

testo 335 - New measurement engineering for monitoring emissions

How many ppm NO are there really?



Knut Hoyer, Head of Product Development Gas

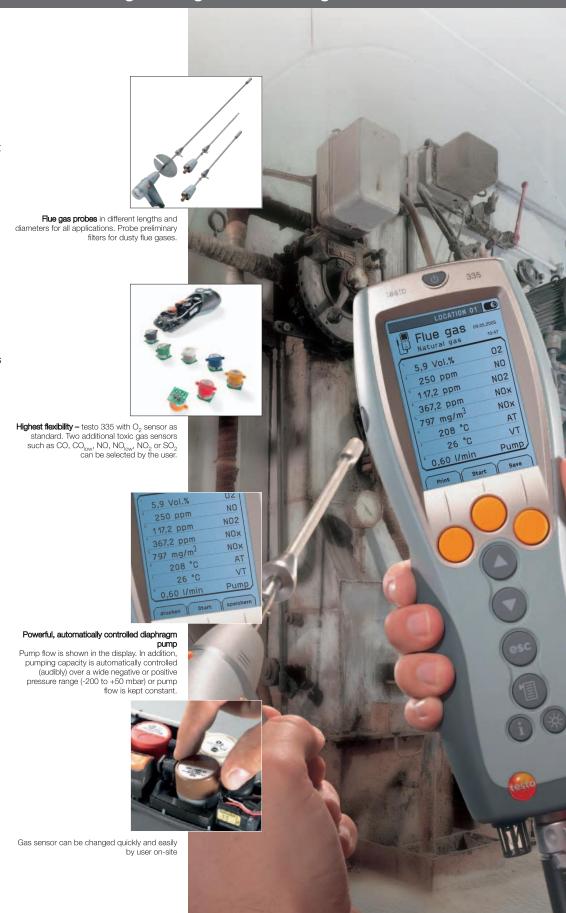
How sure can you really be that your analyzer measures exactly what it should be measuring? Our exclusive sensors, developed especially for

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.





Compact flue gas analyzer

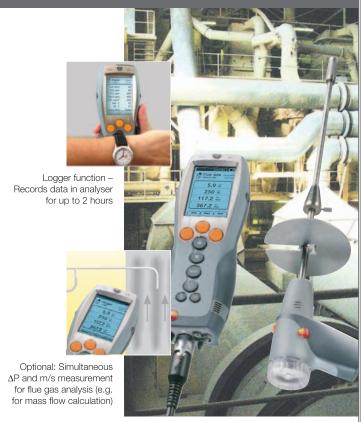
106 Westpoint Centre 396 Scarborough Beach Road Telephone 1800 999 902 Facsimile 1800 999 903 http://www.gastech.com.au

testo 335

testo 335 is the new generation flue gas analyzer, specially tailored to industrial applications' requirements. testo 335 can be used for all emission monitoring applications by the operators of industrial furnaces such as processing and power plants, by service technicians for burner/furnace manufacturers, for plant construction as well as for stationary motors. Even spot measurements for up to 2 hours are possible.

- Two toxic sensors freely selectable – CO, CO_{low}, NO, NO_{low}, NO₂, SO₂
- Two different measurement range extensions – To continue measurement despite high CO concentrations
- <u>- Standard:</u> Single dilution Slot
 2 (CO, NO₂, SO₂) with dilution factor 5
- Option: Dilution for all sensors with dilution factor 2
- Option: Parallel ΔP or m/s measurement for flue gas analysis – Simultaneous, convenient flow or mass flow measurement
- Powerful, automatically controlled diaphragm pump – Benefits:

- Constant pump flow over a wide negative or positive pressure range (-200 to +50 hPa)
- Gas sampling hose up to max. 7.8 m long (corresponds to two hose extensions, each 2.8 m)
- 18 standard fuels and an additional 10 user-defined fuels
- Fuel data is calculated using the new "easyEmission" software
- Industrial probes with a new probe preliminary filter
 Up to max. 1000 °C
- Graphic representation of sensor calibration data
- Calculated flue gas dewpoint parameter
- Logger function Records data in analyser for up to 2 hours
- Initialisation of gas sensors without removing probe from flue
- Accuracy approved for O₂, CO₂, CO, NO, NO_{low}, °C, hPa to EN Standard 50379 Part 2



Measurement in dusty flue gases with probe preliminary filter

testo 335

testo 335 flue gas analyzer, rechargeable battery and calibration protocol included, equipped with O2 sensor

Part no. 0632 3350

A second gas sensor must be fitted in testo 335, the instrument will not be able to function otherwise. A maximum of two additional sensors can be fitted.

