testo 350.

For emission testing and combustion analysis.

Portable Emission Analyzer

The testo 350 Portable Emission Analyzer

The Standard for Emission Testing and Combustion Analysis

Whether you are testing for compliance, or troubleshooting and tuning your combustion process, the testo 350 has everything you need. The **ultra-rugged construction**, coupled with a simple **intuitive operation,** and **innovative measurement technology,** sets the standard in emission testing and combustion analysis.

The testo 350's **exclusive sensor design, patented gas paths, active sample conditioning, intelligent automatic data logging, and testing programs,** work together seamlessly providing a lightweight and simple-to-use emission monitoring solution.

The 350's **housing, bump protection, and industrial connectors** enable it to **stand up to any field condition.** Simply click on the application icon and the analyzer automatically begins its setup process. The proper parameters, correct calculations, and real diagnostics are displayed in HD color.

Control Unit

Docked or remote wireless operation to 300 feet (or wired up to 3,000 feet)

Bluetooth®

The testo 350 is built with rugged cam-lock connections and a simple USB interface.

Analyzer Box

Superior rugged construction

Use it for testing:

State and Local Protocols • EPA methods • CTM 030, 034 • ASTM D6522 • SCAQMD 1110.2 +1146

Unmatched Capability and Superior Testing Performance

Control Unit

Small in size, but big in capabilities

Measurement interface provides a multitude of field configurations so testing is faster to set up and easier to perform.

- Long-range (300 ft.) Bluetooth eliminates the need for long sample lines
- Real-time color graphics
- Intuitive operation lets you view collected data in a graph or numeric values
- Use the control unit as your data storage device and download data to your computer at your convenience
- Push the fresh air button to purge instead of climbing a ladder to pull the probe
- Integrated magnets for mounting to steel surfaces

Analyzer Box

Where the measurement action begins

Contains up to six sensors, the pumps, and Testo's know-how for high accuracy.

- Continuous sensor temperature monitoring for superior accuracy
- Thermoelectric (peltier) chiller (optional) removes the moisture, as required by regulatory agencies
- Automatic flow controlled pump keeps rate within regulatory guidelines
- Protection in many forms, from rubber bumpers to components mounted in shock-resistant material

Measurement capabilities:		
• O_2	• NO	• HC
• CO	• NO_{low}	• Velocity
• CO_{low}	• NO_2	• Pressure
• NOx	• SO_2	• And more...
• CO_2	• H_2S	

Use the control unit of the testo 350 remotely from a comfortable location up to 300 feet away (with Bluetooth), instead of up on the stack.

Control unit turned over and docked for safe transport.

Built for Superior Job Site Performance...

Proven technologies provide more testing versatility.

- Sensing technologies, such as electrochemical and infrared, combined to offer **long-term measurement stability** and superior response.
- Digital sensors provide numerous site benefits, including:
  - Calibration history
  - Continuous temperature compensation (every second)
  - Interference filter (with electronic lifespan indicator)
- **Advanced temperature monitoring** combined with new thermal control strategies result in unwavering temperature stability and confidence in the measurement.
- **Smarter diagnostics** provide more information. When testing conditions are not correct, detailed messages explain the reason and corrective action.

Designed for the job site with features to make testing easier.

- The **flow-controlled pump** and gas paths (built with non-reactive materials) **set the standard in sampling**. No need to fumble with valves and flow meters because the 350 automatically corrects for positive or negative pressure. Combine these with Teflon-lined sample hoses that utilize high-velocity sample transport and you get faster response and better sample integrity.
- The **thermoelectric** (Peltier-type) **sample conditioner** and peristaltic pump automatically removes moisture and provides a dry sample for more accurate results for **EPA testing & compliance**.
- The **dilution system** has proven to be essential in many applications where high concentrations are encountered. The system increases sensor life by reducing the concentrations and it automatically displays corrected values. It essentially eliminates problems with cross sensitivity. For example, the system ensures that CO measurements on rich burn engines are accurate and account for cross sensitive gases (H_2).

And Simple Field Service

The 350's design lets you perform routine service with plug and play convenience - no tools are needed. Simply click out the sensors, battery, or pumps - it's that simple.

