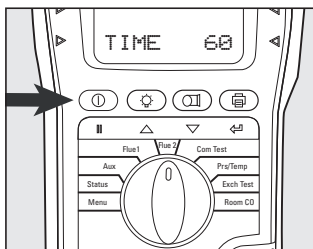


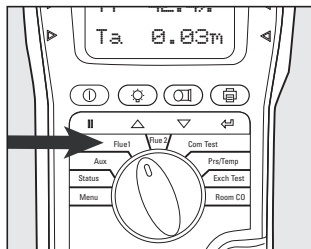
C165 QUICK START GUIDE



GETTING STARTED

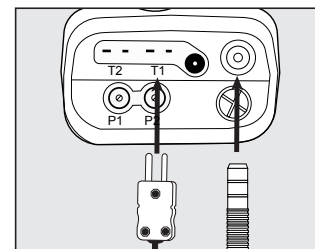


Press **⏻** "Power" in fresh air and allow to count-down for Fresh Air purge.



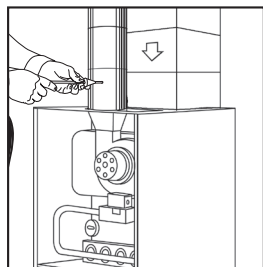
Rotate selector dial to **Flue 1**. In fresh air, O₂ reading should be 20.9% $\pm$ 0.3%.

Rotate selector dial to **Flue 2**. In fresh air, CO reading should be zero (0).

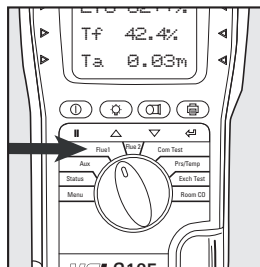


Connect the flue probe thermocouple connector to T1.
Connect flue probe to water trap.
Connect optional probe to T2.

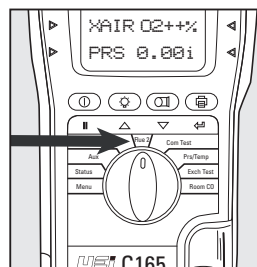
BASIC CO/COMBUSTION ANALYSIS



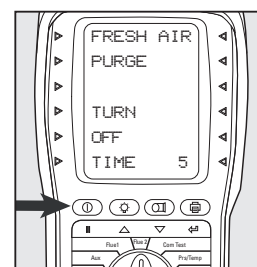
Insert Flue probe into stack.
Adjust cone so end of the probe is approximately at the center of the stack.
NOTE: You will have to drill a hole at least 3/8". Use appropriate sealing method after testing.



Rotate selector dial to **Flue 1** for: CO₂, O₂, Gross efficiency, Flue temperature, Inlet temperature.
Fuel type can be changed via **MENU** or **STATUS** setting

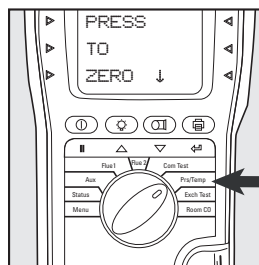


Rotate selector dial to **Flue 2** for: CO (ppm), Losses calculated, Excess air %, pressure reading
Fuel type can be changed via **MENU** or **STATUS** setting.
Make any adjustments as needed for proper combustion and wait for analyzer to display change in readings. (Repeat as necessary).

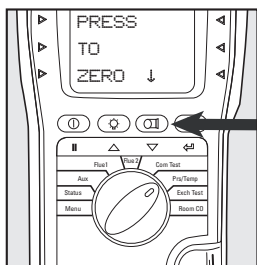


Once complete, remove probe from stack, allow analyzer to purge in fresh air until CO sensor readings return to ZERO (0) and O₂ readings reading return to 0% to 21%.
Continue to the next test or power analyzer off by pressing On/Off, if finished.
NOTE: Print and store functions may be used at any time during testing.

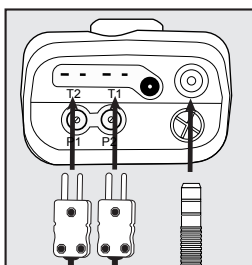
DIFFERENTIAL TEMPERATURE TEST



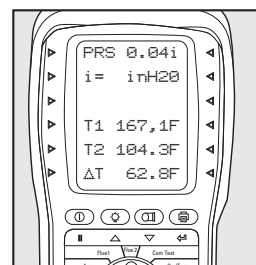
Rotate the selector dial to **Pressure/Temperature**.



