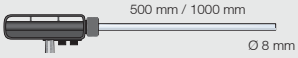
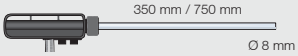
Temperature probes	Illustration	Meas. range	Accuracy	t_{99}	Conn.	Part no.
Ambient air probe, 300 mm immersion depth, with probe stop for separate measurement of ambient air temperature (e.g. systems with outside primary air intakes)		0 to +100 °C		30 s		0600 9791
Mini ambient air probe, 60 mm immersion depth, w. probe stop, magnetic clip, Tmax +100°C, for dual wall clearance temp. meas. in systems w. outside primary air intakes		0 to +100 °C		30 s		0600 9797
Mini ambient air probe, Tmax +80°C, for separate ambient air temperature measurement		0 to +80 °C				0600 3692
Pipe wrap probe for pipes with diameter of up to 2", for flow/return temp. meas. in hydronic systems		-60 to +130 °C	Class 2	5 s	Fixed cable	0600 4593
Spare meas. head for pipe wrap probe						0602 0092
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C		-200 to +300 °C	Class 2	3 s	Plug-in head. connection cable 0430 0143 or 0430 0145 required	0604 0194
Adapter to connect NiCr-Ni thermocouples and probes with open wire ends					Fixed cable	0600 1693

More probes	Illustration	Meas. range	t_{90}	Other features	Part no.
Gas leak detection probe to detect leaks in gas heating systems		0 to +10000 ppm CH_4	2 s	1st alarm limit: 200 ppm CH4 2nd alarm limit: 10,000 ppm CH4 Alarm: optical display (LED) and audible signal (buzzer) triggered if alarm limit is exceeded	0632 1246
Ambient CO probe to measure CO level in ambient air		0 to +500 ppm CO	35 s		0632 1247
CO2 probe measures indoor air quality and monitors the workplace. With plug-in head, connection cable 0430 0143 or 0430 0145 required		0 to +1 Vol. % CO_2 0 to +10000 ppm CO_2		±(50 ppm CO_2 ±2% of mv)(0 to +5000 ppm CO_2) ±(100 ppm CO_2 ±3% of mv)(+5001 to +10000 ppm CO_2)	0632 1240
Current/voltage cable (±1 V, ±10 V, 20 mA)		0 to +1000 mV 0 to +10 V 0 to +20 mA		±1 mV (0 to +1000 mV) ±0.01 V (0 to +10 V) ±0.04 mA (0 to +20 mA)	0554 0007
Mechanical rpm probe with plug-in head Included 2 probe tips Ø 8 and Ø 12 mm 1 hollow cone Ø 8 mm 1 surface speed disc Ø 19 mm to measure rotational speed: rpm = rotational speed in mm/s		20 to 20000 rpm		Plug-in head. connection cable 0430 0143 or 0430 0145 required	0640 0340

Stationary probes	Illustration	Meas. range	Accuracy	t_{99}	Part no.
Robust, quick-action surface probe, NiCr-Ni, with M14 x 1.5 thread, incl. 2 nuts for mounting, 2 m cable (silicone)		-50 to +180 °C	Class 2	3 s	0628 6021
Universal probe, NiCr-Ni, for measurements in liquids and gases, 2 m cable (PVC), IP 42 connection socket		-200 to +1100 °C	Class 1	2 s	0628 6004
Screw-in probe, Pt100, for measurements at hard-to-access points, M 6 thread, 2 m cable (PVC)		-10 to +80 °C	Class A	70 s	0628 6014
Immersion probe, Pt100, for measurements in water and unclean environments, 2 m cable (silicone)		-50 to +180 °C	Class A	70 s	0628 6003
Immersion probe, Pt100, for measurements in corrosive substances, 2 m cable (PTFE), IP 67		-50 to +260 °C	Class A	50 s	0628 6008
Resistance thermometer, Pt100, for surface measurement, 2 m cable (silicone), IP 65		-30 to +180 °C	Class A	150 s	0628 6016
Universal probe, Pt100, for measurements in liquids and gases, 2m cable (PVC), IP 42		-50 to +400 °C	Class A	15 s	0628 6044
Vane probe, Ø 16 mm, for stationary assembly, 3 m cable (PVC)		+0.4 to +60 m/s	±(0.2 m/s ±1% of mv) (+0.4 to +60 m/s)		0628 0036
Robust hot bulb probe, Ø 3 mm, for measurements in the lower velocity range, 2m cable (PVC)		0 to +10 m/s -20 to +70 °C	±(0.03 m/s ±5% of mv) (0 to +10 m/s)		0628 0035

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 18

Suitable probes for control unit and testo 454 logger

Humidity probes	Illustration	Meas. range	Accuracy	t_{90}	Part no.
Standard ambient air probe up to +70°C	Ø 12 mm	0 to +100 %RH -20 to +70 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	12 s	0636 9740 **Conn.:** Plug-in head. connection cable 0430 0143 or 0430 0145 required
Robust humidity probe e.g. for measuring equilibrium moisture or for measurements in exhaust ducts to +120°C	 300 mm Ø 12 mm	0 to +100 %RH -20 to +120 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (-10 to +50 °C) ±0.5 °C (remaining range)	30 s	0636 2140 **Conn.:** Plug-in head. connection cable 0430 0143 or 0430 0145 required
Robust high temperature/humidity probe up to +180°C	 300 mm Ø 12 mm	0 to +100 %RH -20 to +180 °C	±2 %RH (+2 to +98 %RH) ±0.4 °C (+0.1 to +50 °C) ±0.5 °C (remaining range)	30 s	0628 0021 **Conn.:** Plug-in head. connection cable 0430 0143 or 0430 0145 required
Velocity, pressure probes	**Illustration**	**Meas. range**	**Accuracy**		**Part no.**
Vane/temperature probe, Ø 16 mm, attachable to handle or telescopic handle	 180 mm Ø 16 mm	+0.4 to +60 m/s -30 to +140 °C	±(0.2 m/s ±1% of mv) (+0.4 to +60 m/s)		0635 9540
Vane/temperature probe, Ø 25 mm, can be attached to handle or telescopic handle	 180 mm Ø 25 mm	+0.4 to +40 m/s -30 to +140 °C	±(0.2 m/s ±1% of mv) (+0.4 to +40 m/s)		0635 9640
High temperature vane probe, Ø 25 mm, with handle for continuous measurements up to +350°C	 560 mm Ø 25 mm	+0.6 to +20 m/s -40 to +350 °C	±(0.3 m/s ±1% of fsv) (+0.6 to +20 m/s)		0635 6045
Precision pressure probe, 100 Pa, measures differential pressure and velocities (in connection with Pitot tube)		0 to +100 Pa	±(0.3 Pa ±0.5% of mv) (0 to +100 Pa)		0638 1345
Pressure probe, 10 hPa, measures differential pressure and velocities (in connection with Pitot tube)		0 to +10 hPa	±0.03 hPa (0 to +10 hPa)		0638 1445
Pressure probe, 100 hPa, measures differential pressure and velocities (in connection with Pitot tube)		0 to +100 hPa	±0.5% of mv (+20 to +100 hPa) ±0.1 hPa (0 to +20 hPa)		0638 1545
Pitot tube, 350 mm long, stainless steel, measures velocity speed [1] Pitot tube, 1000 mm long, stainless steel, measures velocity speed [1]	 350 mm / 1000 mm Ø 7 mm	Oper. temp. 0 to +600 °C			0635 2145 0635 2345
Pitot tube, stainless steel, 500 mm long, measures velocity speed with temperature measurement [2] Pitot tube, stainless steel, 1000 mm long, measures velocity speed with temperature measurement [2]	 500 mm / 1000 mm Ø 8 mm	-40 to +600 °C			0635 2140 0635 2240
Pitot tube, stainless steel, 350 mm long, measures velocity with temperature measurement, 3 x hoses (5 m long) and heat protection plate [2] Pitot tube, stainless steel, 750 mm long, measures velocity with temperature measurement, 3x hoses (5 m long) and heat protection plate [2]	 350 mm / 750 mm Ø 8 mm	-40 to +1000 °C			0635 2041 0635 2042

1) Direct connection to control unit or analyser box possible, please also order hose connection set 0554 0315
2) Direct connection to control unit or analyser box possible

Accessories for stationary probes	Part no.
Wall holder with screw-in connection for vane probe, Ø 16mm	0628 0037
Clamp screw connection (steel) with M 8x1 thread, to attach temperature probes with Ø 3mm	0400 6163
Clamp screw connection (steel) with G 1/4" thread, to attach temperature probes with Ø 6mm	0400 6166
Accessories for velocity probes, pressure probes	**Part no.**
Professional telescopic handle for plug-in vane probes, max. 1 m long, extension on request	0430 0941
Extension for telescopic handle, 2 m long, Please also order the 0409 0063 extension cable	0430 0942
Handle for plug-in vane probes	0430 3545
Magnetic holder for pressure probes	0554 0225
Hose connection set, incl. silicone hose and connection adapter, For separate gas pressure measurement	0554 0315
ISO calibration certificate/Pressure, 0.1 to 0.6 (% of fsv) 0 to 70 bar > 70 to 5000 bar	0520 0025
ISO calibration certificate/Velocity, Hot wire, vane anemometer, Pitot tube; calibration points 1; 2; 5; 10 m/s	0520 0004
ISO calibration certificate/Velocity, Hot wire, vane anemometer; calibration points 0.5; 0.8; 1; 1.5 m/s	0520 0024
ISO calibration certificate/Velocity, Hot wire, vane anemometer, Pitot tube; calibration points 5; 10; 15; 20 m/s	0520 0034

Accessories for temperature, humidity, CO2 probes	Part no.
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
Cable, 5 m long, connects probe with plug-in head to measuring instrument, PUR coating material	0430 0145
Extension cable, 5 m long, between plug-in head cable and instrument , PUR coating material	0409 0063
Telescopic handle, max. 1 m, for probe with plug-in head, Cable: 2.5 m long, PUR coating material	0430 0144
Control and humidity adjustment set 11.3%RH/75.3%RH incl. adapter for humidity probes	0554 0660
Telescopic handle, 340 - 800mm long	0430 9715
ISO calibration certificate/Temperature, Thermometers with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071
ISO calibration certificate/Humidity, Electronic hygrometers; calibration points 11.3%RH and 75.3%RH at +25°C	0520 0006
ISO calibration certificate/CO2, CO2 probes; calibration points 0; 1000; 5000 ppm	0520 0033

Accessories for testo 350

ComSoft 3, Operation and analysis software

ComSoft 3 software offers extensive options such as:

- Definition of measurement programs
- Tour plan
- Online measurement
- Analysis and graphics functions
- Analysis of measurement data
- Trend curve
- Documentation
- Filing

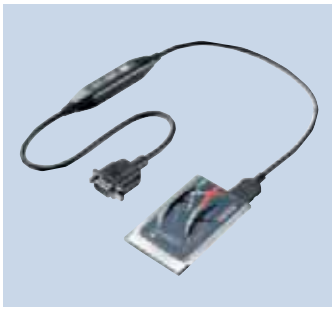
ComSoft 3 for data management

ComSoft 3 incl. PCMCIA insert card

For example, if several testo 350 M/XL analyser boxes are connected to the Testo databus, **several analyser boxes** can then be controlled and read out **simultaneously**.

ComSoft 3, Testo insert card PCMCIA incl. cable for Testo data bus, adapter and terminal plug

Part no. 0554 0590



Testo insert card PCMCIA incl. connection to Testo data bus cable

ComSoft 3 inkl. RS232

For example, if several testo 350 M/XL analyser boxes are connected to the Testo data bus **only one single analyser box** respectively can then be controlled and read out on the PC.

ComSoft 3 incl. RS 232 cable to connect PC and control unit

Part no. 0554 0841

RS 232 connection cable

Analog output box (mA out)

Analog output boxes can be looped into the data bus to output the measurement data as an analog signal (4 – 20 mA). Each box has 6 user-defined channels which can be scaled according to application.