Pump with Automatic Flow Control

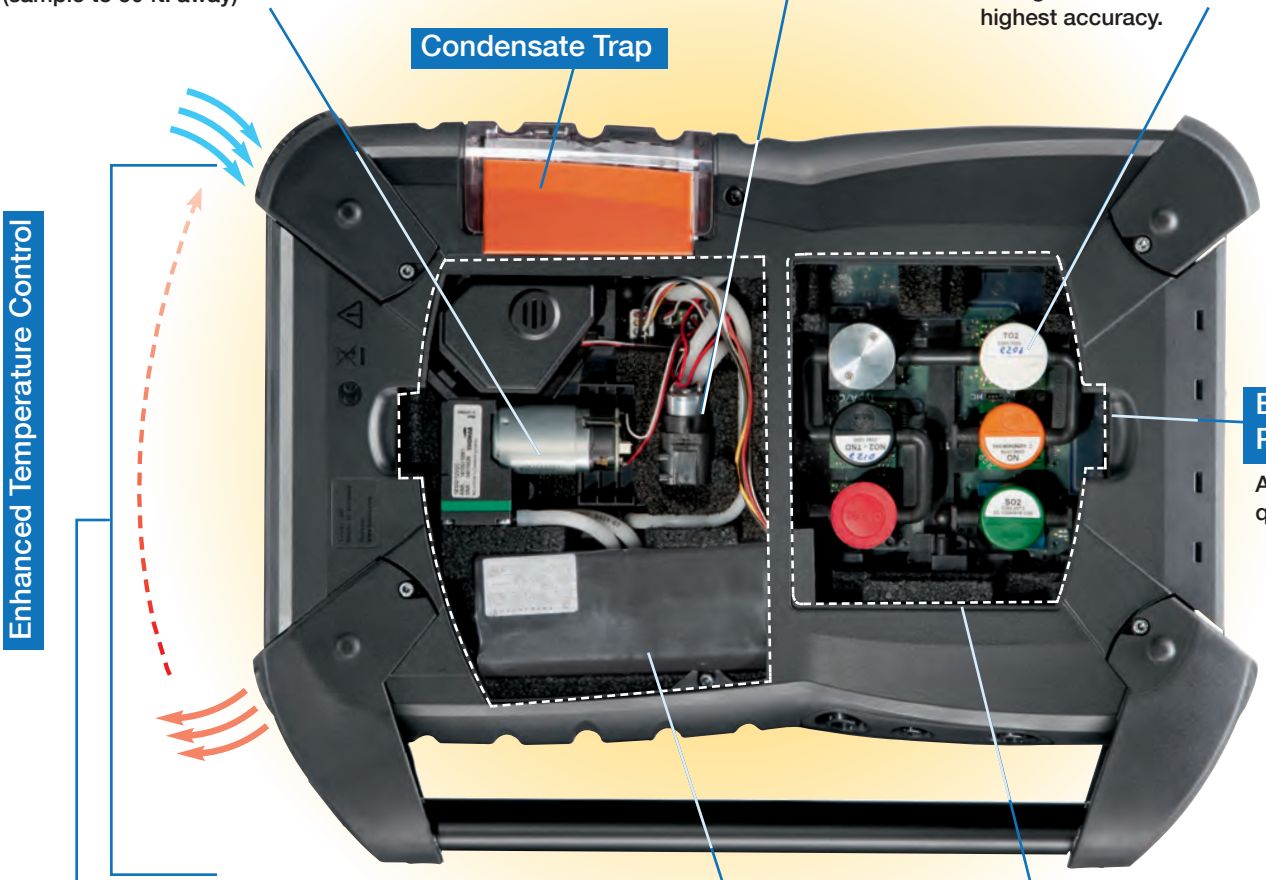
High capacity sampling pump gives you more power to maintain constant sample flow. No need to adjust valves and gauges. The pump will maintain flow rate for best sensor response and accuracy. (sample to 50 ft. away)

Fresh Air and Dilution Pump

Draws fresh air to purge sensors and to dilute high concentration gas samples. (up to 400,000 ppm CO)

Plug and Play Sensors

The digital platform provides easy swapping and sensor change-outs. Field replaceable in seconds and no calibration needed, the sensor electronics maintain the calibration and other critical information. Quick change interference filters assure the highest accuracy.



Cooling Loop

Enhances thermal control and analyzer efficiencies and is designed to isolate the electronics and sensors from harsh ambient conditions.

Separate Sensor Chamber

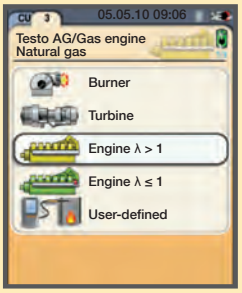
Ensures thermal stability and the highest accuracy. Minimizes temperature drift due to thermal changes.

Built for the Most Important Application – Yours...

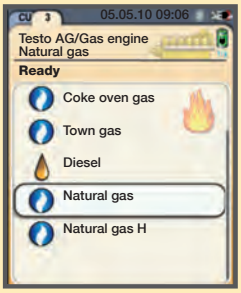
Knowing what you need, and what to expect, can challenge even the most experienced professional. But the **testo 350 removes much of the guess work with its intuitive application setup.**

To start testing, simply select the icon for your application and the analyzer will automatically set up the dilution system and the measurement parameters that you need. **The 350 makes testing easier in just four simple steps!**

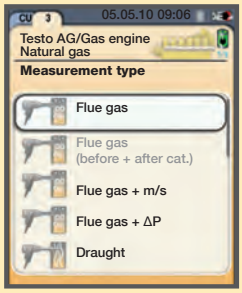
Four simple steps to testing...