See Ordering Data on Page 10

Good reasons for flue gas analysis

Flue gas duct

testo 335's easy handling and its independence of the power supply system (battery operation) enable measurements at difficult-to-access points in a flue gas duct. Filter function is checked quickly and easily using differential pressure measurement (optional).

Monitoring emissions

Flow speed is also measured during quick emission checks. It is possible, for example, to check the position of a stationary sampling probe. testo 335 can be calibrated very accurately with test gas when measuring emission levels.

Combustion chamber analysis

testo 335 has very wide measurement ranges to reliably detect CO "nests" and check for reducing atmosphere. Sampling probes can be used at temperatures up to 1800 °C.

Tuning burners

For the purpose of efficient burner tuning, testo 335 calculates air ratio and efficiency. Combustion chamber pressure (optional) is measured at the same time as flue gas values. This is particularly important for multi-stage burners.



Accessories

106 Westpoint Centre 396 Scarborough Beach Road Telephone 1800 999 902 Facsimile 1800 999 903 http://www.gastech.com.au

Versatile infrared printer

The IRDA printer – wireless with infrared interface – saves data for printing which saves time since the analyser is ready to operate immediately after data transfer. The printer can be used anywhere.

Testo printer with wireless IRDA and infrared interface, 1 roll of thermal paper and 4 AA batteries

Part no. 0554 0547



IRDA printer saves data – Instrument is ready to operate immediately after data transfer

Software: "easyEmission"

The complete solution to manage data for flue gas analysis

- User-defined measurement intervals (1 measurement/second up to 1 measurement/hour)
- Readings transmitted in seconds to Microsoft EXCEL®
- User-defined fuels
- Readings are shown in table or graphics form
- Easy generation of customer-specific measurement protocols

"easyEmission" software for testo 335, with USB cable to connect instrument to PC

Part no. 0554 3334



Software with analysis and graphics functions, online measurement

Holster (SoftCase)

The holster (SoftCase) protects the instrument from impact. It is made of elastic plastic and a practical strap facilitates easy transport.



Case

Transport case

Part no. 0516 3350

Transport case for safe and convenient storage of measuring instrument, probe, accessories. Flue gas probe is positioned in lid.



Transport case, easy-find storage of instrument, probes and accessories

Holster (SoftCase) for testo 335 with belt

Part no. 0516 0335

Instrument/Options	Part no.
resto 335 flue gas analyzer, rechargeable battery and calibration protocol included, equipped with O2 sensor	0632 3350
A second gas sensor must be fitted in testo 335, the instrument will not be able to function otherwise. A maximum of two additional	al sensors can be fitted.
Option: CO gas sensor, 0 to 10000 ppm	0440 3988
Option: COlow sensor, 0 to 500 ppm	0440 3936
Option: NO gas sensor, built-in in analyser box, 0 to +3000 ppm NO	0440 3935
Option: NOlow gas sensor, 0 to +300 ppm NO	0440 3928
Option: NO2 gas sensor, 0 to +500 ppm NO ₂	0440 3926
Option: SO2 gas sensor, 0 to +5000 ppm SO ₂	0440 3927
Option: dilution of all sensors	0440 3350
Option: pressure/flow measurement (not upgradable)	0440 3351
Accessories	Part no.
100-240 V mains unit, for mains operation or batt. recharging in analyser	0554 1086
"easyEmission" software for testo 335, with USB cable to connect instrument to PC	0554 3334
Testo printer with wireless IRDA and infrared interface, 1 roll of thermal paper and 4 AA batteries	0554 0547
Spare thermal paper for printer (6 rolls), permanent ink, measurement data documentation legible for up to 10 years	0554 0568
Spare thermal paper for printer (6 rolls)	0554 0569
Holster (SoftCase) for testo 335 with belt	0516 0335
Spare rech. batt. w/ charging station	0554 1087
Spare particle filter (10 off)	0554 3385
Instrument cleaner (100 ml), for hassle-free and fast removal of dirt from housing, display screen, keypad, probe handle and probe cable	0554 1207
Multiple licence software "easyEmission" for testo 335	0554 3338
Software upgrade of "easyEmission" testo 350-S/-XL to "easyEmission" testo 335	0450 3334
Software upgrade of "easyEmission" testo 335 to "easyEmission" testo 350-S/-XL	0450 3335
Cases	Part no.
Transport case, for measuring instrument and probes	0516 3350
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
Instrument options as upgrades	
Information about instrument upgrades and prices available on request.	