Part no. 0554 0845

Analog output box for output on an analog recorder or for control purposes

Touchscreen (optional)

Touchscreen incl. pen for easy and fast operation and input

Part no. 0440 0559

Optional measurement module equipment

NO_2, SO_2 options for flexible instrument combinations, take into consideration when ordering your first testo 350 M/XL. Subsequent measurement module upgrades can be carried out by the user using upgrade modules.

CO_2 infrared measurement module

Part no. 0440 0417

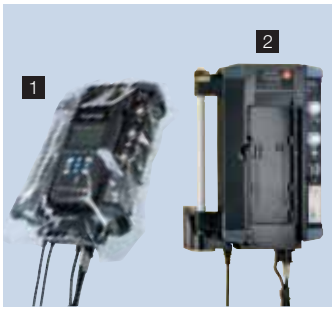
Protection hood and wall holder for analyser box

1 Protection hood protects from dirt and dust

Part no. 0554 0199

2 Wall holder for analyser box incl. heat protection plate, can be locked

Part no. 0554 0203



1 Protection hood
2 Wall holder

Cases

1 Transport case for analyser, probes and accessories

Part no. 0516 0351

2 System case (aluminium), for analyser, probes, incl. drawer for accessories

Part no. 0516 0352

1 Transport case
2 System case

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Measurement System and Practical Accessories

testo 350, control unit	Part no.
Control unit displays measurement data and controls the measuring system, incl. built-in printer, pressure measurement 80/200 hPa, 1 user defined probe socket, programmable measurements and memory space for 250,000 readings, connection for Testo data bus, incl. terminal plug	0563 0353
Touch screen with pen (available only with original order), For easy input of text and values	0440 0559
Spare thermal paper for printer (6 rolls)	0554 0569
Barcode reader to read in measurement locations, Quick and accurate allocation of reading to site	0554 0460
Barcode labels, self-adhesive (1200 off), for labelling site with barcode, printing via software	0554 0411
Adhesive pockets (50 off) for printout, paper barcode labels...	0554 0116
Testo rechargeable battery pack NiMH for control unit, logger	0515 0097
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug)	0554 1084
testo 350 M analyser box and equipment, upgradeable to max. 4 meas. modules	
testo 350 M analyser box, with O2, CO (with switch-off and rinse functions), gas preparation, diff. pressure meas., 2 temperature probe sockets, can be upgraded to max. 4 measurement modules (with NO/NO_2/SO_2/CO_2 NDIR), Testo data bus connection, built-in rech. batt., data memory	0563 0351
COlow measurement module, 0 to 500 ppm, highly accurate, instead of standard CO measurement module, built into analysis box	0440 3925
CO2 measurement module, 0 to 50 vol.%, infrared measurement principle, absolute pressure measurement, CO2 absorption filter with refill pack	0440 0417
NO measuring module, 0 to 3000 ppm, built into analyser box	0440 3935
NOlow measurement module, 0 to 300 ppm, highly accurate, built into analysis box	0440 3928
NO2 measuring module, built into analyser box	0440 3926
SO2 measurement module, built into analyser box	0440 3927
Fresh air valve for long-term measurement, built into analyser box	0440 0557
Measuring range extension for CO measurement module (dilution), built into analyser box, selectable dilution factors: 0, 2, 5, 10, 20, 40	0440 0555
testo 350 XL analyser box and equipment, upgradeable to max. 6 meas. modules	
testo 350 XL analyser box, equipped with O_2, CO (with switch-off and rinse function), NO, NO_2, differential pressure measurement, 2 temperature probe sockets, gas preparation, Testo data bus adapter, automatic fresh air rinse with valve, built-in rechargeable battery, data memory, can be upgraded to max. 6 measurement modules (with H_2S, HC, SO_2, CO_2 NDIR)	0563 0350
COlow measurement module, 0 to 500 ppm, highly accurate, instead of standard CO measurement module, built into analysis box	0440 3925
CO2 measurement module, 0 to 50 vol.%, infrared measurement principle, absolute pressure measurement, CO2 absorption filter with refill pack	0440 0417
NOlow measurement module, 0 to 300 ppm, highly accurate, instead of standard NO measurement module, built into analyser box	0440 3934
SO2 measurement module, built into analyser box	0440 3927
HC measurement module (nonburned hydrocarbons), built into analyser box	0440 3929
H2S measurement module, built into analyser box	0440 3930
Measuring range extension for CO measurement module (dilution), built into analyser box, selectable dilution factors: 0, 2, 5, 10, 20, 40	0440 0555
Event trigger socket, for starting and stopping measurement externally, built into analyser box	0440 3932

Transport case and accessories for analyser boxes	Part no.
Wall holder for analyser box incl. heat protection plate, can be locked	0554 0203
Protective cover for analyser box (can also be used with wall holder)	0554 0199
Carrying belt set for analyser box and control unit	0554 0434
Transport case for analyser, probes and accessories	0516 0351
System case (aluminium), with drawer for accessories, for transport and protection during measurement	0516 0352
Additional box for system case 0516 0352, can be snapped on	0516 0353
Transport case for industrial probes, aluminium; Space for: handle, probes, flange and accessories	0516 7900
Calculation of fuel-specific factors to accurately display calculated variables in deviating fuels (calculation for one fuel)	0991 0030
Spare particle filter, pack of 20	0554 3381
Hose set to convey flue gas from analyser box, 5 m long	0554 0451
Refill pack of filter pellets for CO2 absorption filter	0554 0369
ISO calibration certificate/Flue gas, Calibration points 2.5% O2; 100 and 1000 ppm CO; 800 ppm NO; 80 ppm NO2; 1000 ppm SO2	0520 0003

testo 454 logger and accessories	Part no.
Logger, measures and saves (max. 250,000 readings), incl. 4 user defined probe sockets, alarm output/event trigger socket, stand/wall holder	0577 4540
Alarm/trigger cable	0554 0012
Holding unit/Theft-proof with lock for logger wall holder	0554 1782
Power box, connected to control unit to increase operating life, For a battery-operated measuring system	0554 1045
Mains unit for power box (110/230 V; 50/60 Hz, 12 V, 3 A)	0554 1143
Analog output box, 6 channels, 4 to 20 mA, For output on an analog recorder or process control, (please also order mains unit 0554 1084)	0554 0845
Testo rechargeable battery pack NiMH for control unit, logger	0515 0097
Recharger for control unit or logger (with 4 standard rechargeable batteries), Rechargeable batteries are recharged externally	0554 0110
Power unit 230 V/ 8 V/ 1 A, for instrument (European plug), For separate use of control unit	0554 1084

Accessories for Testo data bus	Part no.
Mains unit (110/230 V; 50/60 Hz, 12 V, 3 A) supplies power to Testo data bus, When using the Testo plug-in card	0554 1145
Terminal plug for Testo data bus, For loggers and special lengths	0554 0119
Connection cable, 2 m, for Testo data bus	0449 0042
Connection cable, 5 m, for Testo data bus	0449 0043
Connection cable, 20 m, for Testo data bus	0449 0044

Additional cable lengths up to 1000 m on request

PC software	Part no.
ComSoft 3 for data management, incl. RS 232 connection cable, Incl. database, analysis and graphics function, data analysis, trend curve	0554 0841
Testo PCMCIA plug-in card incl. ComSoft 3 software, cable for Testo data bus, adapter and terminal plug	0554 0590
Electrical isolation for RS232 (connects measuring instrument to PC)	0554 0006

Recommended for your applications

testo 350 M: Set for fast emission monitoring on industrial burners (O_2, CO, NO, SO_2)

testo 350, control unit	0563 0353
Testo rechargeable pack for control unit	0515 0097
testo 350 M analyser box	0563 0351
NO measuring module, 0 to 3000 ppm, built into analyser box	0440 3935
SO2 measurement module, 0 to 5000 ppm, built into analyser box	0440 3927
Flue gas probe, 335 mm immersion depth, Thermocouple NiCr-Ni (Tl), Hose 2.2 m	0600 7451
Heat-proof probe pipe, 335 mm long, Tmax. +1000°C	0440 7437
Connection cable, 2 m, for Testo data bus	0449 0042
ComSoft 3 for data management, incl. RS 232 connection cable	0554 0841
Protective cover for analyser box	0554 0199
Carrying belt set for analyser box	0554 0434
Transport case for analyser, probes and accessories	0516 0351
Spare particle filter, pack of 20	0554 3381
Spare thermal paper for printer (6 rolls)	0554 0569

testo 350 XL: Standard set for measurements on process systems (O_2, CO, NO, NO_2)

testo 350, control unit	0563 0353
Testo rechargeable pack for control unit	0515 0097
testo 350 XL analyser box	0563 0350
Flue gas probe, 335 mm immersion depth, Thermocouple NiCr-Ni (Tl), Hose 2.2 m	0600 7451
Heat-proof probe pipe, 335 mm long, Tmax. +1000°C	0440 7437
Special hose for NO2/SO2 measurements, 2.2 m long	0440 7442
Connection cable, 2 m, for Testo data bus	0449 0042
ComSoft 3 for data management, incl. RS 232 connection cable	0554 0841
Protective cover for analyser box	0554 0199
Carrying belt set for analyser box	0554 0434
Transport case for analyser, probes and accessories	0516 0351
Spare particle filter, pack of 20	0554 3381
Spare thermal paper for printer (6 rolls)	0554 0569

testo 350 XL: Portable measurements on motors (O_2, CO, NO, NO_2)

testo 350, control unit	0563 0353
Testo rechargeable pack for control unit	0515 0097
testo 350 XL analyser box	0563 0350
Measurement range extension for CO measurement module (dilution)	0440 0555
Flue gas probe, 335 mm immersion depth, Thermocouple NiCr-Ni (Tl), Hose 2.2 m	0600 7451
Heat-proof probe pipe, 335 mm long, Tmax. +1000°C	0440 7437
Special hose for NO2/SO2 measurements, 2.2 m long	0440 7442
Connection cable, 5 m, for Testo data bus	0449 0043
ComSoft 3 for data management, incl. RS 232 connection cable	0554 0841
Protective cover for analyser box	0554 0199
Carrying belt set for analyser box	0554 0434
System case (aluminium), incl. drawer	0516 0352
Spare particle filter, pack of 20	0554 3381
Spare thermal paper for printer (6 rolls)	0554 0569

testo 350 XL: Portable measurements on turbines (O_2, CO_{low}, NO_{low}, NO_2)

testo 350, control unit	0563 0353
Testo rechargeable pack for control unit	0515 0097
Touchscreen with reader	0440 0559
testo 350 XL analyser box	0563 0350
COlow measurement module, 0 to 500 ppm, built-in in the analyser box	0440 3925
NOlow measurement module, 0 to 300 ppm, built-in in analyser box	0440 3934
Measurement range extension for CO measurement module (dilution)	0440 0555
Flue gas probe, 335 mm immersion depth, Thermocouple NiCr-Ni (Tl), Hose 2.2 m	0600 7451
Heat-proof probe pipe, 335 mm long, Tmax. +1000°C	0440 7437
Special hose for NO2/SO2 measurements, 5 m long	0440 7445
Connection cable, 5 m, for Testo data bus	0449 0043
ComSoft 3 for data management, incl. RS 232 connection cable	0554 0841
Protective cover for analyser box	0554 0199
Carrying belt set for analyser box	0554 0434
System case (aluminium), incl. drawer	0516 0352
Spare particle filter, pack of 20	0554 3381
Spare thermal paper for printer (6 rolls)	0554 0569

