

We measure it.



# testo 340

Speed, power & precision in industrial combustion analysis.

# The testo 340 Portable Combustion Analyzer

## Speed, power & precision in combustion analysis.

Optimizing the combustion process and increasing fuel efficiency are necessary to compete in today's market. The testo 340 is the ideal tool to confirm proper set-up and to identify emission problems before they get serious.

### The Ultimate Portable Combustion Tuner

- 4-gas flexibility in a rugged, compact handheld design
- Multi sensor capability, equipped to handle extreme concentrations
- Automatic CO-dilution sensor protections keep your analyzer working longer
- Designed for simple, fast operation and constructed for daily rugged use!

### Combustion Analysis that you can count on

Plug and play sensor technology lets you change or add sensors within seconds in the field, eliminating costly down-time and giving you maximum tuning flexibility.

Oxygen comes standard, then simply add one, or up to three, sensors for your job.

Select from:

- CO or CO low
- NO or NO low
- NO<sub>2</sub>
- SO<sub>2</sub> (For the lower concentrations, select COlow or NOlow instead)



### Replaceable Sensors and Filters

High concentrations can reduce the normal life span of sensors. Testo's solution is field-replaceable sensors. Other gases in the exhaust stream can also interfere with measurements. Replaceable sensor filters on the CO and NO sensors eliminate the interferences.

To assure filter readiness, advanced analyzer diagnostics show filter lifetime in ppm hours. This lets you know when to change out the filter. This simple change-out increases accuracy and extends sensor lifetime.

Get the job done right...

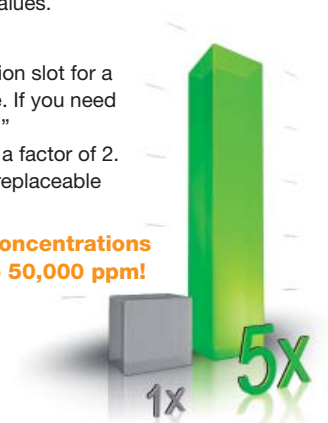


### Unique Feature - Dilution System Option

The testo 340 is built to measure high concentration with its unique, automatic 5X dilution system. When the concentration set-point is reached, precise amounts of dilution air are added thereby lowering the concentration applied to the sensor. The analyzer automatically computes and displays the correct values.

Simply install the sensors in the dilution slot for a range 5 times greater. It's that simple. If you need more flexibility select "dilution overall" to extend the range of all sensors by a factor of 2. The dilution system, combined with replaceable filters will maximize your tuning capabilities and reduce the cost of ownership.

**CO concentrations up to 50,000 ppm!**



### Built to Last

Testo analyzers are known for their reliability and staying power in the industry. The testo 340 is no exception with its simple to use interface, and durability that can withstand the most rugged field environments. All testo 340s are equipped with:

- Widest testing range in its class
- Easy to read, back-lit displays
- User-defined option to see only the parameters that matter
- Simple function keys to navigate throughout the menu
- Rubberized shock-resistant housing
- Integrated magnets for hands-free operation
- Durable transport case

# Onboard Diagnostics

## The information button is knowledge at your fingertips.

Simply push the "i" button and scroll to the diagnostics screen to see instrument status.

For example:

- Perform an automated quick leak check before your test
- See the rechargeable lithium battery status (lasts approximately 6 hours with pump on)
- Review the pump flow rate (liters/min)
- Show error status with description and diagnosis and last service/maintenance date
- Display graphic representation of sensor calibration data
- Shows status of water in condensate trap

### More features

#### Integrated pressure sensor

- Measure draft or differential pressure
- Simultaneously measure exhaust gas and flow velocity

#### 18 fuels to choose from, plus...

10 – user defined fuels (input from easyEmission)

#### Infrared printing

- Display and print calibration record with sensor graphics
- Print records to infrared printer (10 year thermal paper)



Simply push the "i" button and scroll to the diagnostics screen.

# Data Management

## Internal data logging – automatic programs

Take your testo 340 to a new level of efficiency with on-board logging programs. Select from 5 user-defined measurement data logging programs or change them as needed. Program duration is limited by concentration. At low concentrations, data log up to 2 hours!

