SMART BELL

COMBUSTION METER

EOS
ELECTRO-OPTICAL SENSOR
TECHNOLOGY

COMBUSTION MADE EASY

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Congratulations on purchasing the ***Smart Bell*** the easiest to use, least expensive to maintain combustion meter.

OWNERS MANUAL & MAINTENANCE

SAFETY NOTES

Before using this meter, read all safety information carefully. In this manual the word "WARNING" is used to indicate conditions or actions that may pose physical hazards to the user. The word "CAUTION" is used to indicate conditions or actions that may damage this instrument.

⚠WARNING!

This analyzer extracts combustion gases that may be toxic in relatively low concentrations. These gases are exhausted from the back of the instrument. This instrument must only be used in well-ventilated locations.It must only be used by trained and competent persons after due consideration of all the potential hazards.

PREFLIGHT CHECKLIST

- Clean particle filter
- Water trap and probe line are empty of water
- Power on and zero
- All hose and thermocouple connections are properly secured
- Flue gas probe is sampling ambient FRESH air
- Water trap is fitted correctly to the instrument
- Flue temperature plug is connected
- Inlet temperature probe is connected if required

SETTING TEMPERATURE SCALE

To change the temperature scale from °F to °C (or back) perform the following steps;

- Start with the SmartBell Off
- Rotate the selector to “T Net”
  - o The current scale will initially be displayed
  - o The unit will switch to the alternative scale
- Rotate the selector to the desired fuel for your testing
- Allow the unit to complete the zero process

Note: These steps are only required one time, or when the scale needs to be changed.

STORING INLET TEMPERATURE

To correctly calculate net temperature and combustion efficiency it is important to have the correct inlet temperature set. Two methods are available to properly establish the inlet temperature

- Non-ducted systems. If the Smart Bell is being used on a system that uses combustion air from the space near the appliance, simply turn the analyzer on without the flue probe connected. The Smart Bell will use an ambient sensor inside the handset as the inlet temperature to determine net temperature.
- Ducted systems. If the Smart Bell is being used on a system that brings in outside air for combustion air it is important to set the inlet temperature prior to taking flue gas readings. To properly set inlet perform the following steps during startup of the Smart Bell

1. Connect the flue temperature connector only to the Smart Bell
2. Place the flue probe in the combustion air inlet stream (you will need to drill a 1/4” hole for access)
3. Turn on the Smart Bell and allow to complete the zero process.
4. Connect the flue gas connector to the Smart Bell and proceed to combustion measurements.
   - The temperature measured during the zero countdown has now been stored, and will be used to determine the net temperature.

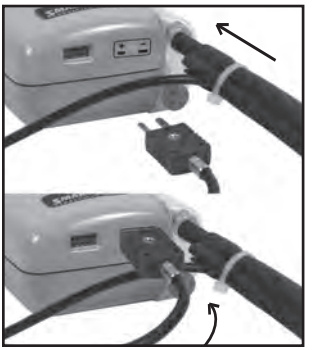
SELECTING FUEL

When powering the SmartBell on, simply rotate the selector to the desired fuel. The display will show this display, and then it will complete the zero process.

Note: If you wish to use the same fuel as previously selected rotate the selector to “StandBy” at power on. The fuel in use will be displayed and then blink. If the fuel is not correct rotate the selector to the proper choice before the Zero count-down starts.

ANALYZER CONNECTIONS

NOTE: Take care when inserting the temperature probes as the pins are polarized. Insert with the smaller pin into input marked positive. (+)



⚠WARNING!

Turning the pump off while the probe is in the flue will leave toxic gases inside the analyzer. Once data has been read, it is advisable to purge the unit with fresh air as soon as possible. To do this, with the probe removed from the flue, turn ON the pump. Always allow the readings to return to zero (0.0 for CO2) prior to shutting the unit off.

⚠WARNING!

