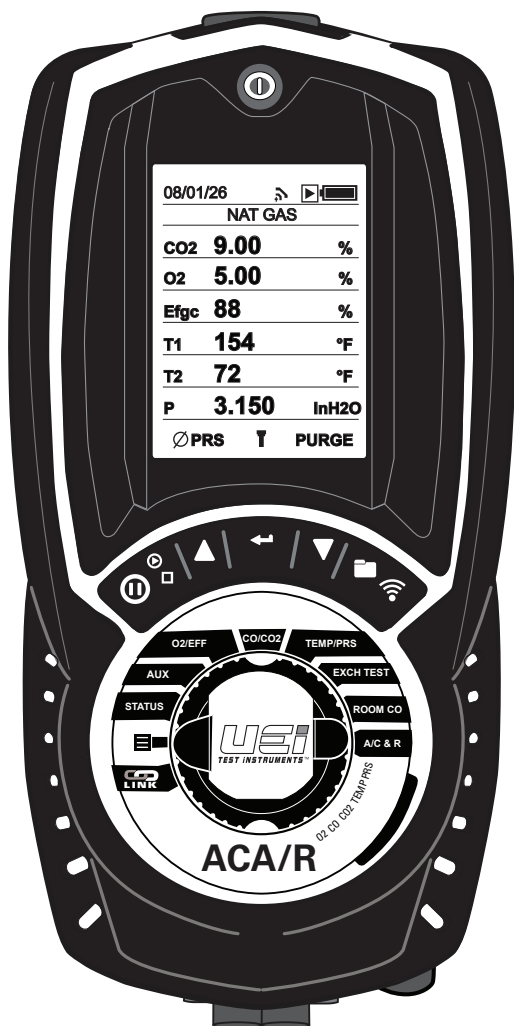


ACA/R: Advanced Combustion Analyzer & Refrigerant Analyzer

v2026.08



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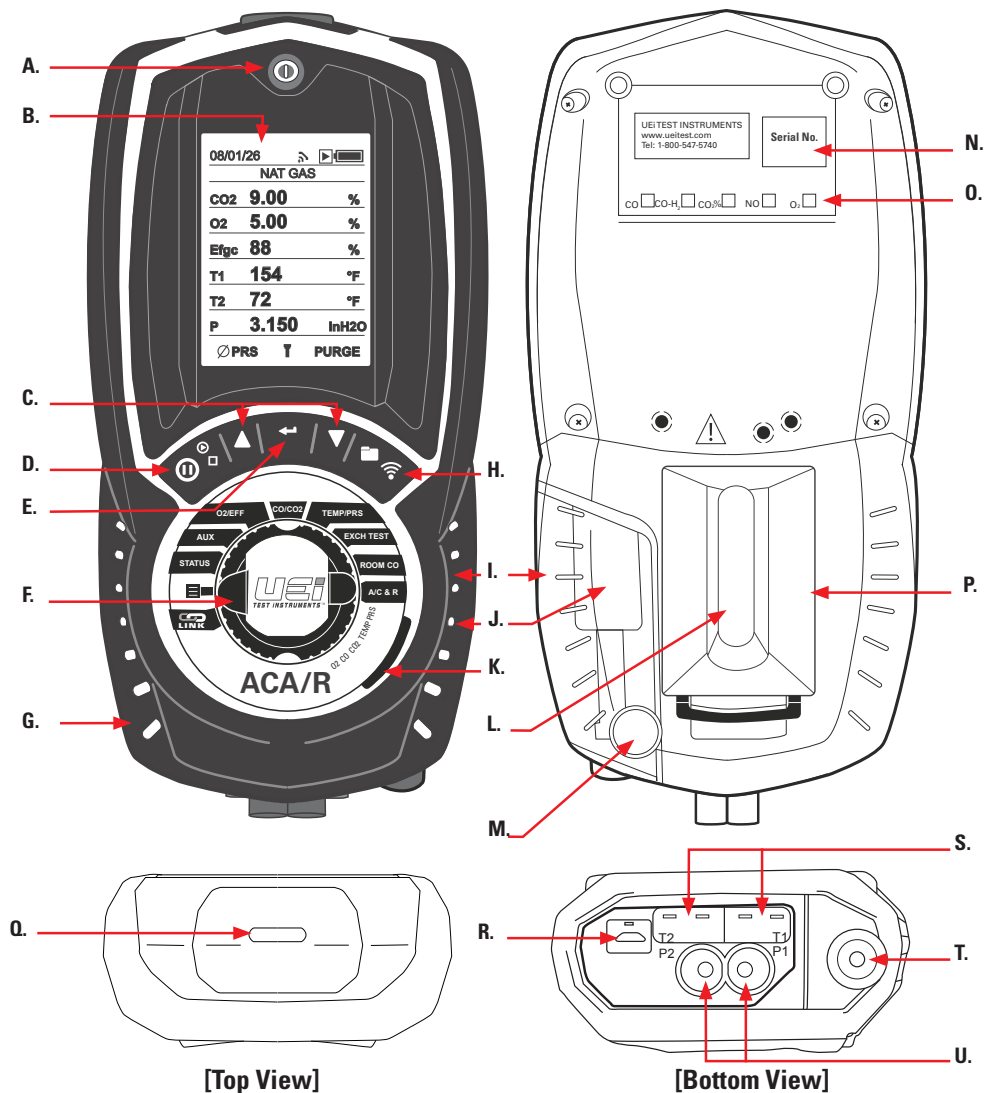
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ACA/R OVERVIEW



