Just a few “clicks” away from a heating system diagnosis.

testo 320. The highly efficient flue gas analyzer.

Efficient measurement with only one instrument.

The testo 320 is your reliable partner for efficient flue gas analysis.

Are you looking for a multi-function instrument for efficient flue gas analysis? Which confidently solves every task on a heating system? And is still convenient to use? The new testo 320 fulfils all of these requirements, because that is exactly what it was developed for. The testo 320 has a high-resolution colour display which presents the measurement results graphically. It provides simple, self-explanatory measurement menus. The testo 320 is very robust, ergonomic, and at the same time aesthetically designed. Its professional appearance emphasizes your competence. Engineering from Testo “Made in Germany”. With the flue gas analyzer testo 320, you do not simply purchase a tool, you invest in your success.

Just a few “clicks” away from a heating system diagnosis.

The new testo 320 is a high-quality measuring instrument for efficient flue gas analysis. Its wide measuring range makes it a reliable partner for eliminating malfunctions and emergencies, monitoring legal limit values or for daily routine work servicing heating systems. The numerous measurement menus of the testo 320 are clearly structured. Standarized menu procedures, which are stored in the instrument specifically for your country, simplify operation – depending on which standards you are dealing with. This user-friendly feature is made truly convenient by the high-resolution display. It allows a detailed presentation of the measurement procedures, is easily legible even under the worst conditions, and forms the basis for a graphical flue gas analysis – making your work on a heating system considerably easier.

The testo 320 has two measurement sensors for O_2 and CO, as well as a temperature sensor integrated into the flue gas probe, for the direct measurement of temperature, O_2 and CO. From these data, the instrument calculates all relevant flue gas measurement parameters such as CO_2 value, degree of effectivity and flue gas loss. Direct draught or pressure measurements are additionally possible. Using the fine pressure probe, the flue draught or gas pressure values can optionally be measured parallel to the flue gas measurement.

Also available: Sensors for CO measurement with H_2 compensation and CO_{low} measurement. Using the respective probe, the CO_2 content and the CO content in the surroundings can be measured.

The efficient testo 320 thus allows many measurements on heating systems, not only because of its numerous measurement menus, but also because of its probe concept. The probes available for the testo 320 replace many a measuring instrument which you otherwise would need to have additionally to hand. The innovative coupling makes exchanging the probes quick and efficient: Just one bayonet connection for all probes, that means only one line, and with only one attachment, all gas paths are connected to the instrument.

Sensor zeroing in only 30 seconds

Thanks to the automatic zeroing or the gas sensor, the instrument is ready to measure shortly after being switched on – only 30 seconds to start. For the measurement parameters O_2, CO, temperature and pressure, the testo 320 has been TÜV-tested according to EN 50379, Parts 1-3.

Many measurements, one objective: Efficiency

Multiple measurement menus for precise flue gas analysis.

The new flue gas analyzer testo 320 solves every measurement task on a heating system. It offers numerous measurement menus, for example for flue gas, draught, differential pressure and ambient CO measurement. The large selection of variable probes makes the testo 320 even more efficient.

You have everything you need for complex measurements on heating systems in one instrument. With the testo 320, you comply with all legal guidelines, and measure on this basis.

Flue gas measurement

The testo 320 directly measures CO and O_2 , and additionally ambient and flue gas temperature. From these values, and dependent on fuel-specific parameters, the instrument automatically calculates all other measurement parameters such as CO_2 concentration, degree of effectivity and flue gas loss. This provides graphically prepared information on whether the heating system is working efficiently or whether there is a need for optimization.

Gas leak detection

The gas leak probe makes an additional measuring instrument, which you would otherwise need, unnecessary. It allows you to safely identify gas leaks on pipelines. The measurement result can be stored and documented, and if required presented to the customer. The display is shown in ppm.

Required accessories:
Gas leak probe order no. 0603 3330

Required accessories: Hose connection set for separate gas pressure measurement order no. 0554 1203

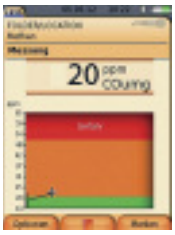
Draught measurement

Draught measurement ensures that the flue gas is correctly drawn off through the flue. This measurement menu is specially intended for checking the respective negative pressure of the heating system. In addition to this the current and maximum flue gas temperature is displayed.