Technical data/testo 350 M analyser box, testo 350 XL

Probe type	Temperature measurement	O_2 measurement	CO (H2 compensated)	COlow meas. (H2 compensated)	CO_2	NO meas. (option for testo 350 M)	NOlow measurement	NO2 measuring module (option for testo 350 M)	SO2 measurement
Meas. range	-40 to +1200 °C	0 to +25 Vol. % O_2	0 to +10000 ppm CO	0 to +500 ppm CO	0 to CO_2 max Vol. % CO_2	0 to +3000 ppm NO	0 to +300 ppm NO	0 to +500 ppm NO_2	0 to +5000 ppm SO_2
Accuracy ±1 digit	±0.5% of mv (+100 to +1200 °C) ±0.5 °C (-40 to +99.9 °C)	±0.8% of fsv (0 to +25 Vol. % O_2)	±5% of mv (+200 to +2000 ppm CO) ±10% of mv (+2001 to +10000 ppm CO) ±10 ppm CO (0 to +199 ppm CO)	±5% of mv (+40 to +500 ppm CO) ±2 ppm CO (0 to +39.9 ppm CO)	Calculated from O_2	±5% of mv (+100 to +1999.9 ppm NO) ±10% of mv (+2000 to +3000 ppm NO) ±5 ppm NO (0 to +99 ppm NO)	±5% of mv (+40 to +300 ppm NO) ±2 ppm NO (0 to +39.9 ppm NO)	±5% of mv (+100 to +500 ppm NO_2) ±5 ppm NO_2 (0 to +99.9 ppm NO_2)	±5% of mv (+100 to +2000 ppm SO_2) ±10% of mv (+2001 to +5000 ppm SO_2) ±5 ppm SO_2 (0 to +99 ppm SO_2)
Resolution	0.1 °C (-40 to +1200 °C)	0.01 Vol. % O_2 (0 to +25 Vol. % O_2)	1 ppm CO (0 to +10000 ppm CO)	0.1 ppm CO (0 to +500 ppm CO)	0.01 Vol. % CO_2	1 ppm NO (0 to +3000 ppm NO)	0.1 ppm NO (0 to +300 ppm NO)	0.1 ppm NO_2 (0 to +500 ppm NO_2)	1 ppm SO_2 (0 to +5000 ppm SO_2)
Reaction time		20 s	40 s	40 s	20 s	30 s	30 s	40 s	30 s
Reaction type		t_{95}	t_{90}	t_{90}	t_{95}	t_{90}	t_{90}	t_{90}	t_{90}

Probe type	Efficiency	Flue gas loss	Differential pressure 1	Differential pressure 2	Velocity	CO_2 meas. (IR)			
Meas. range	0 to +120 %	-20 to +99.9 % qA	-200 to +200 hPa	-40 to +40 hPa	0 to +40 m/s	0 to 50 Vol. % CO_2			
Accuracy ±1 digit			±1.5% of mv (-50 to -200 hPa) ±1.5% of mv (+50 to +200 hPa) ±0.5 hPa (-49.9 to +49.9 hPa)	±1.5% of mv (-40 to -3 hPa) ±1.5% of mv (+3 to +40 hPa) ±0.03 hPa (-2.99 to +2.99 hPa)		±0.3 Vol. % CO_2 + 1% of mv (0 to 25 Vol. % CO_2) ±0.5 Vol. % CO_2 + 1.5% of mv (>25 to 50 Vol. % CO_2)			
Resolution	0.1 % (0 to +120 %)	0.1 % qA (-20 to +99.9 % qA)	0.1 hPa (-200 to +200 hPa)	0.01 hPa (-40 to +40 hPa)	0.1 m/s (0 to +40 m/s)	0.01 Vol. % CO_2 (0 to 25 Vol. % CO_2) 0.1 Vol. % CO_2 (>25 Vol. % CO_2)			
Reaction time						<10 s			
Reaction type						t_{90}			

Dimensions	395 x 275 x 95 mm
Weight	3200 g
Storage temp.	-20 to +50 °C
Oper. temp.	-5 to +45 °C
Material/Housing	ABS

Additional technical data:
Memory: 250 000 readings
Power supply: Via integrated mains unit (90 V to 260 V, 47 to 63 Hz)
or exchangeable rechargeable batteries
Electrical power required:
0.5 A (110 V AC), 0.3 A (230 V AC)
Dew point calculation: 0 to 99°C td
Maximum positive pressure of flue gas: 50 hPa (500 mm water column)
Maximum negative pressure: 200 hPa (2000 mm water column)
Pump flow: 0.8 m/s with flow monitoring
Max. dust load: 20 g/m³ dust in flue gas
Max. humidity load: +70°C
Dew point temperature at analyser box inlet

Measuring range extension (dilution) for CO:
dilution factors 0, 2, 5, 10, 20, 40
Dilution gas: Fresh air or N2
Accuracy: Reading plus max. 2%
Trigger input testo 350XL:
Voltage: 5 to 12 volt
(rising or falling edge)
Pulse width > 1 second
Load: 5 V/max. 5 mA, 12 V/max. 40 mA

Warranty:
Analysers: 2 years (excluding working parts e.g. measuring cells...)
CO/NO/NO2/SO2/H2S/HC/CO2 sensor: 1 year
O2 measuring cell: 1.5 years

Additional technical data for testo 350 XL analyser box only

Probe type	H2S measurement
Meas. range	0 to +300 ppm
Accuracy ±1 digit	±5% of mv (+40 to +300 ppm) ±2 ppm (0 to +39.9 ppm)
Resolution	0.1 ppm (0 to +300 ppm)
Reaction time	35 s
Reaction type	t_{90}

Additional technical data:
Trigger input: 5 to 12 V
(rising or falling edge)

Technical data for HC module

Parameter	Methane	Propane	Butane
Meas. range [1]	100 to 40,000 ppm	100 to 21,000 ppm	100 to 18,000 ppm
Accuracy	less than 400 ppm (100 to 4000 ppm less than 10 % of m.v. (greater than 4000 ppm)	less than 400 ppm (100 to 4000 ppm less than 10 % of m.v. (greater than 4000 ppm)	less than 400 ppm (100 to 4000 ppm less than 10 % of m.v. (greater than 4000 ppm)
Resolution	10 ppm	10 ppm	10 ppm
Min. 02 req. in flue gas	2% + (2 x methane reading)	2% + (5 x propane reading)	2% + (6.5 x butane reading)
Reaction time t90	less than 40 s	less than 40 s	less than 40 s
Response factor [2]	1	1.5	2

[1] Lower explosion limit must be adhered to.
[2] The HC module is adjusted to methane in the factory. It can be adjusted to another gas by the user.

Technical Data for Control unit and testo 454 logger box

Probe type	Vane	Thermal	Testo humid. sensor, cap.	Pressure	
Meas. range	0 to +60 m/s	0 to +20 m/s	0 to +100 %RH	+10 to +30000 hPa	
Accuracy ±1 digit	See probe data for system accuracy	±0.01 m/s (0 to +1.99 m/s) ±0.02 m/s (+2 to +4.99 m/s) ±0.04 m/s (+5 to +20 m/s)	See probe data	Probe 0638 1345 Probe 0638 1445 Probe 0638 1545 Probe 0638 1645 ±0.1% of m.v.	
Resolution	0.01 m/s (for Ø 60/100 mm), 0.1 m/s (for remaining probes)	0.01 m/s (0 to +20 m/s)	0.1 %RH (0 to +100 %RH)	0.001 hPa (probe 0638 1345) 0.001 hPa (probe 0638 1445) 0.01 hPa (probe 0638 1545)	

Probe type	Pt100	Type K (NiCr-Ni)	Type S (Pt10Rh-Pt)	Type J (Fe-CuNi)	Type T (Cu-CuNi)
Meas. range	-200 to +800 °C	-200 to +1370 °C	0 to +1760 °C	-200 to +1000 °C	-40 to +350 °C
Accuracy ±1 digit	±0.1 °C (-49.9 to +99.9 °C) ±0.4 °C (-99.9 to -50 °C) ±0.4 °C (+100 to +199.9 °C) ±1 °C (-200 to -100 °C) ±1 °C (+200 to +800 °C)	±0.4 °C (-100 to +200 °C) ±1 °C (-200 to -100.1 °C) ±1 °C (+200.1 to +1370 °C)	±1 °C (0 to +1760 °C)	±0.4 °C (-150 to +150 °C) ±1 °C (-200 to -150.1 °C) ±1 °C (+150.1 to +199.9 °C)	±0.4 °C (-40 to +200 °C) ±1 °C (+200.1 to +350 °C)
Resolution	0.01 °C (-99.9 to +300 °C) 0.1 °C (-200 to -100 °C) 0.1 °C (+301 to +800 °C)	0.1 °C (-200 to +1370 °C)	1 °C (0 to +1760 °C)	0.1 °C (-200 to +1000 °C)	0.1 °C (-40 to +350 °C)

Probe type	NTC	CO probe	CO2 probe	CO2 probe	
Meas. range	-40 to +150 °C	0 to +500 ppm CO	0 to +1 Vol. % CO_2	0 to +10000 ppm CO_2	
Accuracy ±1 digit	±0.2 °C (-10 to +50 °C) ±0.4 °C (-40 to -11 °C) ±0.4 °C (+51 to +150 °C)	±5% of mv (0 to +500 ppm CO)	See probe data	See probe data	
Resolution	0.1 °C (-40 to +150 °C)				

Probe type	Mechanical	Current/voltage measurement	Current/voltage measurement	Control unit, integ. press. sensor	Control unit, integ. press. sensor
Meas. range	+20 to +20000 rpm	0 to +20 mA	0 to +10 V	-200 to +200 hPa	-40 to +40 hPa
Accuracy ±1 digit	(+20 to +20000 rpm)	±0.04 mA (0 to +20 mA)	±0.01 V (0 to +10 V)	±1.5% of mv (-50 to -200 hPa) ±1.5% of mv (+50 to +200 hPa) ±0.5 hPa (-49.9 to +49.9 hPa)	±1.5% of mv (-3 to -40 hPa) ±1.5% of mv (+3 to +40 hPa) ±0.03 hPa (-2.99 to +2.99 hPa)
Resolution	1 rpm (+20 to +20000 rpm)	0.01 mA (0 to +20 mA)	0.01 V (0 to +10 V)	0.1 hPa (-200 to +200 hPa)	0.01 hPa (-40 to +40 hPa)

	testo 350, control unit	Logger, measures and saves readings	Analog output box (mA out)	Power box	
Oper. temp.	-5 to +45 °C	-10 to +50 °C	-10 to +50 °C	0 to +40 °C	
Storage temp.	-20 to +50 °C	-25 to +60 °C	-25 to +60 °C	-20 to +50 °C	
Battery type	4 AA batteries	Alkali manganese			
Battery life	8 h	24 h		35 h	
Memory	250000	250000			
Weight	850 g	450 g	305 g	700 g	
Dimensions	252 x 115 x 58 mm	200 x 89 x 37 mm	200 x 89 x 37 mm	200 x 89 x 37 mm	
Warranty	2 years	3 years	3 years	3 years	

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Portable reference analyser for industrial flue gases

testo 360

Today, official emission measurements on industrial flue gases are ideally carried out using a compact, portable analyser of robust design. Advantage: Easy to transport by car and easy to handle.

When monitoring thermal processes, the aim is to maintain and improve quality. Often conditions are extreme with a high gas concentration, dust load, high ambient temperatures and long-term measurements are required.

When monitoring emissions, **testo 360** can determine even extreme values thanks to a switchable measuring range extension and it can withstand high ambient temperatures and radiant heat.

For service on industrial furnaces, total accuracy is required of portable multi-function analysers because of the numerous subsequent emission inspections; the analyser should also be robust to withstand continuous measurements for the optimum adjustment of burners. A high efficiency level and low subsequent costs are also a priority.