[Top View]

[Bottom View]

- A. On/ Off (Power) Button
- B. Graphic Backlit Display: Press any button to turn Back light on
- C. UP/DOWN Button: Short press to navigate "UP" or "DOWN"
- D. Pump Toggle button: Long press to pump on/off, short press holds the readings and the screen flashes
- E. ENTER Button: Short press select current option displayed
- F. Rotary Dial
- G. Protective Rubber Boot With Magnets
- H. Printing and Log button:
- I. Water Trap (under Protective Boot)
- J. Particle Filter (inside water trap)
- K. LED Water Trap Indication: LED is active while the pump is on to bring user awareness to any condensate building up in the water trap

- L. Grip Indentation: Indentation for fingers to grip analyzer
- M. Water Trap Drain Plug: (Red plug; take caution NOT to damage plug when removing protective boot)
- N. Serial Number QR Code
- O. Sensors Fitted: (label under Protective Boot) Indication of sensors installed when shipped
- P. Battery Compartment (under Protective Boot)
- Q. Infrared Printer Port
- R. Battery Charge USB Adapter Connection
- S. Temperature Connections: Flue Probe Temperature T1, Inlet Temperature: T2
- T. Flue Gas Inlet Connection
- U. Pressure Connections: Pressure P1, Differential Pressure: P2

DISPLAY SYMBOLS

Combustion Screens

ATM	Atmospheric pressure
BIO OIL	Pyrolysis Oil
BUTANE	Butane
CAL	Days until Calibration
CO	Carbon Monoxide
CO2	Carbon Dioxide
COa	CO Air Free
CO _n	Carbon Monoxide Normalized
CO _x	Max CO Recorded Reading
Ef _{gc}	Efficiency (Gross condensing)
G	mmhg, millimeters of mercury
H	hpa, hectopascal
H OIL	Heavy Oil

H2	Hydrogen
I	inH2O, inches of water
K	Kpa, kilopascal
L OIL	Light Oil
Loss	Stack Loss
LPG	Liquefied Petroleum Gas
M	mbar, millibar
NAT GAS	Natural Gas
O2	Oxygen
P	Pressure (TMP/PRS)
P	Pa, Pascal (PRS UNIT)
PELLETS	Fuel Pellets
PI	Poison Index

