

Highly efficient flue gas analyzer

testo 320 – Just a few “clicks” away from a heating system diagnosis

High-resolution colour graphic display

Quick and easy menu structure

Storage space for 500 measurement values

Measurement of flue gas, draught, pressure, ambient CO, differential temperature and gas leak detection

O₂ and CO sensor and flue gas probe with temperature probe

TÜV-tested according to EN 50379, Parts 1-3



- O₂
- CO₂
- CO
- HPA
- QA
- ETA
- °C

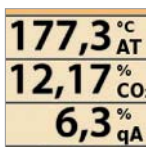
The new testo 320 is a high-quality measuring instrument for efficient flue gas analysis. Its wide measuring range makes it a reliable partner for eliminating malfunctions and emergencies, monitoring legal limit values or for daily routine work servicing heating systems. The numerous measurement menus of the testo 320 are clearly structured.

Standardized menu procedures, which are stored in the instrument specifically for your country, simplify operation – depending on which standards you are dealing with. The high-resolution display allows a detailed presentation of the measurement procedures and is easily legible even under the worst conditions.

Product properties

High-resolution colour graphic display

The measurement menus and measurement values are presented in detail and always easily legible.



Sensor monitoring

Integrated traffic light system which continuously monitors the sensor functionality.



Fast sensor zeroing

Automatic zeroing of the sensor in only 30 seconds after start-up, and which can be cancelled if not required.



Sensors exchangeable by the user

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



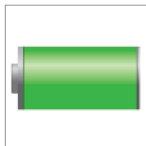
Memory

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



Lithium battery

Operation with a Lithium battery (1500mAh) – no battery change necessary, up to eight hours running time, charging via USB connection possible.



Attachment

Integrated magnets for fast attachment to burner/boiler.





Stamp of approval

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



Robust design

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



Condensate trap

Integrated condensate trap – very easily emptied.



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.



Probe filter

Easy exchange of probe filter.



Flexibility with modular probes

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.

Ordering data / Accessories

testo 320 set for chimneysweeps

| | |
|-----------|--|
| 0632 3220 | testo 320 with H ₂ -compensated CO sensor and Bluetooth |
| 0554 1105 | USB mains unit |
| 0600 9761 | Flue gas probe modular (length 300 mm, Ø 8 mm) |
| 0600 9787 | Combustion air probe (length 190 mm) |



testo 320 set for heating constructors

| | |
|-----------|--|
| 0632 3220 | testo 320 with H ₂ -compensated CO sensor |
| 0554 1105 | USB mains unit |
| 0516 3300 | System case (height: 130 mm) |
| 0554 0549 | Testo fast printer IRDA |
| 0600 9741 | Compact flue gas probe (length 300 mm, Ø 6 mm) |
| 0600 9787 | Combustion air probe (length 190 mm) |



| Measuring instrument with options | Part no. |
|--|-----------|
| testo 320 flue gas analyzer; incl. O ₂ -/CO sensor without H ₂ -compensation, incl. calibration protocol; graphic display; | 0632 3220 |
| Option H ₂ -compensated CO sensor | |
| Option CO _{low} sensor | |
| Bluetooth option | |
| Spare gas sensors | Part no. |
| Spare sensor O ₂ for testo 320 | 0393 0005 |
| Spare CO sensor (without H ₂ -compensation) for testo 320 | 0393 0053 |
| Spare CO sensor H ₂ -compensated for testo 320 | 0393 0105 |
| Spare CO _{low} sensor for testo 320 | 0393 0103 |
| Smoke tester with oil and soot sheet, for measuring soot in flue gas, excl. cone (part no. 0554 9010) | 0554 0307 |
| BLUETOOTH printer set with wireless BLUETOOTH interface; incl. 1 roll thermal paper, rechargeable battery and mains unit | 0554 0553 |
| Testo fast printer IRDA with wireless infrared interface; 1 roll thermal paper; 4 AA batteries | 0554 0549 |
| Spare thermal paper for printer, permanent ink | 0554 0568 |
| PC analysis software easyheat, for presenting measurement procedures as diagrams, tables and for managing customer data | 0554 3332 |
| USB mains unit incl. cable | 0554 1105 |
| Spare battery | 0515 0046 |
| System case (height: 130 mm) for instrument, probes and accessories | 0516 3300 |
| System case with double base (height: 180 mm) for instrument, probes and accessories | 0516 3301 |
| ISO calibration certificate/flue gas | 0520 0003 |