Probes

Standard gas sampling probes			Part no.
Flue gas probe, modular, 335 mm immersion depth, incl. NiCr-Ni (TI) Tmax 500°C and hose 2.2 m	probe stop, thermocouple		0600 9766
Flue gas probe, modular, 700 mm immersion depth, incl. NiCr-Ni (TI) Tmax 500°C and hose 2.2 m			0600 9767
Flue gas probe, modular, 335 mm immersion depth, incl. NiCr-Ni (TI) Tmax 1000°C and hose 2.2 m		Ø8 ^{mm}	0600 8764
Flue gas probe, modular, 700 mm immersion depth, incl. ViCr-Ni Tmax 1000°C and hose 2.2 m		Modular flue gas probes, available in 2 lengths	0600 8765
Flue gas probe, modular, with preliminary filter, 335 mm ir probe stop, thermocouple NiCr-Ni (TI) Tmax 1000°C and	hose 2.2 m	incl. probe stop, NiCr-Ni thermocouple, 2.2 m hose and particle filter	0600 8766
Flue gas probe, modular, with preliminary filter, 700 mm ir probe stop, thermocouple NiCr-Ni (TI) Tmax 1000°C and			0600 8767
Probe accessories			Part no.
Hose extension, 2.8 m, extension cable for probe and an			0554 1202
Probe shaft with preliminary filter, 335 mm long, with probe s			0554 8766
Probe shaft with preliminary filter, 700 mm long, with probe s	top, Ø 8 mm, Tmax 1000 °C	20	0554 8767
Spare sintered filter (2 off)	500.00	Ø 8 mm Ø 10 mm	0554 3372
Probe shaft, 335 mm long, with probe stop, Ø 8 mm, Tm			0554 9766
Probe shaft, 700 mm long, with probe stop, Ø 8 mm, Tm		2	0554 9767
Probe shaft, 335 mm long, with probe stop, Ø 8 mm, Tm			0554 8764
Probe shaft, 700 mm long, with probe stop, Ø 8 mm, Tm			0554 8765
Gas sampling probes for measurements on industrial Flue gas probe for industrial motors, 335 mm immersion depth, wi condensate trap and heat protection plate, Tmax 1000 °C, special neasurements, 2.2 m long	th probe stop, built-in	TT*	Part no. 0600 7560
Flue gas probe for industrial motors with probe shaft prefilter, 335 robe stop, built-in condensate trap and heat protection plate, Tm NO ₂ /SO ₂ measurements, 2.2 m long			0600 7561
Accessories for the gas sampling probes for measure	ements on industrial engines	s	Part no.
Thermocouple for exhaust gas temperature measuremen	t (NiCr-Ni, length 400 mm, Tn	max. +1000 °C), with 2.4 m connection cable	0600 8894
Spare particle filter (10 off) for condensate trap in gas san	npling hose and measuremen	nt range extension (gas dilution) testo 360	0554 3371
· · · · · · · · · · · · · · · · · · ·	npling hose and measuremen	nt range extension (gas dilution) testo 360	0554 3371 0554 3372
Spare particle filter (10 off) for condensate trap in gas san Spare sintered filter (2 off) Industrial gas sampling probes – Modular system	npling hose and measuremen	nt range extension (gas dilution) testo 360	
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system	npling hose and measuremen	nt range extension (gas dilution) testo 360 Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4°; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg	0554 3372 Part no.
Spare sintered filter (2 off) ndustrial gas sampling probes – Modular system Adapter, non-heated	npling hose and measuremen	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4*; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg	0554 3372 Part no.
Spare sintered filter (2 off) ndustrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571	5	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle	0554 3372 Part no. : 0600 7911
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625	1000 mm 0 20 mm 0 12 mm Connection: G1/4"	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45	0554 3372 Part no: 0600 7911
Spare sintered filter (2 off)	1000 mm Ø 20 mm Ø 12 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45	0554 3372 Part no: 0600 7911 0600 7802 0600 7804