Differential pressure measurement

With the differential pressure measurement, you monitor the gas supply on gas boilers. The difference between the pressure in the pipeline and the ambient pressure are measured and compared with the data supplied by the manufacturer for gas flow pressure and static gas pressure. With the help of the differential pressure, you also adjust the jet pressure, and thus adapt the appliance performance to the the heat requirement.

Ambient CO measurement



Using the flue gas probe or the highly accurate ambient CO probe, you record the CO concentration in the ambient air. The testo 320 automatically recognizes the probe and presents the values in a special menu. Convenient: The adjustable alarm threshold. You are optically and audibly informed when this is exceeded. With the ambient CO probe, ambient CO measurement is possible parallel to the flue gas measurement. This probe also replaces a separate measuring instrument.

Differential temperature measurement

With the differential temperature menu, you quickly and easily measure the discrepancy between the flow and return of a heating system. How well is the system adjusted? If necessary, you immediately implement energy-saving measures on the heating system.

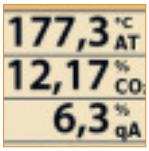
Required accessories:
Ambient CO probe order no. 0603 3331

Required accessories:
Differential temperature set order no. 0554 1208

Product properties in detail.

See what makes the efficient testo 320 special.

High-resolution graphic display
The measurement menus and measurement values are presented in detail and always well legible.



Sensor monitoring
Integriated traffic light system which continuously monitors the sensor functionality.

Stamp of approval
The flue gas analyzer testo 320 is TÜV-tested according to EN 50379, Parts 1-3.

Automatic zeroing of sensor
Automatic zeroing of the gas sensor in only 30 seconds after starting, which can be cancelled if not required.

Lithium rechargeable battery
Operation with lithium rechargeable battery (1500 mAh) – no need to change battery, up to eight hours running time, charging via USB possible.

Attachment
Integrated magnets for fast attachment to burner.

Probe filter
Easy exchange of probe filter.

Smoke tester **testo 308**
Information can be found under www.testo.com.

Memory
Up to 500 measurement protocols can be stored and called up in the memory of the testo 320

Efficient exchange of probes
Fast and easy exchange of probes via the probe coupling. All gas paths are connected to the instrument at once with the bayonet connection.

Sensor exchange by the user
Easy exchange of the sensors by the user – no adjustment necessary

Flexibility with modular proben
A range of probe lengths and diameters ensure a high degree of flexibility for all applications. To exchange the probe shaft, it is simply placed on the probe handle and engages.

Robust design
Robust, durable instrument – ideally suited even to rough surroundings.

Condensate trap
Integrated condensate trap – very easily emptied.

easyheat. Data management for flue gas analysis.

The flue gas analyzer testo 320 stands out thanks to its high level of measurement accuracy and easy operation. And not only on the heating system itself, but also in all further work steps. After all, the results need to be evaluated and processed. The testo 320 has an integrated memory in which you can save up to 500 measurement protocols. Communcation with external appliances such as printers, PDAs or PCs takes place via convenient interfaces. Managed by the easyheat software, you transfer your data easily and securely via Bluetooth, USB and infrared.

A Bluetooth or an infared printer is available to you for the testo 320, for printing out measurement values directly on site. This allows you to present the optimization of the heating system to your customers “black on white”, and in case of complaints, you can always prove that you have worked correctly. In addition to this, easyheat simplifies the management and archiving of your valuable customer data and measurement values on a laptop on site or a PC at home. With easyheat, you create individual measurement protocols. This saves you time and effort for the documentation of your work.

Exchange of probes in a few seconds.

The flexible probe concept makes the testo 320 an allround talent.

The Testo probe range allows many more measurements on a heating system. Thanks to the probe coupling of the testo 320, exchanging is especially efficient. All probes are connected via a fast connection. All gas paths are connected to the instrument at once with the bayonet connection. You can change the particle filter which protects the gas paths from dirt just as quickly. Whether a multiple-hole probe, a dual wall clearance probe or a flexible flue gas probe – the wide selection allows adaptation to any application. Different lengths and diameters, which also occur in a standard flue gas pipe, mean you are never left in a boiler room without the right measurement solution. And with the help of the fine pressure probe, you can take draught and gas pressure measurements parallel to the flue gas measurement. This means you have recorded all important values for the adjustment of the system with the testo 320. Thanks to the zero-point adjustment, external temperature influences have no effect on the measurement value. With regard to accuracy, there are at present no other probes on the market which compare to the Testo fine pressure probe.