PROPANE	Propane
Ra	CO/CO2 Ratio
S	PSI, pound per sq inch
T1	Temperature port 1
T2	Temperature port 2
Ta	Ambient Temperature
Xair	Excess Air
ΔT	Delta Temperature T1-T2
ΔTc	T1-Ta
W	mmH2O
λ	Air-Fuel Ratio

AC & R Screens

HP	High Side Pressure
CO	Condensing Temperature
SC	Subcooling
LP	Low Side Pressure
EV	Evaporator Temperature
SH	Superheat
T SH	Target Superheat

DRY B	Dry Bulb
WET B	Wet Bulb
RH	Relative Humidity
DEW P	Dew Point

TARGET	Target Evacuation or Rise
TIME	Test Duration
VAC	Vacuum
VAC M	Deepest Vacuum (Max)
Δ VAC	Vacuum Differential
T AMB	Ambient Temperature
H2O	H2O Saturation Point

ICONS

	AUX Setting
	Battery Level
	Display Backlight
	Fuel Setting
	LINK Connection
	MENU Screen

	Pump On
	Pump Off
	Pause Readings
	Save Log
	Wireless
	ZERO CO2

	Zero Pressure
	AC High Side
	AC Low Side
	Refrigerant Type

MENU SCREEN - START UP

Press ① **“Power”** Button for 2 seconds. The analyzer will perform a 60 second purge. This should be done in fresh air without the probe connected.

Rotate Selector Dial to **MENU** to set up or customize your settings.

Selected parameter is highlighted on left of display line.

Use ▲ and ▼ **ARROW BUTTONS** to scroll menu options.

Press ⬅ **Button** to edit a parameter.

Press ▲ and ▼ **ARROW BUTTONS** to change contents of field.

Press ⬅ **Button** to enter content and move to next field.



STATUS SCREEN

Rotate Selector Dial to **STATUS** to view parameters

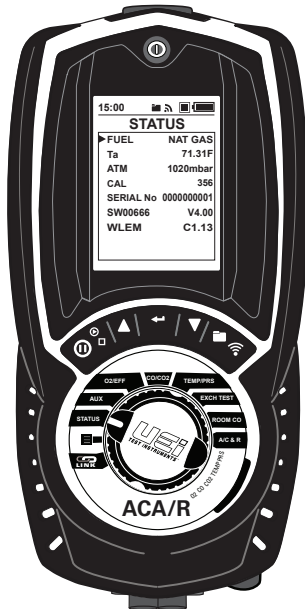
- FUEL
- Ta
- ATM
- CAL
- SERIAL NUMBER
- Software version
- Firmware version

Change Fuel Type in STATUS screen

Press ▲ and ▼ **ARROW BUTTONS** to change currently selected fuel. Then rotate dial to test position.

- NAT GAS
- PELLETS
- H OIL (Heavy Oil)
- BIO OIL
- L OIL (Light Oil)
- LPG
- BUTANE
- PROPANE

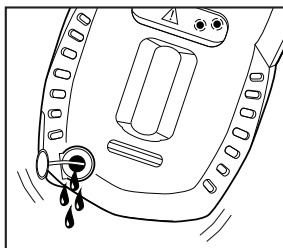
Changing fuel is also available in each testing screen.



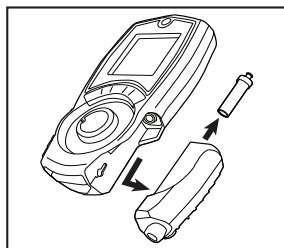
BEFORE TESTING

CHECKLIST

- ☐ Check for clean particle filter
- ☐ Water trap and probe line are free of condensate
- ☐ Water trap is fitted correctly
- ☐ Power on and zero in fresh air **without** flue gas probe attached.
- ☐ All hose and thermocouple connections are properly secured

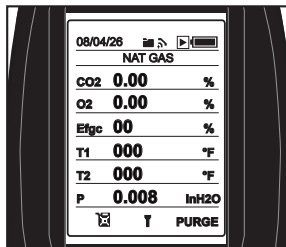


Remove the rubber boot and red drain plug. Allow the water to drain out. Re-insert the rubber plug and replace boot cover.