The probe will be hot from flue gases. Remove the probe from the flue and allow it to cool naturally. Do not immerse the probe in water, as this will be drawn into the analyzer and damage the pump and sensors. Once the probe is removed from the flue and the readings have returned to ambient levels rotate the selector to "OFF"and switch off the analyzer. The instrument will count down from 10 to switch off.

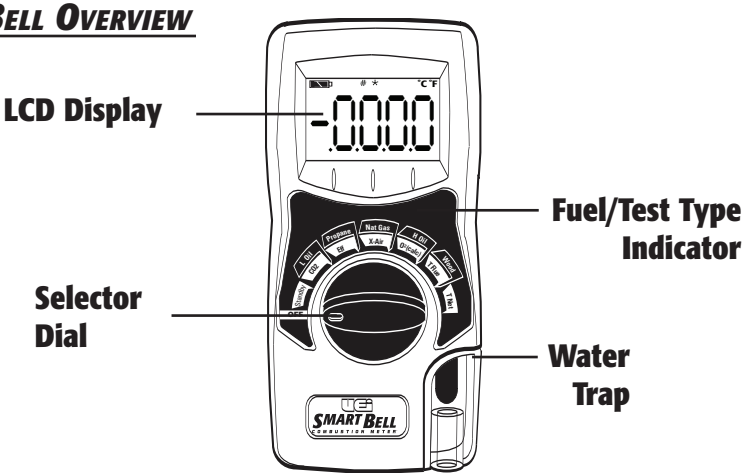
POST FLIGHT

- Remove the probe from the flue and allow the analyzer to purge with fresh air until readings return to zero.
  - CO2 to Zero ***(Be careful as the probe tip will be HOT)***
- Drain water trap
- Check particle filter

⚠WARNING!

This meter does not measure Carbon Monoxide (CO). Only measuring CO2 does not indicate whether a combustion process is running fuel rich or fuel lean. A fuel rich combustion process can produce potentially dangerous levels of CO so other measurements must be made to ensure that the combustion process is running fuel lean and that the CO levels are acceptably low.

SMARTBELL OVERVIEW



General Maintenance

- Check calibration of your instrument annually to ensure it meets original performance specifications
- Keep your instrument dry. If it gets wet, wipe dry immediately. Liquids can degrade electronic circuits
- Whenever practical, keep the instrument away from dust and dirt that can cause premature wear
- Although your instrument is built to withstand the rigors of daily use, it can be damaged by severe impacts. Use reasonable caution when using and storing the meter.

Periodic Service

WARNING!
Repair and service of this instrument is to be performed by qualified personnel only. Improper repair or service could result in physical degradation of the instrument. This could alter the protection from personal injury this meter provides to the operator. Perform only those maintenance tasks that you are qualified to do.

Annual Re-Calibration

While the sensor has an expected life of more than five years in normal use it is recommended that the analyzer is re-calibrated at least annually, this is so that long-term drift on the electronics can be eliminated. Local regulations may require more frequent re-calibration and users should check with appropriate authorities to ensure they comply with relevant guidelines.

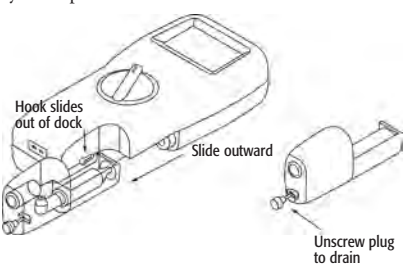
Cleaning

Periodically clean your instrument case using a damp cloth. DO NOT use abrasive, flammable liquids, cleaning solvents, or strong detergents as they may damage the finish, impair safety, or affect the reliability of the structural components.

Emptying & Cleaning the In-Line Water Trap

The in-line water trap should be checked and emptied on a regular basis. Water vapor will condense in the probe line, which may cause the water trap to fill suddenly if the probe is moved. Care should be taken at all times.