Probes

| Compact basic flue gas probes | Part no. | |
|--|-----------------|--|
| Flue gas probe compact; length 180 mm; Ø 6 mm; Tmax. 500 °C; probe stop; NiCr-Ni thermocouple, 2.2 m hose and particle filter included | 0600 9740 | |
| Flue gas probe compact; length 300 mm; Ø 6 mm; Tmax. 500 °C; probe stop; NiCr-Ni thermocouple, 2.2 m hose and particle filter included | 0600 9741 | |

| Modular flue gas probes | Part no. | |
|--|-----------------|--|
| Flue gas probe modular, incl. cone for attachment; thermocouple NiCr-Ni; hose 2.2 m; particle filter; length 180 mm; Ø 8 mm; Tmax. 500 °C; TÜV-tested | 0600 9760 | |
| Flue gas probe; length 300 mm; Ø 8 mm; Tmax. 500 °C; TÜV approval; probe stop; NiCr-Ni thermocouple; 2.2 m hose and particle filter included | 0600 9761 | |
| Flue gas probe; length 180 mm; Ø 6 mm; Tmax. 500 °C; probe stop; NiCr-Ni thermocouple; 2.2 m hose and particle filter included | 0600 9762 | |
| Flue gas probe; length 300 mm; Ø 6 mm; Tmax. 500 °C; probe stop; NiCr-Ni thermocouple; 2.2 m hose and particle filter included | 0600 9763 | |
| Flue gas probe flexible; length 330 mm; Tmax. 180 °C; short-term 200 °C; bending radius max. 90 °C for measuring at inaccessible points; probe stop; NiCr-Ni-thermocouple; 2.2 m hose and particle filter included | 0600 9764 | |

| Probe accessories | Part no. | |
|--|-----------------|--|
| Probe shaft; length 180 mm; 8 mm; Tmax. 500 °C | 0554 9760 | |
| Probe shaft; length 300 mm; Ø 8 mm; Tmax. 500 °C | 0554 9761 | |
| Probe shaft flexible; length 330 mm; Ø 10 mm; Tmax. 180 °C | 0554 9764 | |
| Probe shaft multi-hole; length 300 mm; Ø 8 mm; for mean CO calculation | 0554 5762 | |
| Probe shaft multi-hole; length 180 mm; Ø 8 mm; for mean CO calculation | 0554 5763 | |
| Hose extension; 2.8 m; extension cable for probe | 0554 1202 | |
| Hose connection set with adapter for separate gas pressure measurement | 0554 1203 | |
| Spare dirt filter, modular probe; 10 off | 0554 3385 | |
| Spare particle filter, compact probe; 10 off | 0554 0040 | |

Probes

| Additional probes | Part no. |
|--|-----------------|
| Dual wall clearance probe for O ₂ supply air measurement | 0632 1260 |
| Gas leak detection probe; 0 to 10000 ppm CH ₄ /C ₃ H ₈ | 0632 3330 |
| Ambient CO probe, for detecting CO in buildings and rooms; 0 to +500 ppm | 0632 3331 |
| Ambient CO ₂ probe, Plug-in head, connection cable 0430 0143 or 0430 0145 required | 0632 1240 |
| Differential temperature set; consisting of 2 Velcro probes and temperature adapter | 0554 1208 |
| Fine pressure probe: highly accurate probe for the measurement of differential pressure and temperature, as well as Pitot tube measurement of flow velocities (see technical data) | 0638 0330 |
| Capillary hose set for 4 Pa measurement | 0554 1215 |

| Combustion air temperature probes | Part 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 |

| Additional temperature probes | Part no. |
|---|-----------------|
| Mini ambient air probe; for separate ambient air temperature measurement; 0 to +80 °C | 0600 3692 |
| Very fast reaction surface probe | 0604 0194 |
| Connection cable | 0430 0143 |