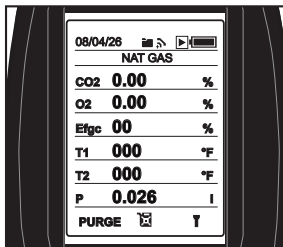


Remove protective rubber boot. Remove water trap from analyzer. Remove particle filter from water trap and replace with new one. Reattach trap and boot.

CHANGING FUEL TYPE IN TEST SCREENS

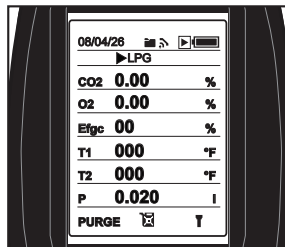


FUEL TYPE is listed on top line in testing screens. To change:



Scroll ▲ or ▼ so **FUEL** icon is centered on bottom line.

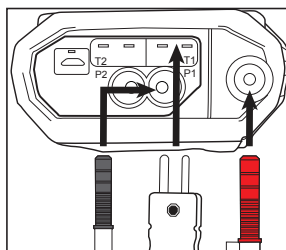
Press ◀ to select and icon blinks when ready to edit.



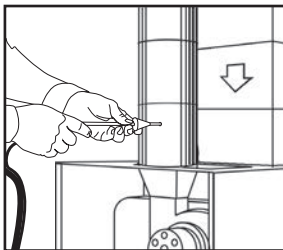
Scroll ▲ or ▼ to change **FUEL** on top line.

Press ◀ to select fuel.

COMBUSTION TEST START UP



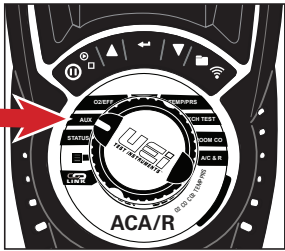
Connect flue probe gas valve (red) to the analyzer gas inlet. Connect thermocouple to T1. Connect pressure probe (black) to P1.



Insert Flue probe into stack. Adjust cone so the end of the probe is approximately at the center of the stack.

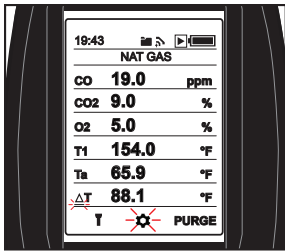
NOTE: You will have to install test port at least 3/8". Use appropriate sealing method after testing.

AUXILIARY SCREEN

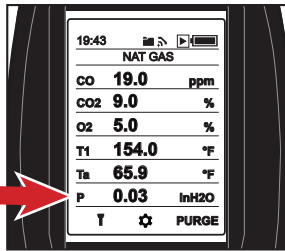


The **AUX** screen allows you to assign any of the following parameters on any display line.

CO, ΔO2, COa, H2, PI, λ, Blank, Fuel, Xair, Loss, Efgc, P, Ra, ATM, Ta, ΔT, ΔTc, T2, T1, O2, CO2, COx, COa, COn



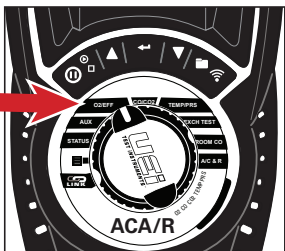
To customize Press ▲ or ▼ until **SETTING** icon is centered on bottom line. Press ← to edit. Icon will blink in edit mode.



Press ← to advance to line to edit. Scroll ▲ or ▼ to change parameter. Press ← to select to change and advance. Repeat as needed. Press ← to advance to final line until **SETTING** icon stops blinking.