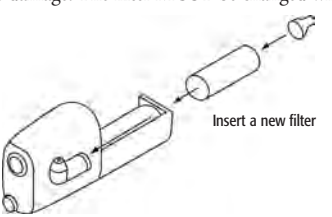
Carefully unscrew the plug from the bottom of the water trap housing. Dispose of the condensate in a suitable drain, care must be taken as it could be acidic. If condensate spills onto the skin or clothing, clean off immediately using fresh water, seek medical advice if problems occur. Ensure plug is replaced before performing combustion tests. Note: CO2 reading will be low if the Water Trap Plug is not in place.



Changing The Particle Filter

This is a very important part of the analyzer and should be changed regularly. It prevents dust and dirt particles from entering the pump and sensors that will cause damage. The filter MUST be changed when it appears discolored.

Remove water-trap assembly from the analyzer as shown above. Remove the filter and plastic holder from the housing. Discard the filter element but keep the holder to fit to the new filter. Clean the inside of the filter housing with a suitable soft cloth. Fit the holder onto the new filter element and then insert into the housing. Refit the housing onto the analyzer.



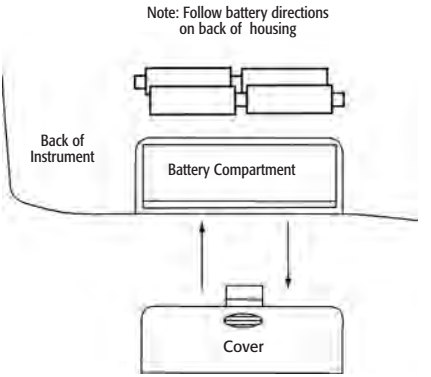
BATTERIES REPLACEMENT

This meter has been designed for use with alkaline batteries. No other types are recommended. The analyzer is supplied with 4 "AA" size alkaline batteries.

These should be installed into the instrument as shown in the diagram to the right and indicated on the back of the unit.

CAUTION!

Take great care when installing the batteries to observe correct polarity. Always check the meter for operation immediately after installing new batteries.



ELECTROMAGNETIC COMPATIBILITY (EMC)

This product has been tested for compliance with the following generic standards:
EN 50081-1, EN 50082-1 and is certified to be compliant.

The European Council Directive 89/336/EEC requires that electronic equipment does not generate electromagnetic disturbances that exceed defined levels and has an adequate level of immunity to enable it to be operated as intended.

Since there are many electrical products in use that pre-date this Directive and may emit electromagnetic radiation in excess of the standards defined in the Directive there may be occasions where it would be appropriate to check the analyzer prior to use. The following procedure should be adopted.

- Go through the normal start up sequence in the location where the equipment is to be used
- Switch on all localized electrical equipment that might be capable of causing interference
- Check that all readings are as expected (a level of disturbance in the readings is acceptable)
- If not, adjust the position of the instrument to minimize interference or switch off, if possible, the offending equipment for the duration of the test

At the time of writing this manual (July 2008) UEi is not aware of any field based situation where such interference has ever occurred and this advice is only given to satisfy the requirements of the Directive.

WHY TEST WITH SMARTBELL™

VERIFY PROPER OPERATION OF COMBUSTION EQUIPMENT

- To verify that equipment is operating as the manufacturer designed it to work. This includes installation tests for CO2, O2, Excess Air and stack temperatures
  - A properly tuned combustion appliance will perform better, and reduce the likelihood of call-backs for no-heat
- To verify that the maintenance work performed has corrected the problem
- To detect any defects early – possibly at installation
  - Higher efficiency equipment is running at peak only when properly adjusted. As the complexity of a system increases, so does the importance of proper adjustment of the combustion process.
- Improperly adjusted equipment not only fails to meet expected performance but could lead to future failures
- To check that the equipment is supplied with enough combustion air, make-up air and has proper venting to exhaust the combustion by-products
- To establish a base-line of desired performance
  - By tracking the performance over time you are able to see changes before they lead to equipment failure.