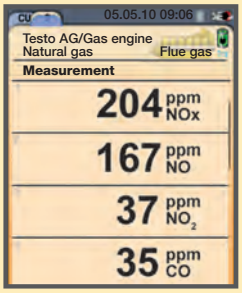
Select an Application



Select a Fuel



Select Test Type



Start Measurement

Engine testing

Rich-burn engine exhaust, when uncontrolled, can have wide concentration ranges and both CO and NO_X can fluctuate significantly. **The on-board CO dilution system will automatically set-up for optimum testing, perfect for a rich burn engine.** Lean-burn engines have different exhaust characteristics, but NO_2 can make up a significant portion of the total NO_X measurement. **The 350 measures both NO and NO_2 for proper lean-burn engine set-up.**

Due to high concentration, replaceable interference filters keep the sensors stable and your readings accurate. Heavy particulate loads are easily controlled with the **optional sintered filter for diesel testing.**

Boiler and burner tuning

Industrial boilers and burners have their own unique characteristics. When an unexpectedly high CO is detected, **the testo 350 will automatically adjust to the situation,** keeping the sensor protected at all times.

Don't worry about climbing and removing the probe from the stack, just hit the fresh air button to purge the sensor for longer life. The measurements of O_2, CO, NO and SO_2, combined with automatic calculations (CO_2, efficiency, excess air), provide fast tuning solutions. The 350's **compact design is better for working on a platform or small space.** The automatic zero pressure measurement is **ideal to monitor flow or draft induction.** With a pitot tube you can quickly measure velocity and determine mass flow even during long term testing.

Emission and Combustion Testing... Made Easier

Industrial processes testing

Combustion analyses in industrial processes vary widely. O_2 and CO measurements are critical for proper combustion; NO_x or SO_2 measurements are important for today's pollution control devices. Sometimes extreme concentrations are also encountered and unexpected. The testo 350's dilution system provides the protection and accuracy to continue working.

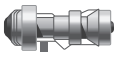
High temperature sampling in kilns can be easily achieved with the wide array of probes and hose options for the testo 350.

For the most accurate CO_2 measurements, the optional CO_2 sensor using infrared technology is wide ranging for nearly any source.

For additional flexibility, a six channel analog output box can be looped in the system to provide a (user selected) 4-20 mA output.

Turbine testing

High output and low emissions are typical of turbines and as a result, you need an analyzer that is **especially equipped to handle low thresholds and still deliver the highest accuracy.** When you need to make critical control or warranty decisions, the 0.1 ppm resolution will provide the highest accuracy. The low NO_x and low CO sensors are ideal for the accuracy today's turbines demand.

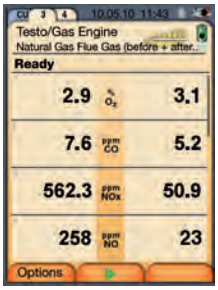


Multiport pre- and post-catalyst testing

Sometimes a single sample location is just not enough. Sometimes you need more information to give you better SCR performance, or even more data to help you design or troubleshoot a system. Whatever the requirement, **the unique multi-unit capability provides many testing configurations.**

Select the "before and after CAT" test application to display simultaneous measurements from both locations. It makes it easy to see catalyst performance side-by-side in real time.

Connect multiple analyzer boxes (up to 16 total) through the testo BUS connection. The graphing display of real time NO_x or CO gives you information from the multiple probe locations in real-time.



With the testo 350, you have the ability to see pre- and post-test results simultaneously.

The testo 350: Performance Summary at a Glance

- Test up to six gases simultaneously, or swap sensors out for additional parameters: O_2, CO, CO_{low}, NO, NO_{low}, SO_2, H_2S, CO_2, CH (total hydrocarbons)
- Innovative dilution system for the widest testing ranges and greatest sensor protection: (CO to 400,000 ppm) (NO, NO_2, SO_2, H_2S to five times the sensor range)
- Advanced sample conditioning utilizes a thermoelectric chiller for moisture drop-out and a peristaltic hose pump for controlled water removal and EPA compliance
- Automatic flow-controlled pump with high strength sampling to over 50 feet away - keep your testing in compliance
- Proven sample gas path with Teflon® lined hoses
- Continuous temperature compensation for assured accuracy
- Flow rate and sensor temperature monitoring for US EPA CTM-030, -034, ASTM D6522, and SCAQMD 1110.2 and 1146 requirements
- User defined programs with onboard memory to 250,000 values
- Integrated pressure measurement for draft, ΔP, velocity and mass emission
- Automatic user configured testing programs
- Display refresh rate at one second intervals
- Real-time measurement averages can be shown on display
- Emission Rates: Real time display w/ EPA Method 19 Calculations
- Mass flow and emission rates with pitot tube
- AC and rechargeable battery operation with optional DC connection operation
- Comprehensive calculations including O_2 corrections for NO_X, CO, and SO_2, mass measurement with pitot and stack dimension input
- User defined O_2 reference for EPA and state reporting