AUX setting is saved until values are changed.

COMBUSTION TESTING



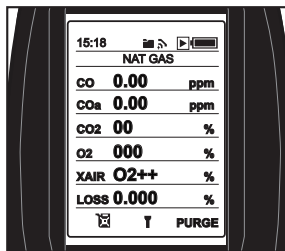
Rotate selector dial to **O2/eff** to view:

CO2 = Carbon Dioxide
O2 = Oxygen
Efgc = Efficiency (gross)
T1 = Temperature inlet 1
T2 = Temperature inlet 2
P = Pressure inlet 1



Rotate selector dial to **CO/CO2** to view:

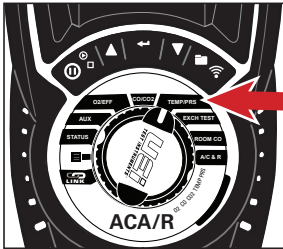
CO = Carbon Monoxide
COa = CO air free
CO2 = Carbon Dioxide
O2 = Oxygen
XAIR = Excess air
LOSS = Stack loss



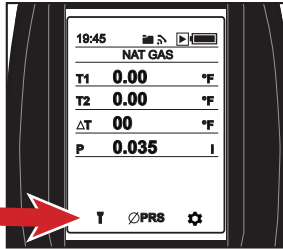
Make any adjustments as needed for proper combustion and wait for analyzer to display change in readings. (Repeat as necessary).

Once complete, remove probe from stack, allow analyzer to purge in fresh air until CO sensor readings return to Zero (0) and O2 readings reading return to approximately 20.9%. Continue to the next test or power analyzer off. Probe will be hot, see **POST TESTING PRECAUTIONS** Pg 10.

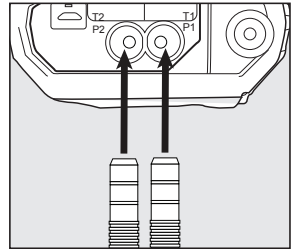
PRESSURE TEST



Rotate the selector dial to **TEMP/PRS**.

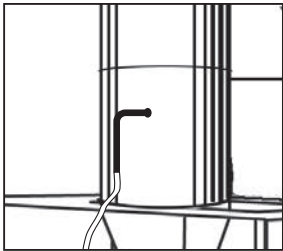


Start by **ZEROing** PRESSURE with **No Hoses Connected**. Press **▲** or **▼** until **Zero Pressure** icon is centered on bottom line. Press and hold **←** to Zero.

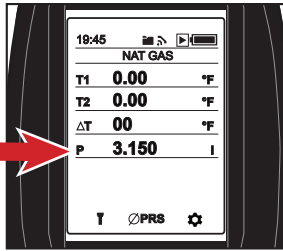


Connect true-draft hose to P1. Connect second probe to P2 for differential pressure. Press and hold **FILE** icon to save LOG.

PRESSURE TEST

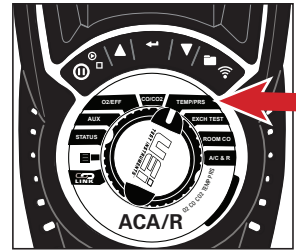


Place combustion probe or true draft probe tip in the flue to measure draft. Connect static pressure hose for differential pressure.



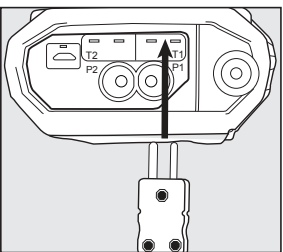
Pressure reading displayed on line as P1 or differential if P1 and P2 are connected. Units can be changed in **MENU** screen. Press and hold **FILE** icon to save LOG.