VERIFY SAFE OPERATION OF COMBUSTION EQUIPMENT

- Equipment that is not properly adjusted, or that has insufficient draft to vent combustion gases could produce carbon monoxide in deadly quantities. The UEi CO91(Sold Separately) test both flue gas and ambient levels of CO.
- When customers complain about fumes it is usually an indication of improper operation. CO is a colorless, odorless gas so the fumes are not the CO, but an indication that a problem may exist.

IMPROVE YOUR PRODUCTIVITY & PROFIT

- The UEi ***SMART BELL*** combustion meter gives a quick, continuous readout of the combustion process. Readings change in real-time as adjustments are made to help zero in on the proper setting. Compare this to spot tests or other methods, and you will see your productivity rise.
- Proper testing will help you provide the proper service or equipment replacement recommendations, and have the data to support this. Sales will increase because you are no longer guessing, and the work provided is proper for the needs of the customer.
- Customers on a service contract will be provided excellent service, and you will quickly diagnose failures and help keep the equipment up for the season.

IMPROVE CUSTOMER PERCEPTION OF YOUR SERVICES

- Provide your customers results of the performance of their equipment
- Reduce your customers energy expense by properly adjusting and maintaining their equipment
- Increase your confidence in the work performed and remember

IF YOU DON'T TEST, YOU DON'T KNOW

WHAT RESULTS ARE GENERALLY ACCEPTABLE

ATMOSPHERIC GAS FIRED BURNERS

- **Oxygen** .....6.8 to 7.9% O2
- **Stack Temperature** ..... 325 to 500°F
- **Draft** (Water Column Inches) ..... -.02 to -.04wc"
- **Carbon Monoxide** (Parts Per Million) ..... <100ppm

GAS FIRED POWER BURNERS

- **Oxygen** 8.5to 10.2% O2
- **Stack Temperature** ..... 275 to 500°F
- **Stack Draft** (Water Column Inches)..... -.02 to -.04wc"
- **Overfire Draft** (Water Column Inches)..... -.02wc"
- **Carbon Monoxide** (Parts Per Million) ..... <100ppm

OIL FIRED BURNERS (#2 OIL FUEL)

- **Oxygen** .....10 to 12% O2
- **Stack Temperature** ..... 325 to 600°F
- **Stack Draft** (Water Column Inches)..... -.04 to -.06wc"
- **Overfire Draft** (Water Column Inches)..... -.02wc"
- **Carbon Monoxide** (Parts Per Million) ..... <100ppm
- **Smoke** 0
  (or manufacturer's recommendation)

POSITIVE OVERFIRE GAS & OIL

- **Oxygen** ..... 7 to 13% O2
- **Stack Draft** (Water Column Inches)..... -.02 to -.04wc"
- **Overfire Draft** (Water Column Inches)..... +0.4 to +0.6wc"
- **Carbon Monoxide** (Parts Per Million) ..... <100ppm

NOTE: Follow manufacture guidelines for the specific equipment being serviced.

UEI RECOMMENDS THE CO91 TO TEST CO LEVELS

METER PROBLEM SOLVING

If any problems are not solved with these solutions, contact us or an authorized repair center.

Fault Symptom	Causes / Solutions
CO2 too low	• Air leaking into probe, tubing, water trap or connectors.
CO2 reading (- - - -)	• Meter was stored in a cold environment and is not at normal working temperature.
Batteries not holding charge	• Batteries exhausted.
Meter does not respond to flue gas	• Particle filter blocked. • Probe or tubing blocked. • Pump not working or damaged with contaminants.
Net temperature or Efficiency calculation incorrect.	• Ambient temperature set wrong during Automatic Calibration.
Flue temperature readings erratic	• Temperature plug reversed in socket. • Faulty connection or break in cable or plug.
T flue or T net displays (- - - -)	• Probe not connected or faulty
X-Air, EFF display (- - - -)	• CO2 reading is too low.

COMBUSTION BASICS

INTRODUCTION

UEi combustion analyzers provide real time data that provides information on the condition of the combustion process of your equipment. This information is needed for proper setup and maintenance to verify proper operation. Benefits of combustion analysis are to increase efficiency thus reducing fuel costs, verification of proper combustion to reduce future problems, and to check for safe operation. A combustion process out of balance can increase maintenance needs, create excess emissions, lead to safety concerns or waste fuel and money. By checking for proper operation you are able to confirm a job well done.