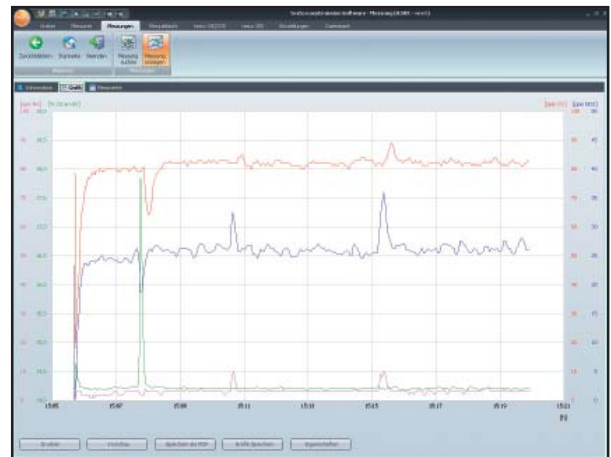
## Internal Memory Management

- Up to 100 folders (customers/systems) can be saved
- Up to 10 sites can be saved in every folder
- USB Interface
- Transmit data via infrared or optional Bluetooth

## easyEmission

Have total control of your 340 with the easyEmission software package. Display screens can be customized to match commonly used functions. Prepare custom reports. With dynamic graphing features, it provides trending analysis like no other instrument in its class.

- Real-time analyzer control with a PC, showing tabular, graphical and picture box results
- Logging intervals 1/sec to 1/hr
- Custom report generation
- Import/export data into a variety of formats



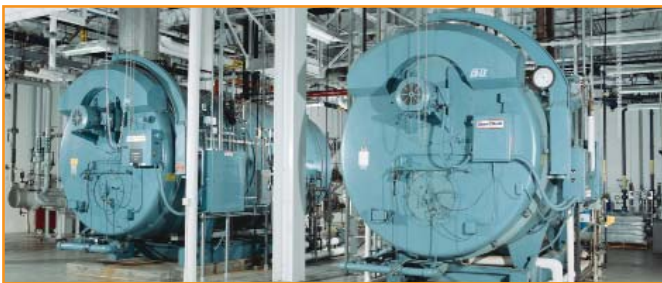


## The Ultimate Combustion Tuner



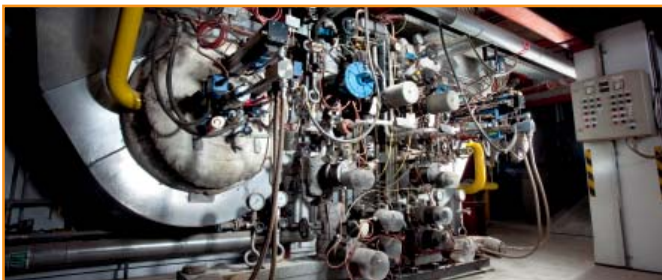
### Better engine tuning

Stationary engine exhaust, when uncontrolled, can have very wide concentration ranges. As a result both CO and NO<sub>2</sub> can fluctuate significantly. The on-board dilution system and the replaceable interference filters both keep the sensors secure and your readings accurate. The unit measures both NO and NO<sub>2</sub> for perfect lean burn engine set-up. High exhaust pressures and heavy particulate loading are easily controlled with the special pressure relief valve (standard) and particulate filters (option) on the Engine Probe kit configuration.



### Better boiler and burner tuning

The automatic dilution feature will reduce the CO concentrations when your system spikes and CO goes through the roof. The analyzer will automatically adjust to the situation. Don't worry about climbing and removing the probe from the stack, just hit the fresh air button. Automatic calculations (CO<sub>2</sub>, efficiency, excess air) provide fast tuning data. The standard differential pressure measurement is ideal to monitor or set up draft or draft induction or velocity for the calculation of mass emissions.



### Better combustion analysis for industrial processes

Combustion analyses in industrial processes vary widely. With the optional dilution system, the measurement of extreme concentration (i.e. SO<sub>2</sub> or NO<sub>x</sub>) is easily measured. High temperature sampling or with long industrial probes can easily be added. The testo 340 is truly an analyzer designed as your industrial workhorse.

## Probes for every application

The probe and hose assemblies are made from the highest quality materials. The standard hoses (Teflon lines) are heat-resistant. The cam-lock securely attaches the sample line to the analyzer. Probe length vary from 12 inches to 28 inches with temperatures to 1800 °F and hoses that can extend to 25 feet.

- Standard probes are specially designed for either engine or burner/boiler applications
- Industrial probes with lengths to 9 feet and temperatures to 3200 °F give you extreme tuning flexibility