TEMPERATURE TEST

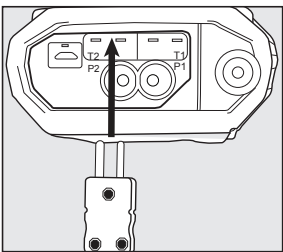


Rotate the selector dial to **TEMP/PRS**

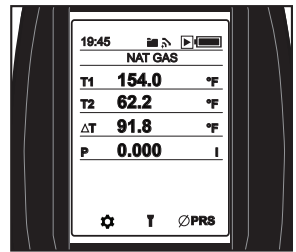
TEMPERATURE TEST



Connect probe to T1. Compatible with any K-type thermocouple probe or clamp.



Connect second probe to T2. Compatible any K-type thermocouple probe or clamp.

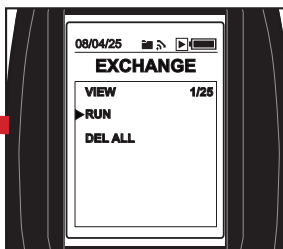


Measurements are displayed on lines T1, T2, and ΔT. Press and hold **FILE** icon to save LOG.

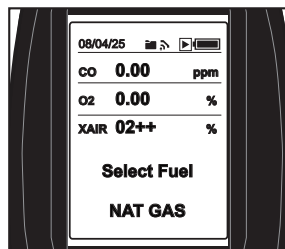
HEAT EXCHANGER TEST



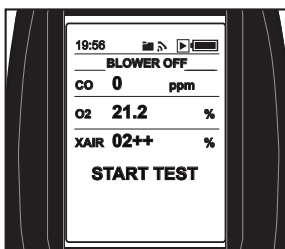
Rotate dial to **EXCH TEST**.



Press **←** on **RUN** to start.
or
Press **▲** or **▼** to **VIEW**
or **DELETE ALL** logs.
Press **←** to Select.

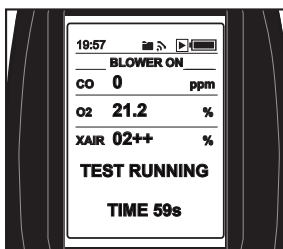


Scroll **▲** or **▼** to change **FUEL** type.
Press **←** to start.

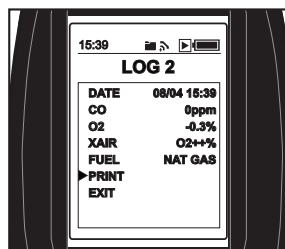


Call for heat on the system.
Observe and wait for O₂
readings to stabilize.

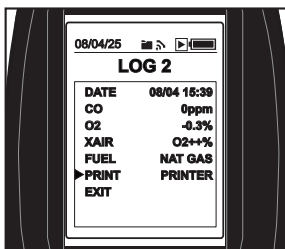
After the blower turns on,
press **←** to start the
Post-Blower test



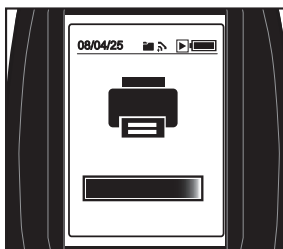
The analyzer will count down
60 seconds, then record the
Post-Blower values for CO,
O₂ and Excess Air.



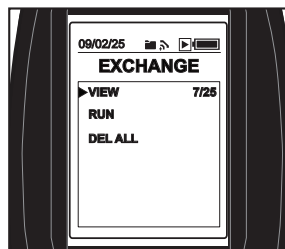
Test results and **LOG** number
will display on top line. Press
and hold **FILE** icon to save
LOG.
If done, Press **▼** to **EXIT**
Press **←** to return to main
menu.



To **PRINT** test
Press **←** to select output.
Press **▲** or **▼** to switch
between **PRINTER** or
WIRELESS output.