- This overview will explain some of the common terms used in combustion testing
  - The combustion process – (a small amount of chemistry)
  - Ideal combustion – you may have heard the term Stoichiometric (or not)
  - Relationship between CO2, CO and O2
- The analyzer and display
  - Various text and icons used on the front housing and in the display.
  - What will the readings do when adjustments are made
  - Where are you on the combustion curves from these readings

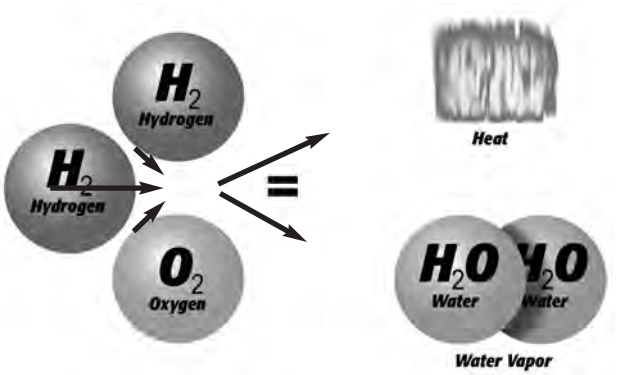
THE COMBUSTION PROCESS

What is really going on during combustion? Most of us know it as a fire that is generating heat and possibly smoke. We know that paper or wood can burn when lit, and continue to burn – but what is really happening?

Combustion is a continuous chemical reaction that occurs when a certain temperature is reached, and there is the presence of both fuel and an oxidizer. The most common fuels are hydrogen and carbon, and the typical oxidizer is O2 present in the air we breathe. Once the reaction is started it will continue as long as it is being fed fuel and oxygen, and the temperature is sufficient.

IDEAL COMBUSTION PROCESS

If a perfect condition could exist for combustion it would be the burning of pure hydrogen (H2) in pure oxygen (O2). This would give us heat and water, and be the easiest to maintain. Two hydrogen (H2), combine with one O2 molecule gives us two water molecules plus heat. The reaction would be something like figure 1.
It is great in theory that we would have a very efficient system with only some heat losses from the water vapor, but it isn't very practical. Pure hydrogen and oxygen are expensive to create, and difficult to handle compared to other fuels already available.

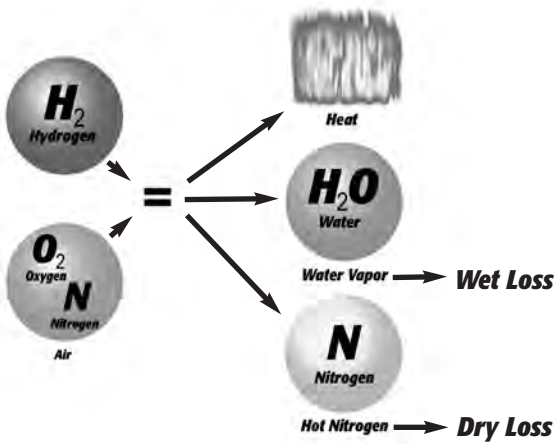


NEAR IDEAL COMBUSTION

This is when we burn pure hydrogen in the air. Our atmosphere is 20.9% oxygen with the remaining 79.1% nitrogen.

This is nearly as desirable as the example for ideal combustion with the only added loss being the heat that is carried away from your target with the nitrogen. Because nitrogen isn't part of the combustion process, it enters the combustion chamber at the inlet temperature and leaves with some of the heat created by the combustion. If this isn't recovered at the heat exchanger it is lost up the flue.

The main problem with this example is again the availability and cost of pure hydrogen.