Accessories

Available in retail or online at www.testo.com/320

Probes and connections		Order no.	
	Compact flue gas probe 300 mm	0600 9741	
	Compact flue gas probe 180 mm	0600 9740	
	Modular flue gas probe 300 mm	0600 9760	
	Modular flue gas probe 180 mm	0600 9760	
	Flexible flue gas probe	0600 9764	
	Flexible probe shaft modular 300 mm	0554 9764	
	Hose connection set for separate gas pressure measurement	0554 1203	
	Gas leak probe	0632 3330	
	Ambient CO probe	0632 3331	
	Differential temperature set	0554 1208	
	Fine pressure probe	0638 0330	
	Ambient CO_2 probe (connection line 0430 0143)	0632 1240	
	Dual wall clearance probe for O_2 air input measurement	0632 1260	
	Combustion air probe with cone 190 mm	0600 9787	
	Combustion air probe with cone 60 mm	0600 9797	
	Very fast reaction surface probe	0604 0194	

Accessories and measuring instruments.

Available in retail or online at www.testo.com/320

		Order no.	
	Soot pump	0554 0307	
	Testo Bluetooth printer	0554 0553	
	Testo IRDA printer	0554 0568	
	Spare thermal paper for printer (6 rolls), measuring data documentation can be read for up to 10 years	0554 0549	
	easyheat PC analysis software	0554 3332	
	USB mains unit incl. cable	0554 1105	
	testo 320 system case flat	0516 3334	
	testo 320 system case high	0516 3331	

Measuring instruments with options	**Order no.**	
testo 320 flue gas analyzer, incl. O_2-/CO sensor without H_2-compensation, incl. calibration protocol; colour graphic display	0632 3200	
Option H_2-compensated CO sensor		
Option CO_{low} sensor		
Option Bluetooth		

Measuring instrument accessories		
testo 320 spare rechargeable battery	0515 0046	
Spare dirt filter, modular probe	0554 3385	
Spare dirt filter, compact probe	0554 0040	
ISO calibration certificate	0520 0003	

Other probes	**Order no.**	
Modular flue gas probe incl. cone for fixing; thermocouple NiCr-Ni; hose 2.2 m; dirt filter; length 300 mm; Ø 8 mm; Tmax. 500 °C; TÜV-tested	0600 9761	
Modular flue gas probe incl. cone for fixing; thermocouple NiCr-Ni; hose 2.2 m; dirt filter; length 180 mm; Ø 6 mm; Tmax. 500 °C	0600 9762	
Modular flue gas probe incl. cone for fixing; thermocouple NiCr-Ni; hose 2.2 m; dirt filter; length 300 mm; Ø 6 mm; Tmax. 500 °C	0600 9763	

Accessories and product sets.

Available in retail or online at www.testo.com/320

Accessories modular probe	Order no.	
Probe shaft modular; 180 mm; Ø 8 mm; Tmax 500 °C	0554 9760	
Probe shaft modular; 180 mm; Ø 6 mm; Tmax 500 °C	0554 9762	
Probe shaft modular; 300 mm; Ø 8 mm; Tmax 500 °C	0554 9761	
Probe shaft length 335 mm, incl. cone, Ø 8 mm, Tmax 1000 °C	0554 8764	
Probe shaft; length 700 mm, incl. cone; Ø 8 mm; Tmax 1000 °C	0554 8765	
Flexible probe shaft; length 330 mm; Ø 10 mm, Tmax. 180 °C	0554 9764	
Multi-hole probe shaft; length 300 mm; Ø 8 mm; for CO mean value calculation	0554 5762	
Multi-hole probe shaft; length 180 mm; Ø 8 mm; for CO mean value calculation	0554 5763	
Hose extension; 2.8 m; extension line probe-instrument	0554 1202	
Cone Ø 8mm; steel; with spring clamp and grip; Tmax 500 °C.	0554 3330	
Cone Ø 6 mm; steel; with spring clamp and grip; Tmax 500 °C	0554 3329	

Combustion air temperature probe	Order no.	
Combustion air temperature probe, immersion depth 300 mm	0600 9791	
Combustion air temperature probe, immersion depth 190 mm	0600 9787	
Combustion air temperature probe, immersion depth 60 mm	0600 9797	