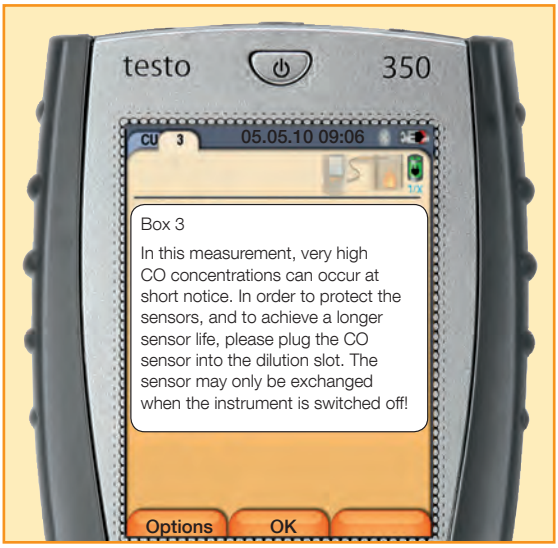
Better Diagnostics for Easier Testing

Onboard diagnostics keeps you testing

Press the “i” button for:

- Sensor status
- Battery life
- Pump hours and pump flow rate (liters/min)
- Error reports, and more

The analyzer will automatically alert you when servicing is needed and provides you up to the minute information about the “Health” of your analyzer and its components.



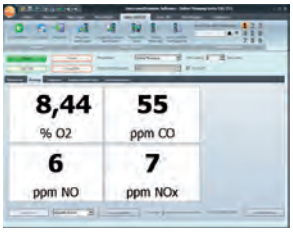
Diagnostic function alerts you with text message on the display.

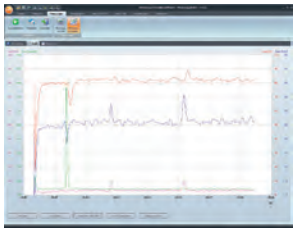
easyEmission Software — TECsoft

A powerful and efficient software tool

Have total control of the 350 with the easyEmission software package. This software provides complete analyzer control and significant data management. easyEmission has the intuitive user interface so you can easily prepare custom reports.

- Real-time analyzer control with a PC, showing tabular, graphical and picture box results
- Complete sensor calibration
- Logging intervals 1/sec to 1/hr
- Quick data transfer into Microsoft Excel and PDF file formats
- Extensive customer/location management functions
- Calculations of maximum, minimum, and average values





Testing & Emission Compliance Software

TECsoft integrates the testo 350, and the simplicity of Excel into the fastest, and most flexible testing software program available.

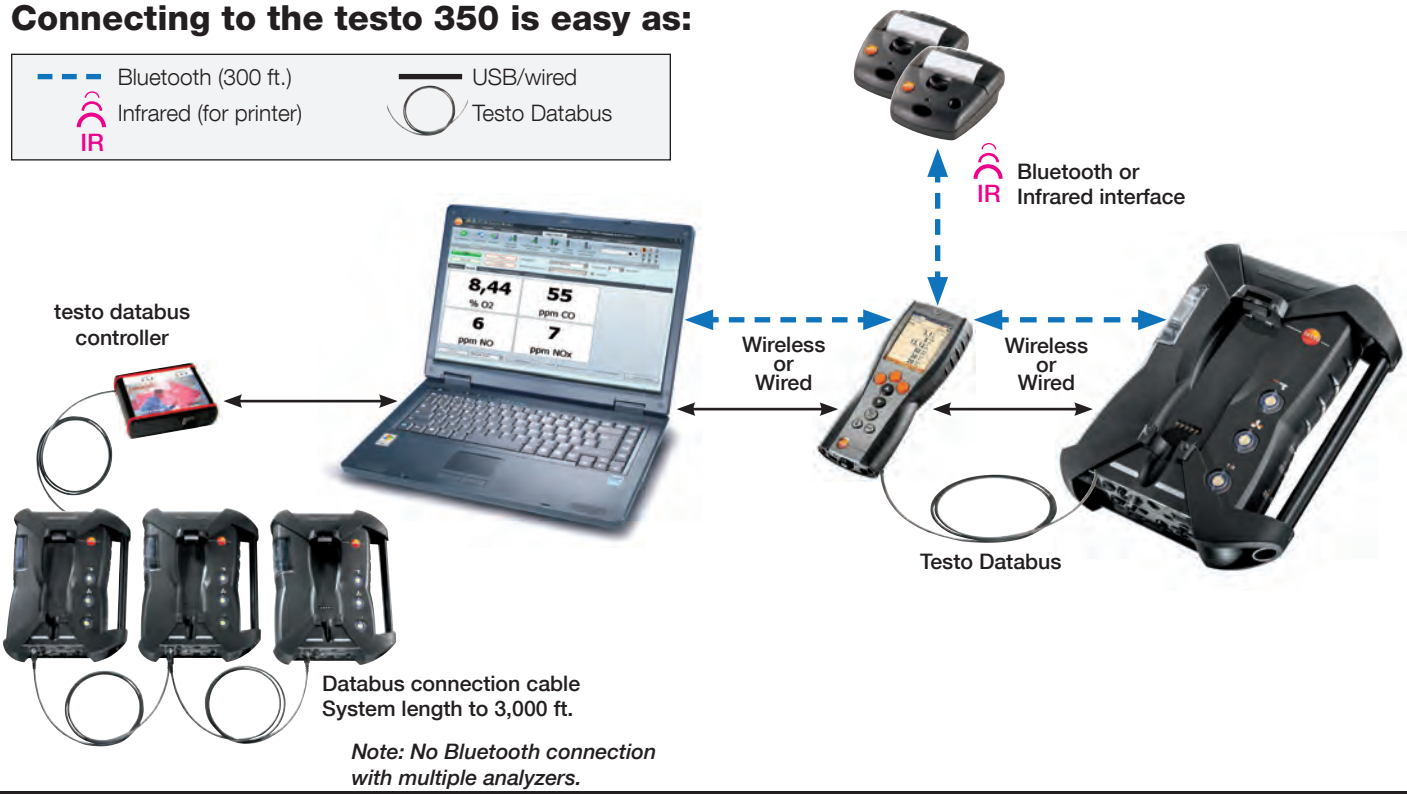
Intuitive - Simple navigation with easy site setup and configuration