## Technical data

Measurement	Measurement range	Accuracy
O <sub>2</sub>	0 to 25 Vol. %	±0.2 Vol. %
CO (H <sub>2</sub> compensated)	0 to 10,000 ppm	±10 ppm or ±10% of mv (0 to 200 ppm) ±20 ppm or ±5% of mv (201 to 2,000 ppm) ±10% of mv (2,001 to 10,000 ppm)
CO <sub>low</sub> (H <sub>2</sub> compensated)	0 to 500 ppm	±3 ppm (0 to 39.9 ppm) ±5% of mv (remaining range)
NO	0 to 3,000 ppm	±5 ppm (0 to 99 ppm) ±5% of mv (100 to 1,999 ppm) ±10% of mv (2,000 to 3,000 ppm)
NO <sub>low</sub>	0 to 300 ppm	±3 ppm (0 to 39.9 ppm) ±5% of mv (remaining range)
NO <sub>2</sub> *	0 to 500 ppm	±10 ppm (0 to 199 ppm) ±5% of mv (remaining range)
SO <sub>2</sub> *	0 to 5,000 ppm	±10 ppm (0 to 99 ppm) ±10% of mv (remaining range)
Temperature Probe Type K (NiCr-Ni)	-40° to 2,192 °F	32.89 °F (32 to 210.2 °F) ±0.5 % of mv (remaining range)
Draft	-0.58 to 0.58 psi	0.0004 psi (-0.043 to 0.043 hPa) ±1.5 % of mv (remaining range)
Differential pressure	-2.9 to 2.9 psi	0.007 psi (-0.724 to 0.724 psi) ±1.5 % of mv (remaining range)
Absolute pressure	8.7 to 16.68 psi	0.14 psi
Calculated parameters: Efficiency Flue gas loss Flue gas dewpoint	0 to 120% 0 to 99.9% 0° to 211 °F	
CO <sub>2</sub> measurement (calculation from O <sub>2</sub> )	0 to CO <sub>2</sub> max.	±0.2 Vol. %

\*To avoid drift, a maximum measurement duration of 2 hours should not be exceeded.

## General technical data

<b>Memory</b>	Maximum: 100 folders Per folder: Max. 10 sites Per site: Max. 200 logs The max. number of logs is determined by the number of folders or sites
<b>Sample pump</b>	Pump flow: 1.0 l/min Hose length: max. 25 feet (2 hose extensions and 1 probe hose) Max. pos. pressure/flue gas: 0.73 psi Max. neg. pressure/flue gas: -2.9 psi
<b>Weight</b>	2.12 lbs
<b>Dimensions</b>	11.14 x 4.05 x 2.56"
<b>Storage temp.</b>	-4° to 122 °F
<b>Oper. temp.</b>	23° to 122 °F
<b>Power supply</b>	Battery 3.7 V/2.4 Ah, AC Power Supply 6.3 V/2 A
<b>Protection class</b>	IP40
<b>Warranty</b>	Analyzer: 2 years (excluding working parts, e.g. sensors, sensor replacement filter) Rech. batt.: 1 year Sensors: CO, NO, CO <sub>low</sub> , NO <sub>low</sub> , NO <sub>2</sub> , SO <sub>2</sub> : 1 year O <sub>2</sub> : 1.5 years

### Measuring range extension

#### Single dilution, factor 5 (standard)

<b>CO</b> (H <sub>2</sub> compensated)	Meas. range Accuracy	700 ppm to 50.000 ppm ±10 % of mv (additional error)
<b>CO<sub>low</sub></b> (H <sub>2</sub> compensated)	Meas. range Accuracy Resolution	300 ppm to 2.500 ppm ±10 % of mv (additional error) 0.1 ppm
<b>NO</b>	Meas. range Accuracy	500 ppm to 15.000 ppm ±10 % of mv (additional error)
<b>NO<sub>low</sub></b>	Meas. range Accuracy Resolution	150 ppm to 1.500 ppm ±10 % of mv (additional error) 0.1 ppm
<b>SO<sub>2</sub></b>	Meas. range Accuracy	500 ppm to 25.000 ppm ±10 % of mv (additional error)

#### Single dilution, factor 5 (Option - Part no. 0440 3350)

<b>O<sub>2</sub></b> (With dilution over all sensors)	Meas. range Accuracy Resolution	0 to 25 vol.% ±1 vol.% additional error (0 to 4.99 vol.%) ±0.5 vol.% additional error (5 to 25 vol.%) 0.01 vol.%
<b>CO<sub>low</sub></b> (H <sub>2</sub> compensated)	Meas. range Accuracy	
<b>CO<sub>low</sub></b> (H <sub>2</sub> compensated)	Meas. range Accuracy	
<b>NO</b>	Meas. range Accuracy	
<b>NO<sub>low</sub></b>	Meas. range Accuracy	
<b>NO<sub>2</sub></b>	Meas. range Accuracy	
<b>SO<sub>2</sub></b>	Meas. range Accuracy	

# Other combustion solutions from Testo

## testo 350

Multi-Gas Portable Emission Analyzer

The testo 350 multi-gas emission analyzer provides the high performance and rugged portability for emission monitoring and regulatory compliance.



## testo 330-2G LL

Three-Gas Analyzer

The 330-2G LL measures O<sub>2</sub>, CO, optional NO<sub>x</sub>, temperature, pressure, and other combustion parameters. Proper set up and maintenance are critical to safe and efficient equipment operation.



## testo 320

Single-Gas O<sub>2</sub> Analyzer

The 320 is perfect for basic tuning. Use it to set up and commission combustion systems.



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