- Data logger function for several days or weeks
- Maintenance-friendly design reduces costs

Industrial flue gas inspections require flexible analysers which are easy to transport and correspond to stationary systems in terms of accuracy levels.

testo 360, minimum equipment

testo 360, including notebook with basic software, O_2, CO, NO, NO_2measuring module, CO rinse, gas preparation unit, housing heating unit, 4.0 m heated hose, filter, basic sampling probe

Germany

The approval for long-term emission measurements was carried out by RWTÜV Anlagentechnik GmbH in Essen, Germany. The NO, NO_2, SO_2, CO and O_2 components were tested. Unlimited approval of **testo 360** for use on TA Luft systems was confirmed.

USA

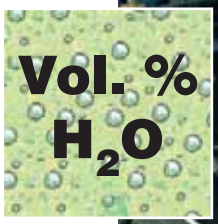
testo 360 meets US EPA's Performance Specifications for measuring NO_X, CO and O_2. Also fulfills CTM-030 and -034 as well as US EPAs 40 CFR, Part 60, App. A and B and Part 75 Subpart C. (**testo 360** is also approved by California South Coast Air Quality Management District for measuring NO_X.)

Russia

testo 360 has GOS standard approval for all parameters.

Switzerland

testo 360 is approved by BUWAL for official emission measurements.



Flue gas humidity measurement

Approved for continuous emission measurements

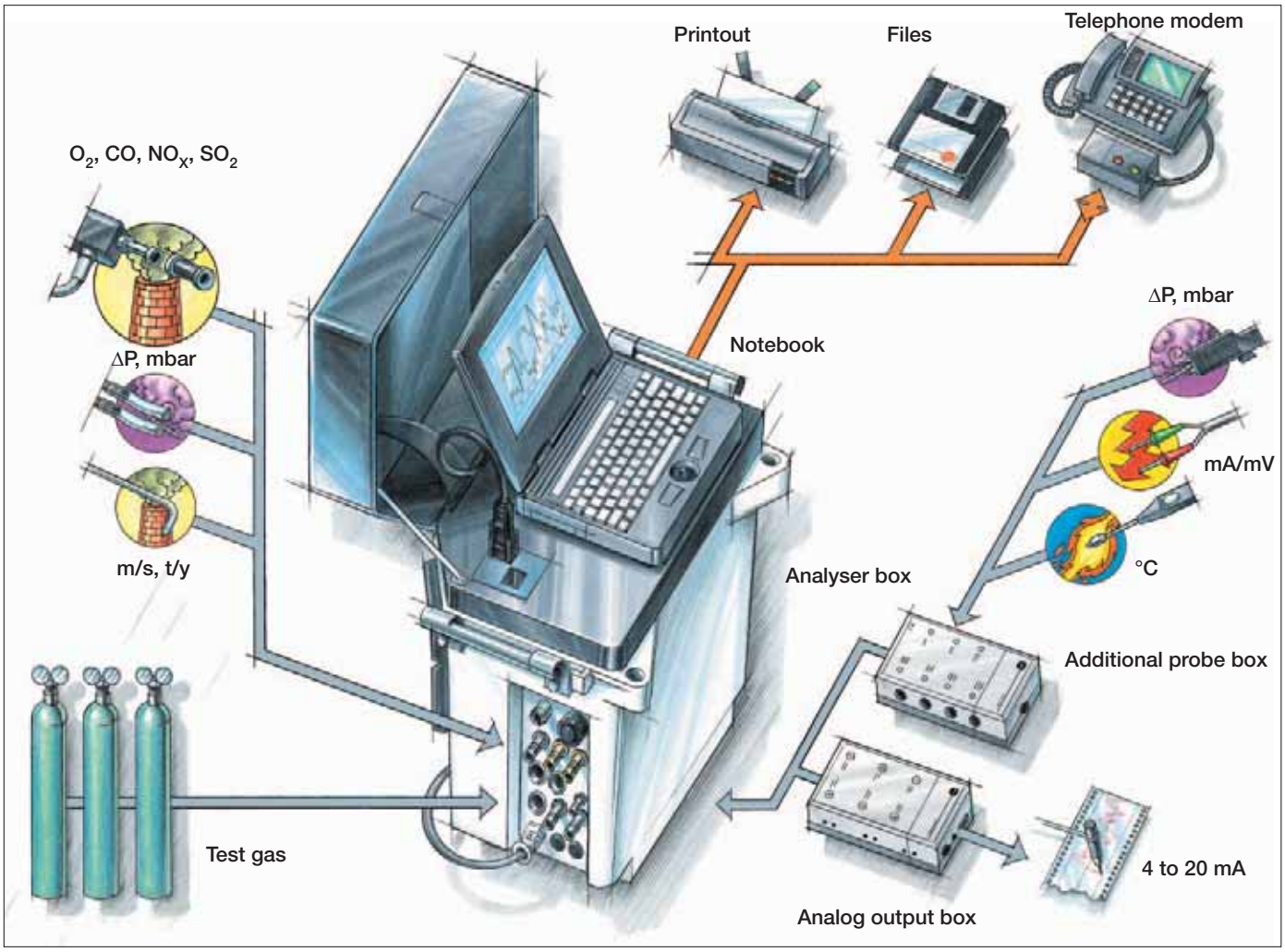
testo 360 – For practically stationary applications such as motor test rigs, for example

Benefits at a glance

- Accuracy fully compatible with stationary measuring technology
- All in one analyser: NO_X, CO, CO_2, SO_2, O_2, HC
- Water level in flue gas, velocity and differential pressure, temperature
- Long-term stable sensor, calibration gas on site is not necessary
- Integrated, low-absorption Peltier gas penetration unit (patented)
- Can be used in extreme conditions
- Data logger operation for several days and weeks without staff supervision
- Extreme measurement ranges in % range with high precision at low concentrations
- Easy maintenance reduces follow up costs

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

testo 360 system overview



Design and function

The 360 reference measuring system consists of an analyser unit, a notebook and the flue gas probe. All of the sensors (max. 7 gas sensors), the flue gas moisture measurement unit (optional), the measuring range extension unit (gas dilution, optional), velocity measurement (optional) as well as a low absorption gas preparation Peltier cooling unit are located in the analyser box.

The option of an external additional probe unit is available for parallel measurement of temperatures or mA/mV signals (e.g. from FID) and the output of analog signals (4-20 mA).

The flue gas probe is connected to the heated hose with integrated filter: either the modular industrial probe or any non-Testo or special probes via an adapter.

Handling

testo 360 is easily transported by the operator. The fold-up trolley on which the analyser is placed when working is ideal for this purpose.

Operation and Analysis

The notebook is protected from ambient influences during long-term measurements by the lid which can be locked. Measurements are taken using WINDOWS® software. The measured data is saved as ASCII on the notebook's hard disk and can be integrated into any analysis program.

The analyser can be operated and data can be transmitted via telephone modem or computer network.

Continuous measurements

Calibration gas can be automatically supplied to the probe for accuracy checks by means of a calibration gas switchover unit (accessory) or directly to the analyser by means of a calibration gas inlet (optional).

Maintenance and Service

testo 360 has been designed so that the user can easily change the sensors – also without calibration gases.

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Recommended Set:

Typical set for thermal process measurement

Analyser and accessories:	
testo 360-1, analyser, approved Including notebook with basic software, O2, CO, NO, NO2 measuring modules, CO rinse, gas preparation, housing heating unit.	0563 3601
CO2 measuring module (incl. absolute pressure measurement)	0440 0084
Measuring range extension (gas dilution)	0440 0059
Flue gas moisture measurement to determine water level	0440 0063
Automatic software	0554 0378
Analysis software	0554 0380
Heated gas sampling hose, 4 m long	0401 0399
Hose filter insert	0554 0393
Weather-proof cover	0554 3608
Trolley	0554 3600
Cooling unit, external (220V)	0554 3605
Sampling probe:	
Adapter, non-heated	0600 7911
Non-heated sampling pipe to +1800 °C, Al-Oxide	0600 7805

Measuring task

Measurements on thermal process systems include, for example, through-type furnaces in the glass, ceramics and building material industry, furnaces for cement and lime production, hardening furnaces in the metal processing industry and many more. One aim of the measurements is monitoring the furnace atmosphere for quality purposes. The other aim is to optimize burner adjustment.

You will find more information on testo 360 in the "testo 360 – Portable Reference Analyser For Industrial Flue Gases" brochure. If you need assistance for initial operation, we will be happy to make you an individual offer.

The advantages

- Measurement of extreme concentrations up into the % range via switchable measuring range extension (dilution)
- One instrument for 2 applications - also used for measuring emissions in clean gas when measuring range extension is switched off
- Furnace cycles can be measured for several days (data logger function)
- Can also be used in extreme environment of up to +55 °C, radiant heat, dust etc.
- Integrated water level measurement of furnace flue gases independent of temperature
- Can be used with ceramic sampling probe at flue gas temperatures of up to 1800 °C

Technical data

Parameters	Meas. range	Measuring range with sample dilution
O_2	0 to +21 Vol. % O_2	0 to 21 Vol. % O_2
NO	0 to +3000 ppm NO 0 to +6160 mg/m³NO	0.1 to 6.0 Vol. % NO
NO_2	0 to +500 ppm NO_2 0 to +1030 mg/m³ NO_2	0.1 to 1.0 Vol. % NO_2
NO_x (NO + NO_2)	0 to +3500 ppm NO_x 0 to +7190 mg/m³ NO_x	0.1 to 7.0 Vol. % NO_x
SO_2	0 to +5000 ppm SO_2 0 to +14650 mg/m³ SO_2	0.1 to 10.0 Vol. % SO_2
CO_2	0 to +25 Vol. % CO_2	0.1 to 100 Vol. % CO_2
With built-in absolute pressure measurement	+40 to +1200 hPa	
CO	0 to +10000 ppm CO 0 to +12560 mg/m³ CO	0.1 to 20 Vol. % CO
Flue gas moisture	+2 to +31 %H_2O +15 to +70 °C td	
Temperature FT	-40 to +1200 °C (Industrial probe)	
Velocity speed calculated from pressure difference	+5 to +40 m/s 0 to +50 hPa	
Parameter: HC, methane Parameter: HC, propane Parameter: HC, butane	80 ppm up to 5% (= lower explosion limit) 80 ppm up to 2.1% (= lower explosion limit) 80 ppm up to 1.8% (= lower explosion limit)	

Mains conn.: 115 / 230 V switchable, 50-60 Hz

Electr. power: 360 VA (with 2.2 m hot hose)

Ready to operate: a) with heating unit, gas prep. unit and heated hose: approx. 20 min. (ambient temperature +20 °C)

Max. storage temp.: a) without external cooling unit: -25…+45 °C, b) with external cooling unit: -25…+55 °C

Max. storage temp.: -25…+55 °C

Flow of built-in pump: approx. 1.0 l/min, with flow monitoring

Max. dew point of flue gas: +70 °C (= 31 Vol% H2O)

Max. positive pressure in flue gas/cal gas inlet: 50 hPa (500 mm water column)

Max. negative pressure in flue gas inlet: 200 hPa (2000 mm water column)

Gas preparation: microprocessor regulated Peltier cooling unit with dew point control, Rilsan® inner coating

Condensate paths: Peristaltic pump, heated condensate outlet

Operating unit: Removable notebook (positioned via industrial Velcro), minimum: 486, 4 MB main memory, 250 MB hard disk

Alarm output: max. turn-on voltage 250 V AC, max. turn-on current 4 A

Protection class: IP42 (with lid closed) in accordance with DIN 40050/IEC 529

Housing material: Polycarbonate lid, fibreglass-reinforced plastic (UP)

Material: C-Flex®, PTFE hoses

Gas paths: Stainless steel

Mat. of pressure paths: Polyamide

Weight of analysis unit: Approx. 21 kg incl. notebook (fully equipped)

Dimensions of analysis box: 610 x 400 x 390 mm (with handles)

Warranty

Analyser: 2 years (excluding notebook, working parts such as meas. cells, filters, pumps, internal rech. batt., etc.)