Flexible - Calibrate when you want. Print full or partial reports on the fly

Productive - Log test data into analyzer on site, then import into TECsoft anytime. Manage data and view reports through Excel.

- Generate emission reports for local, state, or federal compliance programs
- Perform pre and post calibration drift checks
- Perform zero and span error calibration checks
- Simply organize and save data in basic Excel formats
- Calculate EPA emission rate or use customized calculations

Take your pick.
Connecting to the testo 350 is easy as:



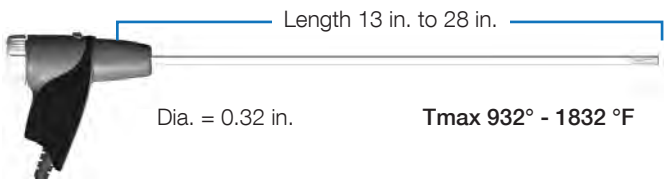
Note: No Bluetooth connection with multiple analyzers.

Sampling Probes for Every Application

The powerful pumps are uniquely engineered to combine both high velocity transport and minimal surface area contact to eliminate sample absorption. Our patented hoses offer high performance sampling at a fraction of the price. Hoses are available in 7 ft. lengths.
Add 9 ft. extensions for additional length.

Standard gas sampling probe

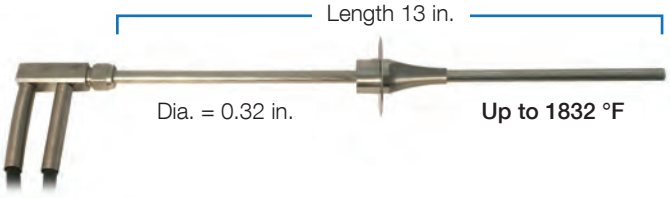
The standard stainless steel probes are available in 13 in. or 28 in. lengths and are equipped with integrated thermocouples.
Each can be upgraded with a sintered pre-filter for high particulate loading.



Probe shaft stainless steel Tmax 932° - 1832 °F
Hose length: Standard 7 ft.; Teflon lined
Nine foot hose extensions for lengths up to 50 ft.

Standard flue gas probes, available in two lengths, including probe stop, NiCr-Ni thermocouple, sintered filter options.

Engine probe



Probe shaft stainless steel, Tmax 1832 °F
Hose length: Standard 7 ft.; Teflon-lined
Nine foot hose extensions for lengths up to 50 feet
Thermocouple and sintered filter kits available

Industrial gas sampling probes

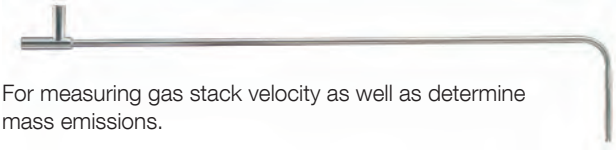
Testo is able to provide a sampling solution for your specific needs. Additional hoses and probes are available:

- For engine testing and high pressure applications
- For high particulate loading
- For compliance or cold weather sampling with heated lines

The industrial probe shafts come in lengths of 39 in. (one meter) long with rugged screw connections. Three probe shafts can be connected for a probe length of nearly 10 ft. The probe shafts are available in two materials - stainless steel for temperatures to 1112 °F or Inconel for temperatures to 2192 °F.

Ceramic pre-filters can be added for high particulate loading. The Al-oxide ceramic probe can withstand enormous thermal loads to 3272 °F.

Pitot tubes



For measuring gas stack velocity as well as determine mass emissions.