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +600 °C, stainless steel 1.4571 Non-heated sampling pipe to +1200 °C, Inconel 625	1000 mm Ø 20 mm Ø 12 mm Connection: G1/4" 1000 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg	0554 3372 Part no. 0600 7911 0600 7802 0600 7804 0600 7801
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Idon-heated sampling pipe to +600 °C, stainless steel 1.4571 Idon-heated sampling pipe to +1200 °C, Inconel 625 Idon-heated sampling pipe to +1800 °C, Al-Oxide Preliminary filter for dusty flue gases, ceramic Preliminary filter can only be mounted on extension	1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g	0554 3372 Part no. 0600 7911 0600 7802 0600 7804 0600 7801 0600 7803 0600 7805
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +600 °C, stainless steel 1.4571 Non-heated sampling pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +1800 °C, Al-Oxide Preliminary filter for dusty flue gases, ceramic Preliminary filter can only be mounted on extension pipe 0600 7802 or 0600 7804. Bas sampling hose for accurate NO ₂ /SO ₂ measurements	1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm 0 20 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g Dust load: max. 20 g / m3; filter fineness: 20 µm; Temperature: max. 1000 °C; Material: ceramic; Connection: G1/4" thread	0554 3372 Part no. 0600 7911 0600 7802 0600 7804 0600 7801 0600 7803 0600 7805
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Ion-heated sampling pipe to +600 °C, stainless steel 1.4571 Ion-heated sampling pipe to +1200 °C, Inconel 625 Ion-heated sampling pipe to +1200 °C, Inconel 625 Ion-heated sampling pipe to +1800 °C, Al-Oxide Preliminary filter for dusty flue gases, ceramic Preliminary filter can only be mounted on extension sipe 0600 7802 or 0600 7804. Bas sampling hose for accurate NO ₂ /SO ₂ measurements with built-in condensate trap, 2.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 1.2 m	1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm 0 20 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g Weight: 400 g 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 0372 Part no. 0600 7911 0600 7802 0600 7804 0600 7801 0600 7803 0600 7805
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Ion-heated sampling pipe to +600 °C, stainless steel 1.4571 Ion-heated sampling pipe to +1200 °C, Inconel 625 Ion-heated sampling pipe to +1800 °C, Al-Oxide Preliminary filter for dusty flue gases, ceramic Preliminary filter can only be mounted on extension pipe 0600 7802 or 0600 7804. Eas sampling hose for accurate NO2/SO2 measurements with built-in condensate trap, 2.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 1.2 m pong Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 2.2 m	1000 mm Ø 20 mm Ø 12 mm Connection: G1/4" 1000 mm Ø 20 mm Ø 12 mm Connection: G1/4" 1000 mm Ø 20 mm Ø 12 mm 50 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g Weight: 400 g 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 Connection: To analyser via 4 m connection cable with 8 pin plug; Weight: 0.15 kg.	0554 3372 Part no 0600 7911 0600 7802 0600 7804 0600 7801 0600 7803 0600 7805 0554 0710
pare sintered filter (2 off) Industrial gas sampling probes – Modular system Industrial gas sampling steel 1.4571 Industrial gas sampling pipe to +600 °C, stainless steel 1.4571 Industrial gas gas	1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm 0 20 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g 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 Connection: To analyser via 4 m connection cable with 8 pin	0554 3372 Part no. 0600 7911 0600 7802 0600 7804 0600 7801 0600 7803 0600 7805 0554 0710 0554 3352 0430 0065