Technical data

| | Measuring range | Accuracy ± 1 digit | Resolution | Adjustment time t_{90} |
|---|---|---|---|-------------------------------|
| Temperature | -40 to +1200 °C | ± 0.5 °C (0 to +100.0 °C) ± 0.5 % of m.v. (remaining range) | 0.1 °C (-40 to +999,9 °C) 1 °C (> +1000 °C) | |
| Draught measurement | -9.99 to +40 hPa | ± 0.02 hPa or $\pm 5\%$ of m.v. (-0.50 to +0.60 hPa) ± 0.03 hPa (+0.61 to +3.00 hPa) $\pm 1.5\%$ of m.v. (+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 50.0 hPa) $\pm 1\%$ of m.v. (50.1 to 100.0 hPa) $\pm 1.5\%$ of m.v. (remaining range) | 0.1 hPa with fine draught option 0.01 hPa | |
| O₂ measurement | 0 to 21 Vol. % | ± 0.2 Vol. % | 0.1 Vol. % | <input type="checkbox"/> 20 s |
| CO measurement (without H₂-compensation) | 0 to 4000 ppm | ± 20 ppm (0 to 400 ppm) $\pm 5\%$ of m.v. (401 to 2000 ppm) $\pm 10\%$ of m.v. (2001 to 4000 ppm) | 1 ppm | <input type="checkbox"/> 60 s |
| CO measurement (H₂-compensated) | 0 to 8000 ppm | ± 10 ppm or $\pm 10\%$ of m.v. (0 to 200 ppm) ± 20 ppm or $\pm 5\%$ of m.v. (201 to 2000 ppm) $\pm 10\%$ of m.v. (2001 to 8000 ppm) | 1 ppm | <input type="checkbox"/> 40 s |
| Determination of degree of effectivity (Eta) | 0 to 120% | | 0.1% | |
| Flue gas loss | 0 to 99.9% | | 0.1% | |
| CO₂ determination digital calculation from O ₂ | 0 to CO ₂ max | ± 0.2 Vol. % | 0.1 Vol. % | |
| Option CO_{low} measurement (H₂-compensated) | 0 to 500 ppm | ± 2 ppm (0 to 39 ppm) $\pm 5\%$ of m.v. (40 to 500 ppm) | 0.1 ppm | <input type="checkbox"/> 40 s |
| Ambient CO measurement (with CO probe) | 0 to 500 ppm | ± 5 ppm (0 to 100 ppm) $\pm 5\%$ of m.v. (> 100 ppm) | 1 ppm | |
| Gas leak measurement for flammable gases (with gas leak detection probe) | 0 to 10.000 ppm CH ₄ / C ₃ H ₈ | Signal optical display (LED) audible signal via buzzer | | <input type="checkbox"/> 2 s |
| Ambient CO₂ measurement (with ambient CO₂ probe) | 0 to 1 Vol. % 0 to 10.000 ppm | ± 50 ppm or $\pm 2\%$ of m.v. (0 to 5000 ppm) ± 100 ppm or $\pm 3\%$ of m.v. (5001 to 10000 ppm) | | |
| Differential pressure, flow velocity and temperature via fine pressure probe | ± 10.000 Pa 0.15 to 3 m/s max. -40 to +1,200 °C (dependent on probe) | ± 0.5 Pa (0 to 9.99 Pa) plus ± 1 Digit $\pm 3\%$ of m.v. (10 to 10.000 Pa) plus ± 1 Digit ± 0.5 °C (-40 to 100 °C) ± 0.5 % of m.v. (rem. measuring range) plus probe accuracy | 0.1 m/s 0.1 °C | |

General technical data

| | | | |
|-----------------------|---|------------|---|
| Storage temperature | -20 to +50 °C | Display | Colour graphic display 240 x 320 pixels |
| Operating temperature | -5 to +45 °C | Weight | 573 g |
| Power supply | Battery: 3.7 V / 2,400 mAh Mains unit: 6 V / 1.2 A | Dimensions | 240 x 85 x 65 mm |
| Memory | 500 measurement values | Warranty | Instrument/probe/gas sensors: 24 months Battery: 12 months |

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