PART NUMBERS

testo 350 Control unit	Part no.
testo 350 control unit, displays measurement values and controls analyzer box, incl. rech. battery, measurement data store, USB interface and connection for Testo databus (Option Bluetooth® wireless transmission)	0632 3511

Contact Testo, Inc. for application-configured analyzer kits.

testo 350 analyzer box testo 350	Part no.
testo 350 analyzer box, equipped with O_2, (updatable to max. 6 gas sensors selected from CO, CO_{low}, NO, NOlow, NO_2, SO_2, CO_2 NDIR, C_xH_y, H_2S) also includes: differential pressure sensor, temperature probe input Type K NiCr-Ni and Type S Pt10Rh-Pt, connection testo databus, rech. battery, integrated combustion air probe (NTC), trigger input, measurement data store, USB interface (Option Bluetooth® wireless transmission)	0632 3510

OPTIONS

At least one additional sensor is needed for analyzer to operate. Up to 5 additional sensors can be installed.

- CO (H_2-compensated) sensor, 0 to 10000 ppm, resolution 1 ppm
- CO_{low} (H_2-compensated) sensor, 0 to 500 ppm, resolution 0.1 ppm
- NO sensor, 0 to 4000 ppm, resolution 1 ppm
- NO_{low} sensor, 0 to 300 ppm, resolution 0.1 ppm
- NO_2 sensor, 0 to 500 ppm, resolution 0.1 ppm
- SO_2 sensor, 0 to 5000 ppm, resolution 1 ppm
- *CO_2 (NDIR) sensor, 0 to 50 Vol.%, resolution 0.01 Vol.%, incl. absolute pressure measurement, condensate monitoring and CO_2 zeroing filter pack
- C_xH_y sensor, methane 100 to 40000 ppm, propane 100 to 21000 ppm, butane 100 to 18000 ppm, resolution 10 ppm.
- H_2S sensor, 0 to 300 ppm, resolution 0.1 ppm

*Must be installed at the factory

More options*:

- Peltier gas preparation incl. peristaltic pump for automatic condensate evacuation
- Fresh air valve for long-term measurement, incl. measuring range extension with dilution factor 5 for all sensors
- Measuring range extension for individual slot with the following selectable dilution factors: 0, 2, 5, 10, 20, 40
- DC voltage input 11V to 40V
- Special gas pump for long-term measurements with extended guarantee. For measurements >2 hours, the option Peltier gas preparation is additionally recommended.
- Automatic zeroing of pressure sensor for continuous flow velocity / differential pressure measurement

ACCESSORIES

For testo 350 analyzer box and transport case	Part no.
Cable with battery terminals to connect to DC voltage input	0554 1337
Interchangeable filter NO sensor, blocks cross-gas SO_2	0554 4150
Transport case for analyzer probe and accessories, dimensions 22.5 x 18.5 x 8.5 in.	0516 3510
Carrying strap set for analyzer box	0554 0434
Spare dirt filter for analyzer box (20 per box)	0554 3381
Exhaust hose kit to remove gas from breathing space, length 16 ft.	0554 0451
Wall holder for analyzer, lockable	0554 0203
Current/voltage cable (0 to 1000 mV, 0 to 10 V, 0 to 20 mA)	0554 0007
Analog output box	0554 3149
Power supply for testo 350 control unit, 230V / 8V / 1A	0554 1096

PART NUMBERS

PC software and testo databus	Part no.
Software easyEmission, incl. USB connection cable instrument-PC.	0554 3334
Software easyEmission, incl. Testo databus controller with USB-connection cable instrument-PC, cable for Testo databus. For example, if several testo 350 emissions analyzer are connected to the Testo databus, they can be controlled via a PC (possible measurement interval in databus from 1 measurement per second)	0554 3336
Multiple software license easyEmission for emissions analyzer testo 350	0554 3337
6.5 ft. connection cable	0449 0075
16 ft. connection cable	0049 0076
65 ft. connection cable	0049 0077
Other cable lengths up to 3,000 ft. on request	

Printers and accessories	Part no.
Testo fast printer with wireless infrared interface, 1 roll of thermal paper and 4 batteries	0554 0549
Bluetooth printer kit with wireless Bluetooth interface, incl. 1 roll of thermal paper, rech. battery and power supply	0554 0553
Spare thermal paper for printer (6 rolls), 10 years legibility	0554 0568
Spare thermal paper for printer (6 rolls)	0554 0569
Other cable lengths up to 3,000 ft. on request	
Analog output box set, 6 channels, 4 to 20mA, to transfer values (i.e. analog recorder). Kit includes: analog output box, 6.5 ft. connection cable	0554 3149

Contact Testo for standard probes, engine probes, industrial probes, pitot tubes, and more.