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Jon-heated sampling pipe to +600 °C, stainless steel 1.4571 Jon-heated sampling pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +1200 °C, Inconel 625 Preliminary filter for dusty flue gases, ceramic Preliminary filter for dusty flue gases, ceramic Preliminary filter can only be mounted on extension bipe 0600 7802 or 0600 7804. Gas sampling hose for accurate NO ₂ /SO ₂ measurements with built-in condensate trap, 2.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 1.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 3.2 m long Mounting flange, stainless steel 1.4571, adjustable quick-	1000 mm 20 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g Weight: 400 g 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 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	0554 3372 Part no. 0600 7911 0600 7802 0600 7804 0600 7803 0600 7805 0554 0710 0554 3352 0430 0065 0430 0066
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +600 °C, stainless steel 1.4571 Non-heated sampling pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +1800 °C, Al-Oxide Preliminary filter for dusty flue gases, ceramic Preliminary filter can only be mounted on extension bipe 0600 7802 or 0600 7804. Gas sampling hose for accurate NO ₂ /SO ₂ measurements with built-in condensate trap, 2.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 1.2 m ong Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 3.2 m ong Mounting flange, stainless steel 1.4571, adjustable quick-action fitting suitable for all sampling/extension pipes	1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 20 mm 0 12 mm 50 mm 0 4 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g Weight: 400 g 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 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	0554 3372 Part no. 0600 7911 0600 7802 0600 7804 0600 7801 0600 7803 0600 7805 0554 0710 0554 3352 0430 0065 0430 0066 0430 0067
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +600 °C, stainless steel 1.4571	1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 12 mm Connection: G1/4" 1000 mm 0 12 mm 0 20 mm 0 12 mm 0 20 mm 0 4 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g 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 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.	0554 3372 Part no. 0600 7911 0600 7802 0600 7804 0600 7801 0600 7803 0600 7805 0554 0710 0554 3352 0430 0065 0430 0066 0430 0067
Spare sintered filter (2 off) Industrial gas sampling probes – Modular system Adapter, non-heated Extension pipe to +600 °C, stainless steel 1.4571 Extension pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +600 °C, stainless steel 1.4571 Non-heated sampling pipe to +1200 °C, Inconel 625 Non-heated sampling pipe to +1800 °C, Al-Oxide Preliminary filter for dusty flue gases, ceramic Preliminary filter can only be mounted on extension bipe 0600 7802 or 0600 7804. Sas sampling hose for accurate NO ₂ /SO ₂ measurements with built-in condensate trap, 2.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 1.2 m long Thermocouple, NiCr-Ni, -200 to +1000 °C, Inconel 625, 3.2 m long Mounting flange, stainless steel 1.4571, adjustable quick action fitting suitable for all sampling/extension pipes Temperature probes Mini ambient air probe, Tmax +80°C, for separate	1000 mm 0 20 mm 0 12 mm Connection: G1/4" 1000 mm 0 12 mm Connection: G1/4" 1000 mm 0 12 mm 0 20 mm 0 12 mm 0 20 mm 0 4 mm	Ambient temp.: -20 to +50 °C; Protection class: IP54; Gas inle G1/4"; Gas outlet: M 10x1 outer thread; Weight: 0.4 kg Connection: Thread screw/screw socket G1/4"; Weight: 0.45 kg Weight: 400 g Weight: 400 g 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 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. Meas. range Accuracy 199 Conn.	0554 3372 Part no. 0600 7911 0600 7802 0600 7804 0600 7801 0600 7803 0600 7805 0554 0710 0554 3352 0430 0065 0430 0066 0430 0067 0554 0760 Part no.