BEST OF THE REAL WORLD

Natural gas is a readily available fuel, and our atmosphere contains sufficient oxygen. When this is used as a fuel we get the reaction shown in figure 3.
Now the other added by products are CO2 and hot nitrogen compared to the Ideal World situation. In addition to this we have added the by product Excess Air.

Excess Air is exactly what the name implies, air that is in excess of what is needed to burn all of the fuel. The reason for this is more related to the ability to mix all of the fuel and O2 for complete combustion. Without some amount of excess air not all of the fuel would burn completely, and this leads to the formation of CO instead of CO2.

Other fuels all contain the basic ingredients for combustion, but also may include other components such as sulfur, fuel bound nitrogen, soot and ash and water. These either react with the oxygen to form other pollutants or contribute to additional losses.

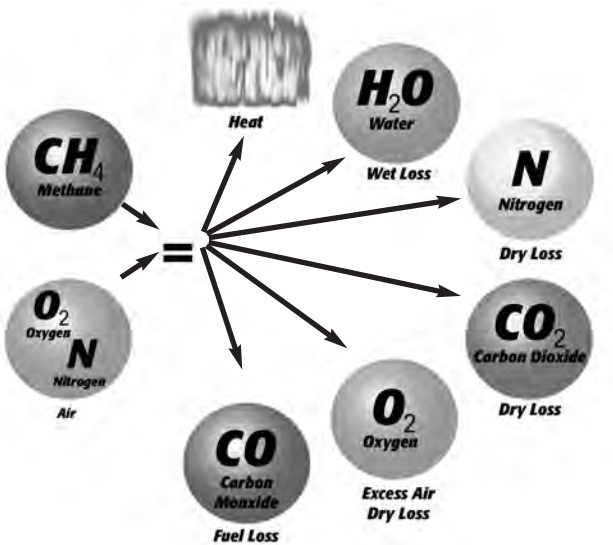


figure 3

***Carbon Monoxide** is formed from incomplete combustion (partial oxidation of carbon in the fuel). Typical causes are incomplete mixing of fuel and air, low combustion temperatures, or not enough excess air.*

PERFECT COMBUSTION

The term perfect combustion is also called stoichiometric combustion. This is the point where all of the fuel is burned with all the oxygen, leaving no undesirable by products. At this point all of the hydrogen in the fuel (H2) would combine with oxygen to form H2O, all of the carbon (C) would combine to form CO2, and all of the sulfur (S) would form SO2. There would be no additional air to carry heat away from the fire, and no undesirable byproducts would be created. In practice this isn't possible due to the inability to completely mix the fuel and air, so an additional amount of air is used to completely burn the fuel.

The chart in figure 4 illustrates the relationship between the main flue gas components that provide an indication of the performance of the combustion process.
As you move left to right you are going from a rich to lean condition. The term Air rich is equivalent to fuel lean, and simply indicates a situation where the excess air is much higher.

To adjust the combustion process you are given the best overall picture of the condition by measuring all three parameters. Each of the parameters performs differently as you move through the adjustment of a combustion process