TECHNICAL DATA

Measurement	Measurement range	Accuracy	Resolution	Reaction time	Reaction type
Temperature Type K (NiCr-Ni)	-200° to 1370 °C	±0.4 °C (-100° to 200 °C) ±1 °C (rest of range)	0.1 °C		
Temperature Type S (Pt10Rh-Pt)	0° to 1760 °C	±1 °C (0° to 1760 °C)	1 °C		
Efficiency	0 to 120 %		0.1 % (0 to +120%)		
Exhaust gas loss	0 to 99.9 %qA		0.1 % qA (-20 to +99.9 % qA)		
CO_2 calculation	0 to CO_2 max Vol.% CO_2	Calculated from O_2 ±0.2 Vol.%	0.01 Vol.% CO_2	40 s	t_{90}
Differential pressure 1	-16 to 16 "H_2O	±1.5% of m.v. -16 to -1 "H_2O ±1.5% of m.v. 1.2 to 16 "H_2O 0.1 "H_2O -1.20 to 1.20 "H_2O	0.004 "H_2O (-16 to 16 "H_2O)		
Differential pressure 2	-80 to 80 "H_2O	±1.5% of m.v. (-80 to 20 "H_2O) ±1.5% of m.v. (20 to 80 "H_2O) 0.2 "H_2O (-20 to +0 "H_2O)	0.004 "H_2O (-80 to 80 "H_2O)		
Flow velocity	0 to 131 ft./sec		0.1ft/sec to 131 ft./sec		
Absolute pressure (opt. if IR sensor equipped)	-240 to 461 "H_2O	± 4 "H_2O	0.4 "H_2O		
Flue gas dewpoint calculation	32° to 212 °F		0.18 °F (32° to 212 °F)		

TECHNICAL DATA

Analyzer Box testo 350

Measurement	Measurement range	Accuracy	Resolution	Reaction time	Reaction type
O_2	0 to 25 Vol.% O_2	±0.2% of vol. (0 to 25 Vol.% O_2)	0.01 Vol.% O_2 (0 to +25 Vol.% O_2)	20 s	t_{95}
CO (H_2 compensated)*	0 to 10000 ppm CO	±5 ppm CO (0 to 199 ppm CO) ±5% of mv (200 to 2000 ppm to 2000 ppm CO) ±10% of mv (2001 to 10000 ppm CO)	1 ppm CO (0 to 10000 ppm CO)	40 s	t_{90}
COlow (H_2 compensated)*	0 to 500 ppm CO	±2 ppm CO (0 to 39.9 ppm CO) ±5% of mv (40 to 500 ppm CO)	0.1 ppm CO (0 to 500 ppm CO)	40 s	t_{90}
NO	0 to 4000 ppm NO	±5 ppm NO (0 to 99 ppm NO) ±5% of mv (100 to 1999.9 ppm NO) ±10% of mv (2000 to 4000 ppm NO)	1 ppm NO (0 to 3000 ppm NO)	30 s	t_{90}
NOlow	0 to 300 ppm NO	±2 ppm NO (0 to 39.9 ppm NO) ±5% of mv (40 to 300 ppm NO)	0.1 ppm NO (0 to 300 ppm NO)	30 s	t_{90}
NO_2	0 to 500 ppm NO_2	±5 ppm NO_2 (0 to 99.9 ppm NO_2) ±5% of mv (100 to 500 ppm NO_2)	0.1 ppm NO_2 (0 to 500 ppm NO_2)	40 s	t_{90}
SO_2	0 to 5000 ppm SO_2	±5 ppm SO_2 (0 to 99 ppm SO_2) ±5% of mv (100 to 2000 ppm SO_2) ±10% of mv (2001 to 5000 ppm SO_2)	1 ppm SO_2 (0 to 5000 ppm SO_2)	30 s	t_{90}
CO_2 (IR)	0 to 50 Vol.% CO_2	±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)	0.01 Vol.% CO_2 (0 to 25 Vol.% CO_2) 0.1 Vol.% CO_2 (>25 Vol.% CO_2)	10 s	t_{90}
H_2S	0 to 300 ppm H_2S	±2 ppm (0 to 39.9 ppm) ±5% of mv (40 to 300 ppm)	0.1 ppm (0 to 300 ppm)	35 s	t_{90}

* H_2 display only as an indicator **Accuracy can be increased with an on-site calibration. Contact Testo for details.

Technical Note: Measurement accuracy can be increased for compliance testing by performing an on-site pre-test calibration procedure.

Technical data HC Sensor

Measurement	Measurement range[1]	Accuracy	Resolution	Min. O_2 requirement in flue gas	Response time t90	Response-factor [2]
Methane	100 to 40,000 ppm	< 400 ppm (100 to 4000 ppm) < 10 % of m.v. (> 4000 ppm)	10 ppm	2% + (2 x m.v. methane)	< 40 sec.	1
Propane	100 to 21,000 ppm	< 400 ppm (100 to 4000 ppm) < 10 % of m.v. (> 4000 ppm)	10 ppm	2% + (5 x m.v. propane)	< 40 sec.	1.5
Butane	100 to 18,000 ppm	< 400 ppm (100 to 4000 ppm) < 10 % of m.v. (> 4000 ppm)	10 ppm	2% + (6.5 x m.v. butane)	< 40 sec.	2

[1] Lower explosion limit must be adhered to.

[2] The HC sensor is adjusted to methane in the factory. It can be adjusted to another gas (propane or butane) by the user.