O2 cell: 1 1/2 year

CO, NO, NO2, CO, humidity meas.: 6 months

HC, SO2 module: 6 months

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Maintenance and Service

Pressure

Pitot tube reference instruments – In two accuracy classes	testo 521	Page 30
Pressure measurement for service and adjustment work	testo 312-2/-3	Page 31

Endoscopy

Fiberscopes – Versatile tools for fast diagnosis	testo 318	Page 32

Gas detector

Gas detector – To detect the smallest leaks	testo gas detector	Page 32

Dataloggers

High temperature dataloggers – With 4 probe sockets	testostor 171-8	Page 33
Professional long-term monitoring – With 4 probe sockets	testo 177-T4	Page 34

Temperature – Non-contact

Non-contact temperature measurement – With memory and site management	testo 860-T2/-T3	Page 36
Non-contact temperature measurement – With laser sighting	testo 830-T1/-T2	Page 37

Stroboscope

Hand-held stroboscope – Light-intensive	testo 476	Page 37

Stationary measurement engineering

Pressure dewpoint transmitter – Efficient trace humidity measurement	testo 6741 testo 6743	Page 39
Stationary temperature probes		Page 40
Display, alarm, networking with the built-in displays testo 54	testo 54	Page 41

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Pitot tube reference instruments – In two accuracy classes

testo 521

The highly accurate differential pressure meter testo 521 with an internal pressure sensor from 0 to 100 hPa is ideal for Pitot tube measurements in the range 5 to 100 m/s. testo 521 is available in two accuracy classes. testo 521-1 with an internal pressure sensor in Class 0.2, testo 521-2 with internal pressure sensor in Class 0.1. The measurement data can be saved according to location and analysed on the PC or printed on site on the Testo printer.

- Temp. compensated differential pressure sensor 0 to 100 hPa integrated in instrument
- Calculation of velocity and volume flow via Pitot tube measurement
- Multi-point and timed mean calculation
- 2 probe sockets for pressure and temperature

Save data according to site and analyse on PC/notebook

Pitot tube measurement in a flue gas duct

Accessories Ordering data	Part no.
Connection hose, silicone, 5m long, Max. load 700 hPa (mbar)	0554 0440
Cable, 1.5 m long, connects probe with plug-in head to meas. instrument, PUR coating material	0430 0143
TopSafe (protection case), Incl. carrier strap, bench stand and magnet. Protects instrument from dust, impact, scratches	0516 0446
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries	0554 0547
ComSoft 3 - Professional with data management, Incl. database, analysis and graphics function, data analysis, trend curve (without	0554 0830
RS232 cable, Connects instrument to PC (1.8 m) for data transfer	0409 0178
Transport case, For measuring instrument, probes, Prandtl Pitot tube, accessories	0516 0527

testo 521-1

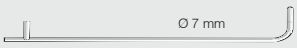
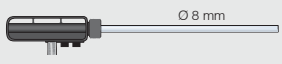
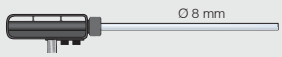
Accuracy 0.2% of fsv
Differential pressure meter 0 to 100 hPa incl. battery and calibration protocol
Part no. 0560 5210

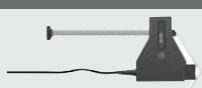
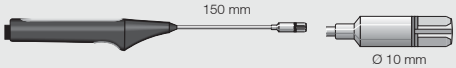
testo 521-2

Accuracy 0.1% of fsv
Differential pressure meter 0 to 100 hPa incl. battery and calibration protocol
Part no. 0560 5211

Technical data			
Probe type	Piezoresistive pressure sensor (internal)	Piezoresistive pressure sensor for external pressure probes	
Meas. range	0 to 100 hPa/ 5 to 100 m/s	0 to 2000 hPa	
Accuracy ±1 digit	±0.2 % of fsv(testo 521-1) 0.1 m/s at 65 m/s ±0.1 % of fsv(testo 521-2) 0.05 m/s at 65 m/s	±0.1 % of mv	
Resolution	0.01 hPa	0.1 Pa (0638 1347) 0.001 hPa (0638 1447)	
Overload	300 hPa		
Static pressure	2000 hPa		
Oper. temp. (compensated)	0 to +50 °C	Dimensions	219 x 68 x 50 mm
Storage temp.	-20 to +70 °C	Weight	300 g
Memory	25,000	Display	LCD, 2 lines
PC	RS232 interface	Battery type	9 V (6LR61)

Differential pressure probes	Illustration	Meas. range	Accuracy	Conn.	Part no.
Precision pressure probe, 100 Pa, in robust metal housing with impact protection, incl. magnet for fast attachment, to measure differential pressure and velocity speeds (in connection with Pitot tube)		0 to +100 Pa 1 to 12 m/s	±(0.3 Pa ±0.5% of mv) 0.03 m/s at 8 m/s	Plug-in head. connection cable 0430 0143 or 0430 0145 required	0638 1347
Pressure probe, 10 hPa, in robust metal housing with impact protection incl. magnet for fast attachment, to measure differential pressure and velocity speeds (in connection with Pitot tube)		0 to +10 hPa 3 to 39 m/s	±0.03 hPa 0.04 m/s at 24 m/s	Plug-in head. connection cable 0430 0143 or 0430 0145 required	0638 1447

Pitot tubes	Illustration	Meas. range	Probe type	Part no.
Pitot tube, 350 mm long, stainless steel, for measuring flow velocity in connection with 0638 1347/..1447 pressure probes		Oper. temp. 0 to +600 °C		0635 2145
Pitot tube, 1000 mm long				0635 2345
Pitot tube, stainless steel, 500 mm long, measures flow velocity incl. temperature measurement, for pressure probes 0638 1347/..1447		-40 to +600 °C	Type K (NiCr-Ni)	0635 2140
Pitot tube made of stainless steel, 1000 mm long				0635 2240
Pitot tube, stainless steel, 350 mm long, measures velocity with temperature measurement, 3 x hoses (5 m long) and heat protection plate		-40 to +1000 °C	Type K (NiCr-Ni)	0635 2041
Pitot tube made of stainless steel, 750 mm long				0635 2042

Temperature probes	Illustration	Meas. range	Accuracy	t_{99}	Part no.
Pipe wrap probe for pipes with diameter of up to 2", for flow/return temp. meas. in hydronic systems		-60 to +130 °C	Class 2	5 s	0600 4593
Quick-action surface probe with sprung thermocouple strip, measuring range short-term to +500°C		-200 to +300 °C	Class 2	3 s	0604 0194 **Conn.:** Plug-in head. connection cable 0430 0143 or 0430 0145 required

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Pressure measurement for service and adjustment work

testo 312-2/-3

The testo 312-2 and 3 manometers are DVGW approved and correspond to TRGI for all pressure adjustments and pressure inspections on gas heating boilers. Use the testo 312-2 precision manometer to check flue gas draught, differential pressure in the combustion chamber compared with ambient pressure or gas flow pressure with high resolution. Fine pressures with a resolution of 0.01 hPa can be measured in the range from 0 to 40 hPa.

The versatile testo 312-3 pressure meter facilitates preliminary and main tests on gas and water pipelines up to 6000 hPa (6 bar), fuel pressure measurements at stationary gas motors, vacuum or differential pressure measurement in motor suction pipes.

- Switchable measuring ranges, ideal resolution
- Compensation of reading deviations caused by temperature
- Alarm display when user defined limit values are exceeded
- Clear display with time

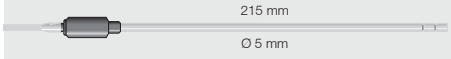
Printout on site (optional)

With alarm function

Fuel pressure measurement on stationary gas motors

testo 312-2	testo 312-3
Up to 40/200 hPa Precision manometer up to 40/200 hPa, DVGW approval, incl. alarm display, battery and calibration protocol **Part no. 0632 0313**	**Up to 300/600 hPa** Versatile pressure meter up to 300/6000 hPa, DVGW approval, incl. alarm display, battery and calibration protocol **Part no. 0632 0314**

Printers and Accessories	Part no.
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries	0554 0547
Recharger for printer (with 4 standard rech. batteries), Rechargeable batteries are recharged externally	0554 0110
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls), permanent ink, Measurement data documentation legible for up to 10 years	0554 0568
Additional Accessories and Spare Parts	**Part no.**
9V rech. battery for instrument, Instead of battery	0515 0025
Recharger for 9V rechargeable battery, For external recharging of 0515 0025 battery	0554 0025
Pressure transmitter 1-1000 mbar to measure pressure in filled water pipelines	0554 3168
Pressure transmitter 1-6 bar to measure pressure in filled water pipelines	0554 3159
Connection hose for pressure transmitter to system (1 off)	0554 3170
Transport and Protection	**Part no.**
TopSafe (protection case), with bench stand, Protects instrument from dirt and impact	0516 0443
Magnetic bench stand suitable for TopSafe 0516 0443, For positioning on boilers, for example	0554 0407
Case, For secure storage of measuring instrument	0516 0191
Transport case (plastic), For transport and secure storage of measuring instrument and accessories	0516 3120

Suitable probes at a glance	Part no.
Pressure set with flue draught probe, consisting of: 2 x silicone hoses Ø 4 mm and Ø 6 mm respectively, 4 mm and 6 mm T-piece, connection piece 	0554 3150

Technical data	testo 312-2	
Meas. range	-40 to +40 hPa	-200 to +200 hPa
Accuracy ±1 digit	±1.5% of mv (+3 to +40 hPa) ±0.03 hPa (0 to +3 hPa)	±0.5 hPa (0 to +50 hPa) ±2 hPa (+50 to +200 hPa)
Resolution	0.01 hPa	0.1 hPa
Overload	±1000 hPa	±1000 hPa
Technical data	**testo 312-3**	
Meas. range	-300 to +300 hPa	-6000 to +6000 hPa
Accuracy ±1 digit	±0.5 hPa (0 to +50 hPa) ±1.5 hPa (+50 to +300 hPa)	±2% of mv (+400 to +2000 hPa) ±4% of mv (+2000 to +6000 hPa) ±4 hPa (0 to +400 hPa)
Resolution	0.1 hPa	1 hPa
Overload	±8000 hPa	±8000 hPa
Common data	**testo 312-2/-3**	
Dimensions	215 x 68 x 47 mm	
Weight	300 g	

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Fiberscopes – Versatile tools for fast diagnosis

testo 318

The fiber-optic inspection tools from the testo 318 Series provide you with a clear picture at difficult-to-access points. The lens can focus on objects as close as 19 mm (3/4”). The sealed lens and shaft may be immersed in liquids without worry.

- Thin flexible probe shaft
- Easy one-hand operation

Accurate inspection of welded joints e.g. in hollow spaces

With mirror

Accurate inspection of welded joints e.g. in hollow spaces

testo 318-1 S

914 mm long, Ø 6 mm
Fiberscope, probe 914 mm long/Ø 6 mm, halogen lamp and batteries

Part no. 0632 3181

testo 318-2 S

457 mm long, Ø 6 mm
Fiberscope, probe 457 mm long/Ø 6 mm, halogen lamp and batteries

Part no. 0632 3182

testo 318-1

914 mm long, Ø 10 mm
Fiberscope, probe 914 mm long/Ø 10 mm, halogen lamp, batteries

Part no. 0632 0318

testo 318-2

457 mm long, Ø 10 mm
Fiberscope, probe 457 mm long/Ø 10 mm, halogen lamp, batteries

Part no. 0632 0319

Accessories Ordering data	Part no.
Spare halogen lamp	0213 0017
Clip on 45° mirror, Ø 6 mm	0554 1325
Clip on 45° mirror, Ø 10 mm	0554 1320
Attachable clip incl. magnet, Ø 6 mm	0554 1324
Attachable clip incl. magnet, Ø 10 mm	0554 1321

testo 318-6

1830 mm long, Ø 10 mm
Complete 318-6 Set consisting of fiberscope, probe 1830 mm long/Ø 10 mm, halogen lamp, clip-on 45° mirror, clip with magnet, spare lamp, batteries and hard shell case

Part no. 0563 3186

Technical data	
Number of pixels	6,000
Field of view	40°
Min. focus distance	19 mm
Max. bending radius	203 mm
Light source	Halogen lamp (3220 K)

Gas detector – Detects even the smallest gas leaks

testo gas detector

According to DVGW leaflet G 465-4, gas detectors are approved for aboveground gas detection up to the “lower explosive limit (LEL)”. Testo’s gas detector is a multi-range gas detector for the gas types methane, propane and hydrogen. Gas concentrations are measured by the semi-conductor sensor in the ppm range and are shown in the display with a resolution of 1 ppm.