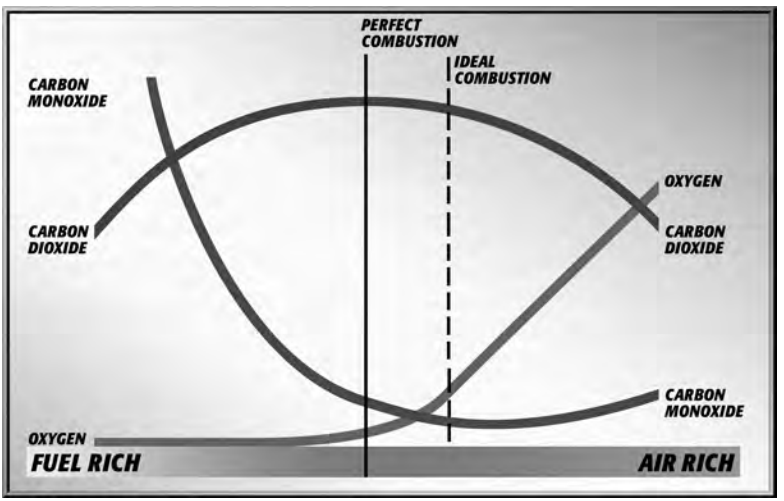


figure 4

CO2 – This is the gas that was most commonly used for adjusting combustion equipment. A tool called an Orstat, or wet chemical kit would give you a snapshot of the CO2 value. As you can see by the graph, CO2 is maximized when the process is running at perfect combustion. Because this isn't possible, the goal has always been to maximize CO2. The trouble is that this can occur at two places in the graph, once on the fuel rich side, and once on the fuel lean side. A smoke test is used to first place you on the right side of the graph, and then CO2 was maximized to reach the highest value possible.

2. O2 is the next gas that is measured. At perfect combustion all of the O2 in the atmosphere is consumed so very little remains in the flue gases. If you adjust with this gas you are more certain to be on the correct side of perfect combustion, but you may still be creating carbon monoxide (CO) due to insufficient levels of O2 to completely burn the carbon in the fuel. This may lead to sooty buildup, reducing efficiency, but you are also not extracting all of the energy the fuel has to offer.

3. Carbon Monoxide (CO) is the last gas listed. As you can see on the left side of the chart CO production is the highest. At ideal combustion this level is the lowest possible, but if the other gases are not available you may be adding too much excess air leading to losses in efficiency. Also if the amount of air being fed to the combustion process is increased too high it may start cooling the combustion chamber down and begin creating CO. Once you are at this point without measuring O2 or CO2, you may instinctively add more O2 to reduce the CO level and end up creating more.

Other Important Factors Relating To Combustion

- The three T's of combustion
  – Time
- Amount of time that the fuel and oxygen are together in the combustion chamber
  – Temperature
- How high the temperature is determines the rate of oxidation, or speed of the combustion
  – Turbulence
- How well the fuel and air are mixed

- These three factors are all interrelated, and will move your results along the combustion curves.

Combustion Measurement Terms

Other parameters measured include net temperature, draft and efficiency.

Net Temperature

Net temperature is the difference between the combustion air entering the combustion chamber and the flue gas temperature past the heat exchange. This is used to determine how efficient the system is extracting heat from the combustion process in addition to the performance of the combustion process. On sealed systems that have ducted inlet air for combustion air, the net temperature must compare this air stream temperature with the flue gases. If the appliance simply uses room air for the combustion air, our analyzers have an internal temperature sensor in the handset, so it will use this temperature when calculating net temperature.

The most accurate results for efficiency are obtained when measuring flue gases at the point where flue temperature (not flame temperature) is the highest.

Draft

Draft is the difference between the ambient pressure level and the pressure level in the flue. This is created either by the natural buoyancy of the hot gases created in combustion lifting, or by an inducer fan that assists the flow of flue gases up the stack. Most combustion equipment will specify the amount of draft that is required for proper operation.

Draft helps draw combustion air into the combustion chamber, and also helps in mixing the fuel and oxygen. Without proper draft, the combustion process can spill poisonous by products into the space where the appliance is located. This can be a risk to those in the area, or create a danger to residents or employees working near the combustion equipment.

Efficiency

Efficiency is a measure of how well the fuel is burned to create heat, and how well the generated heat is captured for the intended use.

The information used to create this value are based on the fuels heating value, the heat lost up the flue and the gas components in the flue gas. The original method to determine efficiency included many manual methods and lookup charts. As an example, you would measure the CO2 level and the stack temperature and then reference a slide scale that would give you the relative efficiency number. UEi's electronic combustion analyzers perform the measurements on a continuous basis, and can calculate the efficiency as adjustments are being made. With this information you are able to provide a before and after comparison of the combustion equipment in relatively little time as part of normal servicing.