Additional Accessories/Sets

Pitot tubes	Illustration	Meas. range	Probe type	Part no.
Pitot tube, 350 mm long, stainless steel, for measuring flow velocity	350 mm	Oper. temp. 0 to +600 °C		0635 2145
Pitot tube, 1000 mm long, stainless steel, for measuring flow velocity		Oper. temp. 0 to +600 °C		0635 2345
Pitot tube, stainless steel, 350 mm long, measures flow speed with temperature, 3 x hoses (5 m long) and heat protection plate	350 mm	-40 to +1000 °C	Type K (NiCr-Ni)	0635 2041
Pitot tube, stainless steel, 750 mm long, measures flow speed with temperature, 3x hoses (5 m long) and heat protection plate	750 mm	-40 to +1000 °C	Type K (NiCr-Ni)	0635 2042
Calibration Certificates	Part no.			
ISO calibration certificate velocity, hot wire, vane anemor	0520 0004			
ISO calibration certificate/Velocity, hot wire, vane anemo	0520 0034			
Additional probe accessories	Part no.			
Connection hose, silicone, 5m long, max. load 700 hPa	0554 0440			

Affordable basic set



The compact flue gas analyzer, testo 335, provides an affordable introduction to industrial flue gas analysis engineering. It can be used to carry out spot check measurements lasting up to 2 hours in pure gas, for burner tuning or process monitoring.

Benefits:

- Measurement range extension for CO to continue measuring even in high CO concentrations
- Automatically controlled gas pump for constant pump flow at a negative pressure of -200 mbar up to a positive pressure of max. 50 mbar

Affordable basic set

- testo 335 flue gas analyzer (equipped with O2 and CO), incl. rechargeable battery and calibration protocol
- Modular flue gas probe, immersion depth 335 mm, Ø 8mm, Tmax 1000°C
- Mains unit 100-240 V for mains operation or recharging rechargeable battery in analyser
- Spare particle filters (10 off)
- Transport case

Part no. 0563 3317 70

Recommended set: Professional set for measuring emissions

During quick checks on emissions, flow speed is also measured simultaneously with flue gas. In this way, for example, the position of a stationary sampling probe can be checked or mass flow can be calculated simultaneously.

Benefit:

 Measurement range extension for all sensors - gas sensors can be protected in the case of unexpectedly high concentrations of different gases and the measurement can continue

Recommended set: Professional set for measuring emissions testo 335 flue gas analyzer, rechargeable battery and calibration 0632 3350

protocol included, equipped with O2 sensor	0632 3350
Option: CO gas sensor	0440 3988
Option: NO gas sensor	0440 3935
Option: dilution of all sensors	0440 3350
Option: pressure/flow measurement	0440 3351
Modular flue gas probe, immersion depth 335 mm, \varnothing 8 mm, Tmax 1000°C	0600 8764
Pitot tube, stainless steel, 350 mm long, measures flow speed with temperature, 3 x hoses (5 m long) and heat protection plate	0635 2041
100-240 V mains unit, for mains operation or batt. recharging in analyser	0554 1086
Spare particle filter (10 off)	0554 3385
Connection hose, silicone, 5m long, max. load 700 hPa (mbar)	0554 0440
Transport case	0516 3350