- Audible signals when approaching the lower explosion limit
- Continuous sound and display when the explosion limit is reached

Flexible probe extension for difficult-to-access points

Gas detection and leak location in gas pipelines and installations

Technical data			
Display range	Methane CH_4 1 to 999 ppm, 0.1 to 4.4 Vol.%		
	Propane C_3H_8 1 to 999 ppm, 0.1 to 1.9 Vol.%		
	Hydrogen H_2 1 to 999 ppm, 0.1 to 4.0 Vol.%		
Resolution	1 ppm / 0.1 Vol.%		
First reaction	>10 ppm		
Power supply	Built-in rechargeable block, NiMH, 1600 mAh		
Ex protection	Sensor intrinsically-safe corresponding to DMT test institute		
Reaction time t_{90}	2-3 s	Oper. temp.	-15 to +40 °C
Storage temp.	-25 to +70 °C	Dimensions	190 x 40 x 28 mm
Battery life	>8 h	Weight	320 g
Warranty	2 years on detector, 1 year on sensor		

testo gas detector

Gas detector incl. flexible probe extension, rechargeable battery and mains unit for mains operation and battery recharging
Part no. 0632 0323

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

High temperature datalogger – With 4 probe sockets

testostor 171-8

A compact datalogger with 4 external thermocouple connections for:

- Type K (NiCr-Ni), fast action probes for measurements from -200 to +1000 °C
- Type T (Cu-CuNi), fast accurate probes for measuring -50 to +350 °C

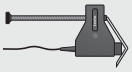
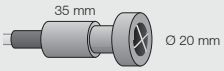
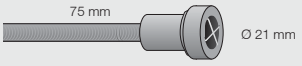
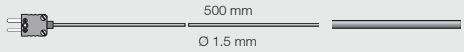
- Logs up to 55,000 readings
- Testo Software for Palm OS® replaces Laptop/PC
- Convenient data analysis with ComSoft 3, in graphics or table form

testostor 171-8

4 x external °C
Temperature datalogger, 4 channels, incl. starting magnet, battery and calibration protocol
Part no. 0577 1718

Heat protection case, aluminium full metal housing (anodised), 260 x 160 x 90 mm

Monitors temperatures in a hardening furnace

Description	Illustration	Meas. range	Accuracy	t_{99}	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	0602 4592 **Conn.:** Fixed cable
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	0602 4692 **Conn.:** Fixed cable
Magnetic probe, adhesive force approx. 20 N, with magnets, for measurements on metal surfaces		-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		-50 to +400 °C	Class 2		0602 4892 **Conn.:** Fixed cable
Immersion tip, flexible		-200 to +1000 °C	Class 1	5 s	0602 5792
Thermocouple, flexible, 800mm long, fibre glass Thermocouple, flexible, 1500mm long, fibre glass Thermocouple, flexible, 1500mm long, Teflon		-50 to +400 °C -50 to +400 °C -50 to +250 °C	Class 2	5 s	0602 0644 0602 0645 0602 0646

Printer and Accessories	Part no.
Testo printer with cordless IRDA and infrared interface, 1 roll of thermal paper and 4 round cell batteries	0554 0547
Recharger for printer (with 4 standard rech. batteries), Rechargeable batteries are recharged externally	0554 0110
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls), permanent ink, Measurement data documentation legible for up to 10 years	0554 0568

Additional accessories and spare parts	Part no.
Display can be attached to datalogger, For quick checks on site	0554 0176
Display with print option, can be attached to datalogger, For quick checks on site	0554 0175
Optical alarm display for datalogger, battery-operated	0628 0025
Heat-proof case with heat-proof insert, rubber seal, 4 clamp screw connections for thermocouples with diameter of 1.5 mm	0553 1701
Spare battery for testostor 171, Quick and easy battery replacement	0515 0018
Extension cable, 5m, for Type K thermocouple probe	0554 0592

Transport and Protection	Part no.
Holder with lock for datalogger, Theft-proof	0554 1782
Lock for attached display, Suitable for holder 0554 1782	0554 1789
Transport case (plastic) for dataloggers (max. 5 off) and accessories, For safe transport	0516 0117

PC software and Accessories	Part no.
ComSoft 3 - Professional with data management, Incl. database, analysis and graphics function, data analysis, trend curve (without	0554 0830
ComSoft 3 - For requirements to CFR 21 Part 11, Incl. database, analysis and graphics function, data analysis, trend curve (without	0554 0821
Palm OS® Kit for ComSoft 3, Software and interface for Palm OS® for easy programming, analysis and saving of logger data.	0554 0805
Interface, attachable to datalogger	0554 1781
Ethernet adapter, RS 232 - Ethernet incl. software driver, mains unit, Facilitates data communication in network	0554 1711

Calibration Certificates	Part no.
ISO calibration cert./Temperature, Temperature datalogger; calibration points selectable from -196 to +1300°C	0520 0141
ISO calibration certificate/Temperature, Temp. datalogger; calibration points -8°C; 0°C; +40°C	0520 0171
DKD calibration certificate/Temperature, Datalogger, transmitter, probe without display; cal. points freely selectable from -196 to +1000°C	0520 0281

Technical data

Probe type	Type K (NiCr-Ni)	Type T (Cu-CuNi)
Meas. range	-200 to +1000 °C	-50 to +350 °C
Accuracy ±1 digit	±(0.4 °C ±0.2% of mv)	±(0.4 °C ±0.2% of mv)
Resolution	0.1 °C (-200 to +249.9 °C) 1 °C (+250 to +1000 °C)	0.1 °C (-50 to +249.9 °C) 1 °C (+250 to +350 °C)
Oper. temp.	0 to +70 °C	Dimensions 131 x 68 x 26 mm
Storage temp.	-40 to +85 °C	Weight 305 g

Measuring rate: 2s to 24h, selectable
Battery life: up to 5 years
Software: Menu-driven from Microsoft Windows 95 / NT 4 Service pack 4

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Professional long-term monitoring – With 4 probe sockets

testo 177-T4

The testo 177-T4 professional datalogger with up to 4 external temperature probe connections for simultaneous temperature measurement at different locations.

Fluctuations in temperature, e.g. in technical systems, often influence the overall result. Surface, immersion and air probes facilitate adaption to the respective measurement task.

- Specially for use in high and low temperatures
- Read out data without interrupting the measurement series
- Data analysis in table or graphics form, with email function
- Memory for up to 48,000 readings

Collect data on site, upload to PC and analyse

Alarm message, efficient indication of limits exceeded

Inspecting flow/return temperature in technical systems

testo 177-T4

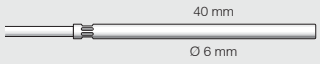
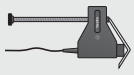
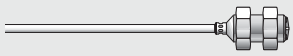
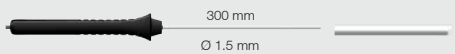
4 x external °C
Temperature datalogger, 4 channels, with 4 probe sockets, wall holder and calibration protocol
Part no. 0563 1774

Technical data			
Chann. external (var.)	4		
Probe type	Type T (Cu-CuNi)	Type K (NiCr-Ni)	Type J (Fe-CuNi)
Meas. range	-200 to +400 °C	-195 to +1000 °C	-100 to +750 °C
Accuracy ±1 digit	±0.5% of mv (+70.1 to +1000 °C) ±1% of mv (-200 to -100.1 °C) ±0.3 °C (-100 to +70 °C)		
Resolution	0.1 °C		
Memory	48000	Measuring rate	2 s to 24 h
Oper. temp.	0 to +70 °C	Protection class	IP43
Storage temp.	-40 to +85 °C	Weight	129 g
Battery type	Lithium battery	Dimensions	103 x 64 x 33 mm
Battery life	5 years at meas. cycle 15 min (-10 to +50 °C)		
Analysis Software	MS Windows 95b / 98 / ME / NT4-Sp4 / 2000 / XP		

Recommended Set: Set for monitoring technical systems

Temperature datalogger, 4 channels, with 4 probe sockets, wall holder and calibration protocol	0563 1774
Lock for wall holder for testo 175/177 dataloggers	0554 1755
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Measuring range short-term to +280°C	0602 4592
Pipe wrap probe for pipe diameter 5 to 65 mm, with exchangeable measuring head. Measuring range short-term to +280°C	0602 4592
testo 580 data collector including readout holders, For testo 175/177 dataloggers	0554 1778
ComSoft 3 Set - Basic with RS 232 interface	0554 1774

Accessories Ordering Data, See Page 35

Description	Illustration	Meas. range	Accuracy	t_{99}	Part no.
Industrial probe with stainless steel sleeve		-50 to +205 °C	Class 2	20 s	0628 7533 **Conn.:** Fixed cable
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	0602 4592 **Conn.:** Fixed cable
Surface temperature probe fitting with M 14 x 1.5 outer thread and 2 nuts, fast action surface probe with crossed strip		-50 to +180 °C	Class 2	3 s	0628 7521 **Conn.:** Fixed cable
Thermocouple, flexible, 800mm long, fibre glass		-50 to +400 °C	Class 2	5 s	0602 0644
Thermocouple, flexible, 1500mm long, fibre glass		-50 to +400 °C	Class 2	5 s	0602 0645
Thermocouple, flexible, 1500mm long, Teflon		-50 to +250 °C	Class 2	5 s	0602 0646
Accurate and quick-action immersion probe, waterproof		-60 to +1000 °C	Class 1	2 s	0602 0592 **Conn.:** Fixed cable

The specified seal class of the dataloggers is achieved with these probes.