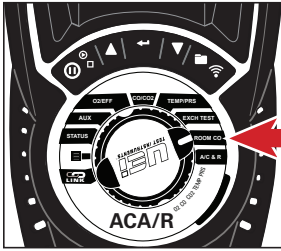


Press **←** to select.
Data is sent to selected device



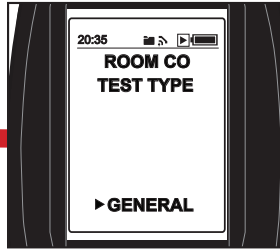
To **VIEW** logs go to **EXCH TEST**
home screen.
Press **▲** to VIEW line.
Press **←** to select.
Scroll **▲** or **▼** to change
LOG numbers. Press **←** to view.

ROOM CO TEST



No probes or hose connections required for this test.

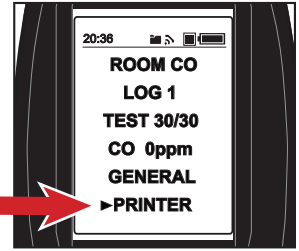
Rotate dial to **ROOM CO**.



Press **←** to select **GENERAL** test type.

Press **←** to start.

Test will count down as CO readings record every minute for 30 minutes.

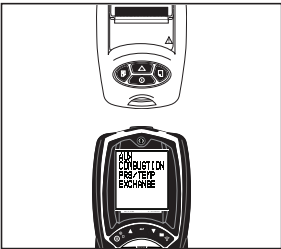


When completed, **LOG** number displays on top line.

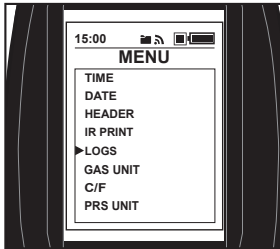
Press **←** to PRINT

Press **▲** or **▼** to switch between **PRINTER** or **WIRELESS** output.

PRINTING AND LOGGING



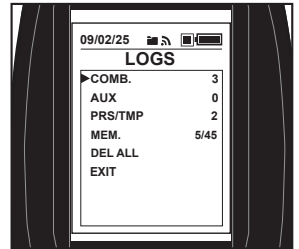
Align Printer in line above analyzer.



Rotate rotary dial to **Menu**.

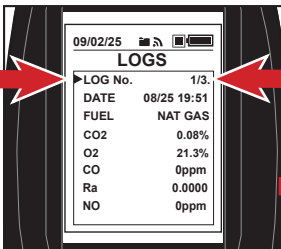
Press **▲** or **▼** to select **LOGS**.

Press **←** to select **LOGS**.



Scroll **▲** or **▼** to change type of **LOG**.

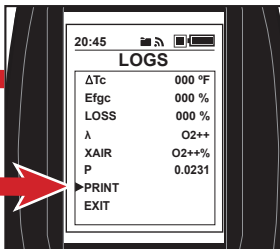
Press **←** Button to select



Press **←** to edit **LOG** number.

Scroll **▲** or **▼** to change **LOG** number.

Press **←** to select

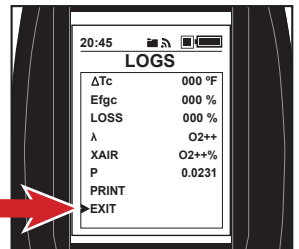


Scroll **▲** or **▼** to **PRINT**.

Press **←** to select.

Press **▲** or **▼** to switch between **PRINTER** or **WIRELESS**.

Press **←** to select.



Scroll **▲** or **▼** to **EXIT**.

Press **←** to select.

ADDITIONAL ACA/R DETAILS

This quick start guide covers basic analyzer setup and operations. The ACA/R Owner Manual will provide additional details about *AC & R screens, connecting optional wireless probes to analyzer, care, operation, safety, and product specifications*. You can download the complete owner manual by scanning this QR code or visit our website at www.ueitest.com, navigate to the ACA/R product page to download a PDF.



**Download the full
Owners Manual at
UEiTEST.COM or
SCAN THIS CODE**

UEi HUB App

The ACA/R or ACA/RN combustion analyzers connect to the free app, **UEi HUB**. Scan the QR code to download app.