TECHNICAL DATA

Individual dilution with selectable dilution factor (x2, x5, x10, x20, x40)

Measurement	Measurement range	Accuracy	Resolution
CO (H_2 compensated)	dilution factor-dependent	±2 % of m.v. (additional error)	1 ppm
CO_{low} (H_2 compensated)	dilution factor-dependent	±2 % of m.v. (additional error)	0.1 ppm
NO	dilution factor-dependent	±2 % of m.v. (additional error)	1 ppm
NO_{low}	dilution factor-dependent	±2 % of m.v. (additional error)	0.1 ppm
SO_2	dilution factor-dependent	±2 % of m.v. (additional error)	1 ppm
HC-Pellistor	dilution factor-dependent	±2 % of m.v. (additional error)	10 ppm

Dilution of all sensors (Factor 5) Note: O_2 is not displayed when activated

Measurement	Measurement range	Accuracy	Resolution
CO (H_2 compensated)	2500 to 50000 ppm	±5 % of m.v. (additional error) Pressure range -40 to 0 "H_2O at probe tip	1 ppm
CO_{low} (H_2 compensated)	500 to 2500 ppm	±5 % of m.v. (additional error) Pressure range -40 to 0 "H_2O at probe tip	0.1 ppm
NO	1500 to 20000 ppm	±5 % of m.v. (additional error) Pressure range -40 to 0 "H_2O at probe tip	1 ppm
NO_{low}	300 to 1500 ppm	±5 % of m.v. (additional error) Pressure range -40 to 0 "H_2O at probe tip	0.1 ppm
SO_2	500 to 25000 ppm	±5 % of m.v. (additional error) Pressure range -40 to 0 "H_2O at probe tip	1 ppm
NO_2	500 to 2500 ppm	±5 % of m.v. (additional error) Pressure range -40 to 0 in "H_2O at probe tip	0.1 ppm
H_2S	200 to 1500 ppm	±5 % of m.v. (additional error) Pressure range -40 to 0 "H_2O at probe tip	0.1 ppm

Control Unit

Operating temperature	20° to 115 °F
Storage temperature	-4° to 122 °F
Battery type	Li-Ion
Battery life	5 hr. (without wireless connection)
Memory	2 MB (250,000 measurement values)
Weight	0.97 lbs.
Dimensions	10 x 4.5 x 2.3 in.
Warranty	2 years
Protection class	IP 40

TECHNICAL DATA

Other operational data

Dimensions	13 x 5 x 17.2 in.
Weight	10.58 lbs.
Storage temperature	-4° to 122 °F
Operating temperature	22° to 113 °F
Housing material	ABS
Memory	250,000 measurement values
Power supply	AC power supply 90V to 260V (47 to 65 Hz)
DC voltage supply	11V to 40V
Maximum dust load	20 g/m³ dust in flue gas
Dewpoint calculation	32° to 212 °F
Maximum positive pressure flue gas	20 "H_2O
Maximum negative pressure	-120 "H_2O
Pump flow rate	1 l/min. with flow rate monitoring
Hose length	max 53 ft. (corresp. to 5 probe hose extensions)
Maximum humidity load	158°F at gas input of analyzer box (33.5 Vol.% H_2O)
Trigger input	Voltage 5 to 12 Volt (rising or falling flank) Impulse width > 1 sec Load: 5 V/max, 5 mA, 12 V/max. 40 mA
Protection class	IP40
Battery life	Maximum load approx. 2.5 hr. (Dependent upon analyzer configuration)

WARRANTY

Instrument*	2 years for instrument and probe (except for replaceable parts, i.e. gas sensors, battery...)
Gas sensors	CO/NO/NO_2/SO_2/H_2S/C_xH_y: 1 year
O_2 sensor	1 ½ years
CO_2-IR sensor	2 years
Rechargeable battery	1 year

*Warranty applies for average sensor load.

Other combustion solutions from Testo

testo 310

Residential Combustion Analyzer

The fully featured testo 310 delivers more combustion parameters so you can get the job done right the first time - every time. Whether you need to perform basic combustion tuning, maintenance or safety checks, or install a new furnace or boiler the fully featured testo 310 delivers results. More features for more jobs with the ability to measure O_2, CO (with NOx filter standard), CO_2, draft, pressure, and more.

testo 320

Residential & Commercial Combustion Analyzer

The bright, color graphic display is easy to see and understand with simple menu icons. The 320's rugged design and many innovative features assures a long lasting life. This comprehensive combustion analyzer can measure O_2, CO, CO_2, combustion calucations, draft, pressure, and the "flue gas matrix" offers optional software and more for more jobs.

testo 330-2G LL

Three-Gas Analyzer

The 330-2G LL measures O2, CO, optional NOx, tempeature, pressure, and other combustion parameters. Proper set up and maintenance are critical to safe and efficient equipment operation.

testo 330-1G LL

Three-Gas Analyzer

With a full color display, the 330-1G LL combustion analyzer allows the user to visualize the measurement data without watching numerical values.

testo 340

The Ultimate Tuner Four-Gas Analyzer

The testo 340 is equipped with a standard O_2 sensor. Three additional gas sensors can be individually configured at any time so your analyzer is perfect for your job. Compact design, combined with reliable engineering, makes testo 340 the ideal analyzer for engine tuning, commissioning, service and maintenance.

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