Other temperature probes	Order no.	
Mini ambient air probe	0600 3692	

Gas sensor	Order no.	
Spare sensor O_2	0393 0003	
Spare CO sensor (without H_2-compensation)	0393 0053	
Spare CO sensor (H_2-compensated)	0393 0105	
Spare sensor CO_{low}	0393 0103	

Ordering data

testo 320 set for service technicians and heating constructors

testo 320	0632 3220
Option: H_2-compensated CO sensor	
Mains unit 5V 1A w. USB cable	0554 1105
testo 320 basic system case	0516 3334
testo 320 hose connection set	0554 1203
Testo fast printer IRDA	0554 0549
Modular flue gas probe, 300 mm, Ø 6 mm	0600 9763
Combustion air probe with cone	0600 9787

Set order no.: 0563 3220 75

testo 320 set for fitters

testo 320	0632 3220
Mains unit 5V 1A w. USB cable	0554 1105
testo 320 basic system case	0516 3334
testo 320 hose connection set	0554 1203
Testo fast printer IRDA	0554 0549
Modular flue gas probe, 300 mm, Ø 6 mm	0600 9763
Combustion air probe with cone	0600 9787

Set order no.: 0563 3220 70

Technical data

	Measuring range	Accuracy ±1 Digit	Resolution	Adjustment time t_{90}
Temperature	-40 to +1200 °C	Accuracy: ±0,5°C (0 to 100°C) Accuracy: ±0.5% of m.v. remaining range	0.1 °C -40 to +999,9°C 1 °C; from +1000°C:	
Draught measurement	-9.99 hPa to +40.00 hPa	± 0.02 hPa or ± 5% of m.v. (at -0,50 to +0,60 hPa) ± 0.03 hPa (0.61 to 3.00 hPa) ± 1.5% of m.v. (at 3.01 to 40.00 hPa))	0.01 hPa with fine draught option 0.001 hPa	
Pressure measurement	0 to +300 hPa	±0.5 hPa (0.0 to +500 hPa) ± 1 % of m.v. (at 50.1 to 100.0 hPa) ± 1,5 % of m.v. (at 100,1 to 300,0 hPa)	0.1 hPa with fine pressure option 0.01	
O_2measurement	0 to 21 vol.%	± 0.2 vol.%	01 vol. %	< 20 sec
CO measurement (without H_2 compensation)	0 to 4000 ppm	± 20 ppm (0 to 400 ppm) ± 5% of m.v. (401 to 2000 ppm) ± 10% of m.v. (2001 to 4000 ppm)	1 ppm	< 60 sec
CO measurement (H_2-compensated)	0 to 8000 ppm	± 10 ppm or +/-10% of m.v. (0 to 200 ppm) ± 20 ppm or +/-5% of m.v. (201 to 2000 ppm) ±10% of m.v. (2001 to 8000 ppm)	1 ppm	< 40 sec
Efficiency testing (Eta)	0to120 %		01 %	
Exhaust gas loss	0 to 99.9 %		01 %	
CO_2 determination digital calculation from O_2	0 to CO_2 max	± 0.2 vol.%	01 %	
Option CO_{low} measurement (H_2-compensated)	0 to 500 ppm	±2 ppm (0 to 39 ppm) ±5% of m.v. (40 to 500 ppm)	01 ppm	< 40 sec
Ambient CO measurement (with CO probe)	0 to 500 ppm	±5 ppm (0 to 100 ppm) ±5 % of m.v. (>100 ppm)	1 ppm	
Gas leak measurement for combustible gases (with gas leak detector probe)	0 to 10,000 ppm CH_4 / C_3H_8	Signal Optical display (LED) Audible alarm via buzzer		< 2 sec
Ambient CO_2 measurement (with ambient CO_2 probe)	0 to to 1 vol. % 0 to 10,000 ppm	± 50 ppm or ±2% of m.v. (0 to 5000 ppm) ± 100 ppm or ±3% of m.v. (5001 to 100000 ppm)		

General technical data

Storage temp.	-20 to +50 °C
Oper. temp.	-5 to +45 °C
Power supply	Rech. batt.: 3.7 V / 2400 mAh Mains unit: 6 V/1.2 A
Memory	500 readings

Display	Colour graphic display with 240 x 320 Pixel
Weight	573 g
Dimensions	L 240 x W 85 x H 65 mm
Warranty	Instrument/probes/gas sensors: 24 months Rech. batt.: 12 months

XXXX XXXX/msp/Q/02.2012