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Accessories for testo 177

testo 575 fast printer

- Fast-action print mechanism, 6 lines/s
- Prints tables/graphics
- Brief info. or full memory can be printed as required
- Determine section to be printed
- Your language can be set
- Self-adhesive Testo paper can also be used

Part no. 0554 1775

Fast printout and logger rebooting with testo 575

testo 580 data collector

- Can read out up to 10 full testo 177 loggers
- Displays all status information
- Download collected data to PC using Testo ComSoft 3

Part no. 0554 1778

The testo 580 data collects data on site for upload to PC and analysis

testo 581 alarm signal output

- Transmission of alarm messages – e.g. when programmed limit values in the datalogger are exceeded – to external components such as horns, lamps, PLC etc.
- Signal transfer via floating signal output

Part no. 0554 1769

Alarm signal output for reliable notification of limits exceeded

Ethernet adapter

- Fast transfer of readings
- Use of an existing network without additional cabling
- Long transmission paths
- Identification of measuring instruments in system network
- In connection with ComSoft 3

Part no. 0554 1711

Read out the data stored in the logger via the PC network using the Ethernet adapter

Printer and Accessories	Part no.
Fast testo 575 printer, incl. 1 roll of thermal paper and batteries, Infrared thermal line printer with graphics function	0554 1775
Spare thermal paper for printer (6 rolls)	0554 0569
Spare thermal paper for printer (6 rolls), permanent ink, Measurement data documentation legible for up to 10 years	0554 0568
Label thermal paper (Testo patent) for testo 575 printer (6 rolls), can be applied directly	0554 0561
Additional Accessories	**Part no.**
testo 580 data collector including readout holders, For testo 175/177 dataloggers	0554 1778
testo 581 alarm signal output, floating, for testo 175/177, Forwards information efficiently when limits are exceeded to e.g. horns, lamps, PLC etc.	0554 1769
Battery, 3.6 V/1.9 Ah 1AA, for testo 175-T1/175-T2 and all testo 177 loggers	0515 0177
Transport and Protection	**Part no.**
Lock for wall holder for testo 175/177 dataloggers	0554 1755
Transport case for up to 5 testo 177 dataloggers, testo 575 printer, testo 580 data collector and accessories	0516 1770

Software and Accessories	Part no.
ComSoft 3 Set - Basic with RS 232 interface, Basic software with diagram and table function, incl. desk-top holder, PC connection cable	0554 1774
ComSoft 3 Set - Basic with USB interface, Basic software with diagram and table function, incl. desk-top holders, PC connection cable	0554 1767
ComSoft 3 - Professional with data management, Incl. database, analysis and graphics function, data analysis, trend curve (without interface)	0554 0830
ComSoft 3 - For requirements to CFR 21 Part 11, Incl. database, analysis and graphics function, data analysis, trend curve (without interface)	0554 0821
RS 232 interface for testo 175/177 incl. desk-top holders, PC connection cable, (please also order for ComSoft 3 - Professional)	0554 1757
USB interface, for testo 175/177 incl. desk-top holders, PC conn. cable, (Please order with ComSoft 3 - Professional)	0554 1768
Ethernet adapter, RS 232 - Ethernet incl. software driver, mains unit, Facilitates data communication in network	0554 1711
Calibration Certificates	**Part no.**
ISO calibration certificate/Temperature, Temp. datalogger; calibration points -18°C; 0°C; +60°C	0520 0151
ISO calibration certificate/Temperature, Temp. datalogger; calibration points -8°C; 0°C; +40°C	0520 0171
DKD calibration certificate/Temperature, Temp. datalogger; cal. points -20°C; 0°C; +60°C	0520 0261
DKD calibration cert./Humidity, Humidity datalogger; cal. points 11.3%RH and 75.3%RH at +25°C	0520 0246

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Non-contact temperature measurement – With memory and site management

testo 860-T2

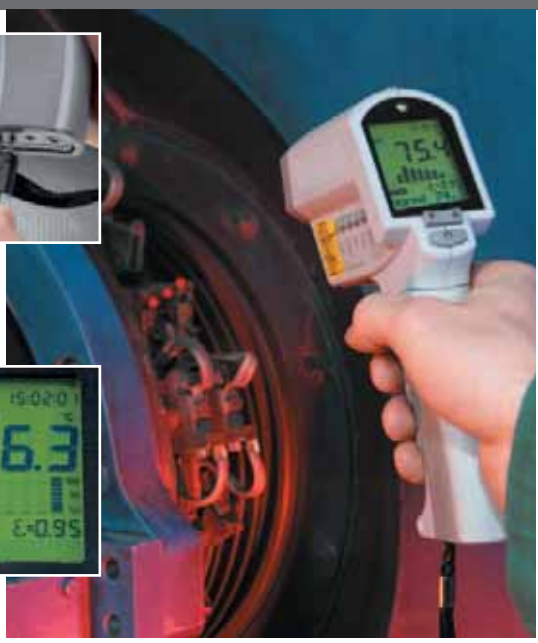
testo 860-T2, the non-contact thermometer with new laser technology. The 60:1 focus is also suitable for measurements over long distances.

testo 860-T3

testo 860-T3 with its close focus (50:1) creates a 6mm wide spot at a distance of 0.3m.

Contact probe can be connected

Materials table (preset emissivities)



Spot measurements on a gas turbine using testo 860-T2

- Internal data memory (100 pos.) with location management
- Alarm function, audible and visual
- Contact probe can be connected
- User-defined emissivity from 0.10 to 1.00

testo 860-T2 , 3 point laser

With standard focus (60:1)
Infrared thermometer with standard focus, incl. transport case and batteries
Part no. 0560 8602

testo 860-T3 , 3 point laser

With close focus (50:1)
Infrared thermometer with close focus, incl. transport case and batteries
Part no. 0560 8603

testo 860-T2 Professional Set

Measuring instrument, fast action surface probe for contact measurement to 500°C, Windows compatible software, RS 232 computer cable, plug-in power unit, transport case
Part no. 0563 8602

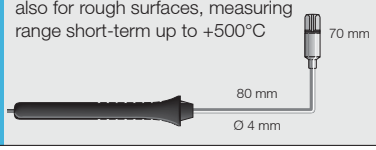
Professional set: testo 860-T3

Thermometer with close focus, fast-action surface probe for contact measurement to 500°C, Windows-compatible software, RS 232 computer cable, plug-in power unit, transport case
Part no. 0563 8603

Technical data

Meas. range	-30 to +900 °C		
Accuracy ±1 digit	±0.75% of mv (+75 to +900 °C) ±0.75 °C (-4.9 to +74.9 °C) ±2 °C (-30 to -5 °C)		
Resolution	0.1 °C		
Reaction time	0.25 s		
Oper. temp.	0 to +45 °C	Storage temp.	-20 to +50 °C
Battery life	10 h	Oper. humidity	+10 to +95 %RH
Dimensions	200 x 170 x 50 mm	Weight	480 g
Reproducibility: ±0.5 % of reading or ±1 °C, the larger value is valid Spectral sensitivity: 8 to 14 µm			

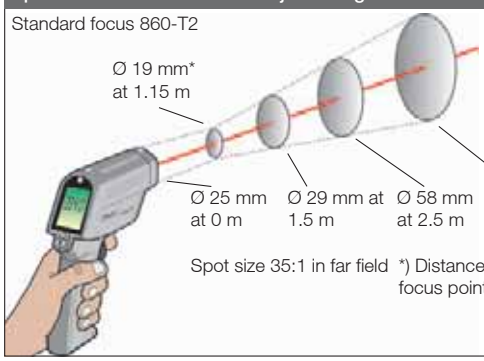
Description	Meas. range	Part no.
Quick-action surface probe with spring-loaded thermocouple, also for rough surfaces, measuring range short-term up to +500°C	-60 to +300 °C	0602 0392
Quick-action surface probe, bent, with sprung thermocouple strip, also for rough surfaces, measuring range short-term up to +500°C	-60 to +300 °C	0602 0992



Accessories Ordering data	Part no.
230 V mains unit (Euro plug), For mains operation of testo 860-T2/T3	0554 0861
Software, Windows compatible, for convenient data analysis	0554 0860
PC connection cable, RS 232, for testo 860 T2-/T3	0409 0861
Analog cable for testo 860, connection cable for flatbed recorder or data logger	0409 0860
Adhesive tape e.g. for polished surfaces (roll, 10 m long, 25 mm wide), E = 0.93, temperature resistant up to +300°C	0554 0051
ISO calibration certificate/Temperature, Infrared thermometer; calibration points +60°C; +120°C; +180°C	0520 0002
ISO calibration certificate/Temperature, Thermometers with surface probe; calibration points +60°C; +120°C; +180°C	0520 0071

Spot size and distance from object being measured

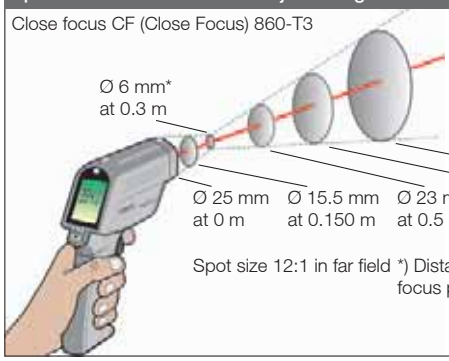
Standard focus 860-T2



Spot size 35:1 in far field *) Distance: Spot size 60:1 at focus point

Spot size and distance from object being measured

Close focus CF (Close Focus) 860-T3



Spot size 12:1 in far field *) Distance: Spot size 50:1 at focus point

Non-contact temperature measurement with laser sighting

testo 830-T1

The fast and versatile infrared thermometer with 1 point laser sighting

- 10:1 optics
- Backlit display
- Audible/optical alarm
- Adjustable emissivity 0.2 to 1.0

testo 830-T2

The testo 830-T2 additionally has a 2 point laser sighting and connection option for an external probe for contact measurement.

- 12:1 optics
- Emissivity with external T/C probe

830-T2, 2 point laser sighting (real measurement point)

830-T2, connection option for an external probe

Temperature spot check on technical systems

testo 830-T1

Infrared thermometer with 1 point laser sighting, adjustable limit values and alarm function

Part no. 0560 8301

testo 830-T2

Infrared thermometer with 2 point laser sighting, adjustable limit values, alarm function and connection of external probes

Part no. 0560 8302

Technical data	Infrared thermometer		Contact measurement (type K)
Meas. range	-30 to +400 °C		-50 to +500 °C
Accuracy ±1 digit	±1.5 °C or 1.5 % of mv (+0.1 to +400 °C) ±2 °C or 2 % of mv (-30 to 0 °C)		±(0.5 °C ±0.5% of mv)
Resolution	0.5 °C		0.1 °C
Oper. temp.	-20 to +50 °C	Battery type	9V block battery
Storage temp.	-40 to +70 °C	Battery life	15 h
Dimensions	190 x 75 x 38 mm	Weight	200 g

Accessories Ordering data
Waterproof immersion/penetration probe Part no. 0602 1292
Leather case to protect measuring instrument, including belt holder Part no. 0516 8302

testo 830-T2 Set

Measuring instrument, fast-action surface probe for contact meas. and leather protection case

Part no. 0563 8302

Hand-held stroboscope – Light-intensive

testo 476

The Pocket Strobe™ hand-held stroboscope measures and inspects rotations and vibrations. It is possible to measure during operation. The stationary image enables inspection and a qualitative assessment of high-frequency moving parts.

- High setting accuracy and stability thanks to dynamic setting dial
- Powerful rechargeable battery pack for min. 1 hour operation time over the whole frequency range
- Automatic trigger to synchronise flash sequence

Light-intensive xenon flashlamp, light intensity approx. 800 lux

rpm measurement on a turbo ventilator in stationary motors

testo 476

Hand-held stroboscope Pocket Strobe™, incl. transport case, recharger with 4 country adaptors and trigger signal plug

Part no. 0563 4760

Accessories Ordering data	Part no.
Belt bag with clip for hand-held stroboscope	0516 4760
Spare xenon flashlamps (2 off) for hand-held stroboscope	0554 4760
ISO calibration certificate/rpm, Optical and mechanical rpm measuring instruments; cal. points 500; 1000; 3000 rpm	0520 0012

Technical data	
Meas. range	+30 to +12500 rpm
Accuracy ±1 digit	±0.01% of mv
Resolution	1 rpm
Dimensions	240 x 65 x 50 mm
Oper. temp.	0 to +40 °C
Weight	465 g

Illumination: 800 Lux at distance of approx. 20 cm
Flash energy: max. 150 mJ
Operating time: 1h at 30 to 12,500 rpm and 23°C (typically)

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Stationary humidity and temperature measurement

Experts are our favourite customers

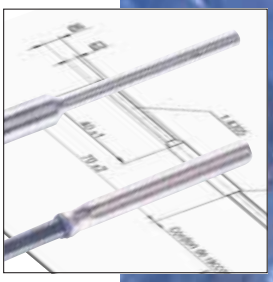
Detlef Higgelke, Head of Testo Academy

...because they know what they are doing. We offer you our support with our field-oriented trainings on measurement procedures, and on physical cohesions.

Even more important is the exchange with other specialists from your branch. After all, we are dealing with your competence and your professional routine when using our instruments.

By the way: 98% of our training participants fully recommend our seminars and training.