For full app details you can download the owner manual by scanning the QR code above or visit our website at www.ueitest.com, navigate to the ACA/R product page to download the PDF manual.

SCAN FOR FREE APP



UEi Concierge+

UEi Concierge+ offers customers one-on-one training with a certified technician. Register your analyzer at ueitest.com to receive an email with instructions on booking a 15-minute call with a certified technician. A link takes you to an online calendar with available dates and times, you choose the time that works best for you, then we send a calendar reminder.

UEi LOCK

An optional anti-theft feature that can be turned on through the App UEi HUB to help prevent use if stolen. See full owners manual for details.

BATTERIES



The analyzer is fitted with 3 (AA) size rechargeable batteries. Observe correct polarity when replacing.

Always check operation immediately after battery replacement.

Do not leave batteries in unit for extended periods of non-use.



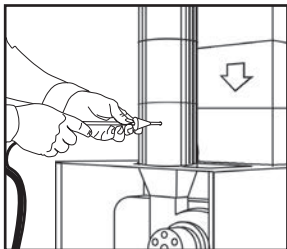
WARNING

Do not recharge with Alkaline batteries fitted. Alkaline batteries are not rechargeable. Attempting to recharge alkaline batteries may result in product damage and create a fire risk.

NOTE: Time and Date will need to be reset after changing batteries.

Always dispose batteries using approved disposal methods that protect the environment.

POST TESTING



Remove the probe from the flue and allow analyzer to purge with fresh air until CO levels return to lower thresholds.

CAUTION: Probe tip will be HOT.

POWERING OFF

When you power off the ACA/R, there is a 45 second purge. Analyzer will not shut off until CO levels return to lower thresholds.



CAUTION

Make sure you do not exceed the analyzer's operating specifications.

- Do not exceed the flue probes maximum temperature (1,112°F)
- Do not exceed the analyzer's internal temperature range 112°F (50°C)
- Do not put the analyzer on a hot surface
- Do not exceed the water trap's level
- Do not let the particle filter become dirty and blocked

WARRANTY

The ACA/R combustion analyzer is warranted for one year including sensors. 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 (calibration). 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. Warranty only covers hardware and does not extend to software applications or accessories. Contact UEi for specific warranty and service information.

UEi Test Instruments • 1-800-547-5740 • info@ueitest.com

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

WARRANTED FOR ANALYZER'S LIFE



The ACA/R one year warranty is extended 1 additional year with each recertification, for the working life of the analyzer, until we reasonably believe we cannot restore an analyzer to our original factory specification. Each warranty is conditional to terms outlined in the WARRANTY section above.

ANNUAL RECERTIFICATION SERVICES



BACKED BY



Our Award-Winning Promise To Never Let You Down

When you:

***Request Annual Recertification Online
Within 1 Year of Purchase or Last Service***



Contractors who book recertification of an ACA/R analyzer at www.ueitest.com/service within 12 months from either the date of purchase or the date of the last recertification will receive a warranty extended for 1 year plus::

Same Day Recertification return ships on the same business day received, **Guaranteed.***

Reduced Pricing over standard rates, transparent and up front, no surprises.

Free Shipping offers free UPS Ground shipping both to and from our service center.

PRODUCT REGISTRATION

Registering your analyzer online is quick and easy. Just log in or setup an account, it only takes a couple of minutes. Once logged in you can register your analyzer by providing some product information and uploading a proof-of-purchase.

When it's time to request annual recertification, we'll send you a reminder so you don't miss out on your **SERVICE+ GUARANTEED** benefits.

When it's time just,

- Log into your account
- Select the analyzer
- Select the service
- Place your order

It's That Easy!

Available to US customers only.

*Pricing subject to change without notice.

‡Analyzers with an additional NO (Nitric Oxide) sensor requires 48-hour turnaround.

WWW.UEITEST.COM

USA 1.800.547.5740