NOTE: *Combustion analyzers measure the combustion efficiency. This is NOT the same as the AFUE indicated by the manufacturer. The AFUE is derived through an extensive process, and includes many additional parameters such as start-up and shut-down losses and shell losses as an example.*

GLOSSARY

SELECTOR AND DISPLAY PARAMETERS ON UEI SMART BELL

"ZErO" – Analyzer is performing the initial zero setting

CO2 (Carbon Dioxide) – Direct reading of the carbon dioxide sensor displayed in percentage (%)

Eff (Efficiency) – Calculated combustion (not appliance) efficiency based on measurements of CO2, Flue Temperature and fuel selected. The Smart Bell calculates gross combustion efficiency and automatically determines if the combustion is in the condensing mode to make appropriate corrections.

X-Air (Excess Air) – Excess Air is calculated for each fuel type from the CO2 measurement. It assumes that the combustion process is running fuel lean. It is important to make other measurements to confirm that this assumption is always correct.

O2 (Oxygen) – O2 is calculated for each fuel type from the CO2 measurement. It assumes that the combustion process is running fuel lean. It is important to make other measurements to confirm that this assumption is always correct.

TFlue (Flue Temperature) – TFlue is a direct measurement of the temperature at the tip of the flue probe. This measurement is used to determine the net temperature for use in calculation of combustion efficiency.

TNet (Net Temperature) – Differential temperature of Tflue and ambient (or inlet if set).

BAT symbol - Displays the Battery power available.

Fuels Available

Selector Position	*Display*	*Type*
L Oil	LOIL	Light Oil
Propane	PrOP	Propane
Nat Gas	nGAS	Natural Gas
H Oil	HOIL	Heavy Oil
Wood	uOOd	Wood

METER SPECIFICATIONS

(NOTE: MAY BE SUBJECT TO CHANGE)

PARAMETER	RESOLUTION	ACCURACY	RANGE
TEMP MEASUREMENT FLUE TEMPERATURE	1.0 ˚F	± (5 ˚F (2˚C)+0.3% READING)	32-1112 ˚F (0-600˚C)
TEMP (NETT) *2	1.0 ˚F	± (5 ˚F (2˚C)+0.3% READING)	32-1112 ˚F (0-600˚C)
GAS MEASUREMENT			
CARBON DIOXIDE *1	0.1%	±0.2%	0-30%
EFFICIENCY *2	0.1%	±1.0%	0-99.9%
EXCESS AIR *3	0.1%	±0.2%	0-250%
PRE-PROGRAMMED FUELS	NATURAL GAS, LIGHT OIL, PROPANE, WOOD, HEAVY OIL.		
DIMENSIONS (APPROXIMATE) WEIGHT HANDSET PROBE	 1 LB 7" X 2" X 31/4" 4" X 1/4" STAINLESS STEEL SHAFT NOMINAL 36" NEOPRENE HOSE.		
AMBIENT OPERATING RANGE	+320F TO 104∞F 10% TO 90% RH NON- CONDENSING 850 TO 1100 MMHG ATMOSPHERIC PRESSURE		
BATTERY LIFE	4 AA CELLS >8 HOURS USING ALKALINE AA CELLS		

*1 USING DRY GASES AT STP
*2 CALCULATED
*3 CALCULATED ASSUMING FUEL LEAN COMBUSTION.

SMART BELL COMBUSTION METER™ LIMITED WARRANTY

The ***SMART BELL*** Combustion Meter is warranted to be free from defects in materials and workmanship for a period of 5 Years (10 year sensor life expectancy) from the date of purchase. If within the warranty period your instrument should become inoperative from such defects, the unit will be repaired or replaced at UEi's option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Batteries and consequential damage resulting from failed batteries are not covered by warranty.

Any implied warranties, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the express warranty. UEi shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expenses or economic loss. A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired (when repairable) for a service charge. Return the unit postage paid and insured to:

3080 SW Nimbus, Beaverton OR. 97008

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

USA: *1.800.547.5740 • Fax: 503.643.6322*
CANADA: *1-877-475-0648 • Fax: 604.278.8299*
WWW.UEITEST.COM

CENV911/10k 0808 XXXXX