Trace humidity measurement in compressed air or dry air using testo 6740



Stationary probes, custom-designed probes, the individual complete solution

Display, alarm, network with the testo 54 built-in displays

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Pressure dewpoint transmitter – Efficient trace humidity measurement

testo 6740

testo 6740 efficiently measures trace humidity in compressed air or dry air/dry gas. Display and control buttons ensure user-friendly menu operation.

Customised combinations

Every measuring point can be optimally configured. With or without a display, with European G 1/2 thread or American NPT 1/2" thread. With or without limit signal output. Directly assembled, with measurement chamber or with cooling coil. All combinations are possible, ensuring your needs are met optimally.

- Efficient measurement of trace humidity
- Calculation of the most important trace humidity variables, also ppm
- The long-term stable testo humidity sensor with protocolled fine adjustment with trace humidity -40 °Ctpd
- 4 to 20 mA in two wire engineering
- Ultra-easy menu operation via buttons: select humidity variable; change scaling; set alarms incl. hysteresis; carry out local 1 point adjustment; test analog signal; call up historic min/max values

Analog output 4 to 20 mA (2 wire), optional with limit signal output (0554 3302)

Convenient operation with bright 7-segment display (optional) (0555 6743/0555 6744)

Monitoring trace humidity: increase safety and cut costs

testo 6741	testo 6743
Pressure dew point transmitter, process connection G ½, without display	Pressure dew point transmitter, process connection G½, with display and control menu
Part no. 0555 6741	**Part no. 0555 6743**

Ordering data	Part no.
Basic instrument (each with plug for analog signal output)	
Pressure dew point transmitter testo 6741, process connection G ½, without display	0555 6741
Pressure dew point transmitter testo 6742, process connection NPT ½", without display	0555 6742
Pressure dew point transmitter testo 6743, process connection G ½, with display	0555 6743
Pressure dew point transmitter testo 6744, process connection NPT ½", with display	0555 6744

Accessories	Part no.
Cable connection plug for power supply/analog output 4 to 20 mA, with 2 floating switch contacts and 2 LEDs	0554 3302
Measurement chamber for optimum flow on humidity sensor (standard pressurised air quick connection / G ½), for 6741/6743	0554 3303
Cooling coil for process temperatures above 50 °C (up to 200 °C)	0554 3304
Scaling adapter for testo 6741/6742 incl. Software	0554 3305
Power supply unit (desk-top) 90 to 264VAC/24VDC (350mA)	0554 1748
Power supply unit (DIN rail mounting) 90 to 264VAC/24VDC (3A)	0554 1749
External testo 54-2 AC display, 2 limit signal outputs (up to 300 VAC, 3 A), 230 VAC	5400 7553
2 m Teflon hose with compressed air connections	0699 2824/4
ISO calibration certificate/Pressure dew point, Two adjustment points -10/-40 °C tpd	0520 0136

Technical data	
Housing	
Dimensions	199.5x37x37 (with standard plug) 203.5x37x37 (with limit signal output plug)
Ambient temperature	-20 to 70 °C
Storage temperature	-40 to 80 °C
Protection class	IP 65
Rotation of housing	By 350° (to align displays)
Sensor and sensor protection	
Humidity sensor	testo humidity sensor with protocolled trace humidity adjustment at -40° Ctpd
Temperature sensor	NTC
Sensor guard	Sintered stainless steel cap
Measuring range	
Pressure dewpoint temp. (trace humidity)	- 60 to +30 °Ctpd
Temperature	0 to 50 °C
Pressure resistance	- 1 bar relative to 50 bar
Meas. range Atmospheric dewpoint	- 80 to - 15 °Ctd (at 30 bar rel.) - 70 to + 10 °Ctd (at 3 bar rel.) - 60 to + 30 °Ctd (at 0 bar rel.)
Meas. uncertainty	
Humidity	+/- 1 K at -10 °Ctpd +/- 4 K at -40 °Ctpd (at 25 °C respectively)
Temp.	+/- 0.5 K (0 to 50 °C)
Analog output	
Signal	4 to 20 mA, two-wire
Scaling	Freely scalable via display/buttons Standard: 4 to 20 mA = -60 to +30 °Ctpd
Output variables	°Ctpd, °Ftpd, °Ctd, °Ftd, %RH, ppmV, mg/m3, °C, °F
Accuracy	+/- 40 µA
Supply	
Voltage	24 VDC (10 to 30 VDC allowed; 20 to 30 VDC with limit signal outputs)
Max. load	10 VDC: 100 Ohm, 30 VDC: 950 Ohm
Limit signal outputs (optional), 0554 3302	
Contacts	2 potential-free contacts, max. 30 VDC/0.5A
EMC	According to directive 89/336 EEC

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Stationary temperature probes

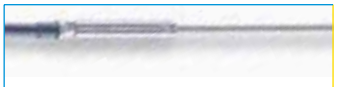
Testo offers a wide range of standard stationary probes. Use the characteristics listed below to choose the one that is suitable for your process media. We will be happy to advise you on our comprehensive special range of probes, if required.

In air

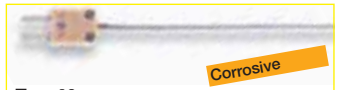
In gases

In liquids

On surfaces



Type 04
Process temperature probe, fixed line connection, very small probe shaft diameter possible



Corrosive

Type 09
Sheathed thermocouple probe, with TC connector for extremely rapid temperature recording. Inconel probe material

Type 02
Immersion probe, probe shaft diameter 3 mm, connected directly to the signal line

Type 15
Screw-on surface TC probe (metal ring)

Type 11
Robust **process temperature probe**, connection via plug-in connection (connector Tmax 80 °C)

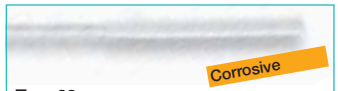
Corrosive

Type 10
Robust **process temperature probe** with precision coupling (Tmax. 200 °C), Inconel probe shaft material

Type 03
Immersion probe, probe shaft diameter 6 mm, connected directly to the signal line

Type 17
Rapid-response **surface probe** (cross-band **with probe shaft**)

Type 20
Ambient temperature probe, plastic or sheet steel housing



Corrosive

Type 08
Immersion probe for extremely corrosive media, probe shaft and line insulation PFA Tmax. 260°C, IP 67

Type 04
Process temperature probe, fixed line connection, very small probe shaft diameter

Type 18
Robust **surface probe** (cross-band), **with thread** M12x1

Type 23
Air duct temperature probe

Type 14
Screwed probe (thread at front) for hard-to-reach measuring points. Pressure-tight up to 500 bar

Type 06
Immersion probe with connecting head

Type 19
Magnetic surface probe (cross-band) with PTFE handle

Type 24
Cold store and storage room temperature probe, with terminals (optional transmitter) in IP65 housing

Type 30
Stationary fitting with connecting head

Type 12
Immersion probe with screw thread M8x1, metal precision plug-in coupling (Tmax. 200°C) pressure-tight to 500 bar

Type 21
Rapid-response **surface probe** (cross-band) **flush front thread** M14x1.5 with lock nuts

Type 31
Measuring element with terminals or transmitter

Type 13
Robust **immersion probe** with thread M8x1, plug-in connection secured by means of thread, connecting line (Tmax. 80°C) pressure-tight to 500 bar

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

Display, alarm, network with stationary testo 54 displays

testo 54

Testo's process displays and process control devices are the ideal complement for Testo's stationary measuring systems. The displays are used wherever process data come together and are monitored.

Does the reading have to be available in legible form immediately beside the location or even on a remote switch cabinet? Is an alarm to be triggered or an assembly activated when a certain alarm level is reached?

The resistance thermometers (Pt 100 and others) and thermocouples (types K, J, T, S and others) can be displayed directly on the testo 54 displays. All you need to do to see the reading in a clear, legible form is to select the input type on site in the well structured user menu. Other types (54-2, -4, -7) are used for displaying analog signals (4 to 20 mA or 0 to 10 VDC)

- Optimum illumination even in dark surroundings (engine rooms etc.)
- * Relay outputs (54-2, 54-3, 54-7, 54-8) can be activated directly with 90 to 250 VAC/300 VDC, max. 3 A, min. 30 mA
- ** Auxiliary energy output 24 VDC: no need for additional supply unit for transmitter
- Data saved for 10 years (EEPROM): scaling limits, input type and other parameters stored securely
- IP 65 from front (cf. drawing below)
- Key locking possible
- Very easy installation
- *** The testo 54-7 contains a totalizer (adds up the analog input values e.g. for flow meas.)
- **** RS485 networking of all industrial probes and transmitters possible: online logging and documentation with ComSoft software

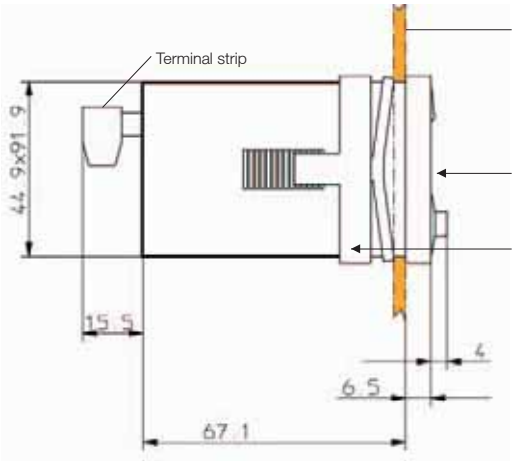
Front view (e.g. testo 54-2AC)

Rear view (e.g. testo 54-2AC)

Easy installation of a display in a switch cabinet

Very easy installation

(Dimensions for testo 54-1, -2, -3, -7, -8)



Front of switch cabinet (cut-out size 92x45 mm)

1. Push Testo 54 in from front
(front size 96 x 48 mm, mounting frame included, slot: 92 x 45 mm)

2. Slide mounting frame on from rear

Dimensions: testo 54-4, -5, -6:

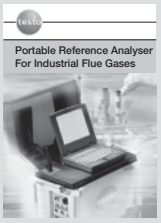
- Front size 48 x 24 mm, Slot 45 x 22.2 mm
- Depth 59 mm

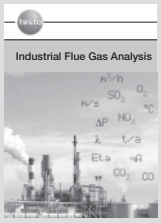
	Overview of types		Inputs		Supply	Memory	Outputs		
	Types	Part no.	Connection Pt 100 + TC	Connection 4 to 20mA 0 to 10V	Voltage	Min./Max. readings memory	2 relay* outputs	24 VDC/50 mA ** auxiliary power output	RS 485 **** output
	54-1DC	5400 6551	✔	–	24 VDC	✔	–	–	–
	54-1AC	5400 7551	✔	–	230 VAC	✔	–	✔	–
	54-2DC	5400 6553	–	✔	24 VDC	–	✔	–	–
	54-2AC	5400 7553	–	✔	230 VAC	–	✔	✔	–
	54-3DC	5400 6554	✔	–	24 VDC	–	✔	–	–
	54-3AC	5400 7554	✔	–	230 VAC	–	✔	✔	–
	54-4DC	5400 6529	–	✔	24 VDC	✔	–	–	–
	54-5DC	5400 6531	Pt 100 only	–	24 VDC	✔	–	–	–
	54-6DC	5400 6532	TC only	–	24 VDC	✔	–	–	–
	54-7DC	5400 6555	–	✔	24 VDC	– ***	✔	–	✔
	54-7AC	5400 7555	–	✔	230 VAC	– ***	✔	✔	✔
	54-8DC	5400 6556	✔	–	24 VDC	–	✔	–	✔
	54-8AC	5400 7556	✔	–	230 VAC	–	✔	✔	✔

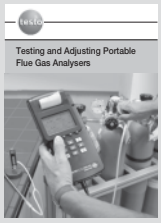
For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818

At Your Service!

Additional documentation







Subject to change without notice.

0981 5214/hd/SI/A/01.2005

For latest prices and delivery to your door visit MyTub Ltd - www.mytub.co.uk - info@mytub.co.uk 0844 556 1818