Technical data

	Meas. range	Accuracy	Resolution	time		Measurement range extension Single dilution factor 5 (standard)		
O ₂ measurement	0 to 25 Vol. %	±0.2 Vol. %	0.01 Vol. %	t ₉₀ <20 s	CO measurement (H ₂ compensated)	Meas. range Accuracy Resolution	700 ppm to 50000 ppm ±10 % of mv (additional error) 1 ppm	
-	0 to 10000 ppm	±10 ppm or ±10% of mv (0 to 200 ppm) ±20 ppm or ±5% of mv (201 to 2000 ppm)	1 ppm	t ₉₀ <40 s	CO _{low} measurement (H ₂ compensated)	Meas. range Accuracy Resolution	500 ppm to 2500 ppm ±10 % of mv (additional error) 0.1 ppm	
		±10% of mv (2001 to 10000 ppm)			NO ₂ measurement	Meas. range Accuracy Resolution	200 ppm to 2500 ppm ±10 % of mv (additional error) 0.1 ppm	
CO _{low} measurement (H ₂ compensated)	0 to 500 ppm	±2 ppm (0 to 39.9 ppm) ±5% of mv (remaining range) ^X	0.1 ppm	t ₉₀ <40 s	SO ₂ measurement Dilution of all sens	Meas. range Accuracy Resolution sors, Factor 2 (optio	500 ppm to 25000 ppm ±10 % of mv (additional error) 1 ppm n, Part no. 0440 3350)	
		XData correspond to 20°C ambient temperature. Additional temperature			O ₂ measurement	If measurement range extension is activated on all sensors: Accuracy: ±1 vol.% additional error (0 to 4.99 vol.%) ±0.5 Vol.% additional error (5 to 25 vol.%)		
NO measurement	0 to 3000 ppm	coefficient 0.25% of mv/K. ±5 ppm (0 to 99 ppm) ±5% of mv (100 to 1999 ppm) ±10% of mv (2000 to 3000 ppm)	1 ppm	t ₉₀ <30 s	CO measurement (H ₂ compensated)	Meas. range Accuracy Resolution	700 ppm to 20000 ppm ±10 % of mv (additional error) 1 ppm	
					CO _{low} measurement (H ₂ compensated)	Meas. range Accuracy Resolution	500 ppm to 1000 ppm ±10 % of mv (additional error) 0.1 ppm	
NO _{low} measurement	0 to 300 ppm	±2 ppm (0 to 39.9 ppm) ±5% of mv (remaining	0.1 ppm	t ₉₀ <30 s	NO measurement	Meas. range Accuracy Resolution	500 ppm to 6000 ppm ±10 % of mv (additional error) 1 ppm	
NO ₂	0 to 500 ppm	range) ±10 ppm (0 to 199 ppm)	0.1 ppm	t ₉₀ <40 s	NO _{low} measurement	Meas. range Accuracy Resolution	300 ppm to 600 ppm ±10 % of mv (additional error) 0.1 ppm	
measurement*	5 to 500 ppm	±5% of mv (remaining range)	ол ррш	90 \-10 3	NO ₂ measurement	Meas. range Accuracy Resolution	200 ppm to 1000 ppm ±10 % of mv (additional error) 0.1 ppm	
SO ₂ measurement*	0 to 5000 ppm	±10 ppm (0 to 99 ppm) ±10% of mv (remaining range)	1 ppm	t ₉₀ <40 s	SO ₂ measurement	Meas. range Accuracy Resolution	500 ppm to 10000 ppm ±10 % of mv (additional error) 1 ppm	

	Meas. range	Accuracy	Resolution	General technical data			
Temperature meas. Probe type Type K (NiCr-Ni)	-40 to +1200 °C	±0.5 °C (0 to +99 °C) ±0.5 % of mv (remaining range)	0.1 °C	Memory	Maximum Per folder Per site Max. number of protofolders or sites	100 folders max. 10 sites max. 200 protocols ocols is determined by the number of	
Draught measurement	-40 to +40 hPa	±0.03 hPa (-2.99 to +2.99 hPa) ±1.5 % of mv (remaining range)	0.01 hPa	Controlled diaphragm pu	mp: Pump flow Hose length probe hose extensior	0.6l/min (controlled) max. 7.8 m (corresponds to two	
Differential pressure measurement	-200 to 200 hPa	±0.5 hPa (-49.9 to 49.9 hPa) ±1.5 % of mv (remaining range)	0.1 hPa	User-defineable fuels	Max positive pressure Max negative pressur	els incl. test gas as fuel	
Absolute pressure measurement	600 to +1150 hPa	±10 hPa	1 hPa	Weight Dimensions	600 g 270 x 90 x 65 mm		
Derived parameters				Storage temp.Oper. temp.	-20 to +50 °C -5 to +50 °C		
Efficiency	0 to 120 %		0.1 %	Display	Graphics display: 160	0 x 240 pixels	
Flue gas loss Flue gas dewpoint	0 to 99.9 % 0 to 99.9 °C		0.1 % 0.1 °C	Power supply	Rech. block: 3.7V/2.2 Power: 6.3 V/1.2A	2Ah	
	0 10 99.9 C		0.1 0	 Material/Housing 	TPE PC		
CO ₂ measurement (calculation from O ₂)	0 to CO ₂ max.	±0.2 Vol. %	0.1 Vol. %	Protection class	IP40		
Response time t90 = < 40 s	to to CO ₂ max.			Warranty	Analyzer 2 years (excluding wearing parts, e.g. gas sensors Rech. batt. 1 year Gas sensors CO, COlow,NO, NOlow, NO2, SO2 1 year O2 gas sensors: 1.5 years		

*Max. measurement duration of 2 hours should not be exceeded in order to avoid absorption.

CONTACT INFORMATION

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