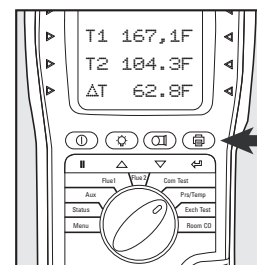
Press **⏻** "Pump" to ZERO (0) pressure sensor.



Connect probe to T1.
Connect probe to T2.
Compatible with any K-Type thermocouple probe or clamp.

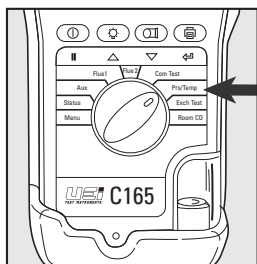


Connect thermocouples in test location to start testing
Observe T1, T2 and differential (Delta T).

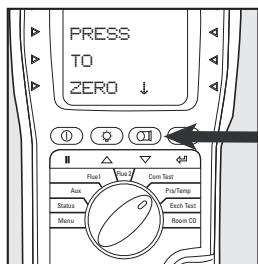


Press **⏻** "Print" to print results.
Press and Hold **⏻** to log results.

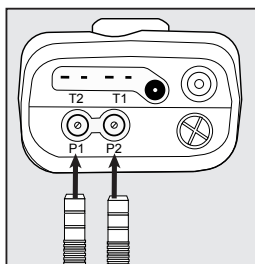
DRAFT & STATIC PRESSURE TEST



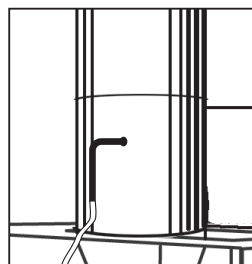
Rotate the selector dial to **Pressure/Temperature**.



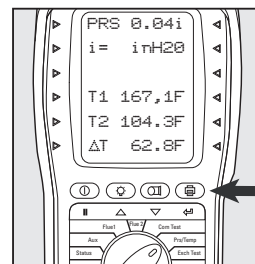
Press "Pump" to ZERO (0) pressure sensor.



Connect true draft hose to P1. Connect to P2 for differential. Place probe tip in stack to measure draft. Connect static pressure hose for measure differential pressure.



Place true draft probe tip in the flue to measure draft. You can also use the combustion probe for measuring pressure.



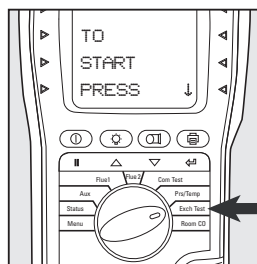
Press "Print" to print results.

Press and Hold to log results.

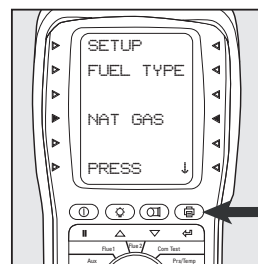
HEAT EXCHANGER TEST

There are many methods to test heat exchanger integrity. One of these is to observe Excess Air, O_2 AND CO readings both before and after the blower turns on. If the heat exchanger is sealed your O_2 and CO readings should remain fairly stable. A breach in the heat exchanger may allow fresh air to be forced into the flue after the blower turns on due to a pressure increase in the plenum. The result may be a rise in the measured O_2 in the stack gas and an increase in the Excess Air. In some sealed systems the fresh air drawn in the breach may reduce the combustion available leading to an increase in the CO reading. If either of these situations are present it is probable that there is a problem with the Heat Exchanger which may require additional testing and inspection.

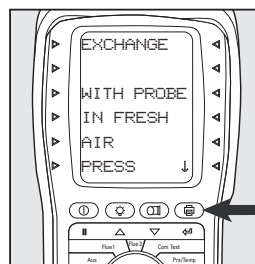
NOTE: Many cracks are invisible to borescopes or the naked eye and only open or separate from pressure or temperature during operation.



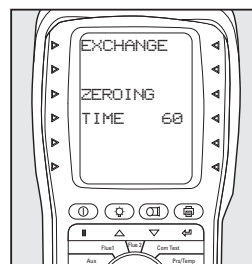
Rotate selector dial to **EXCH** Test, press the "Print".



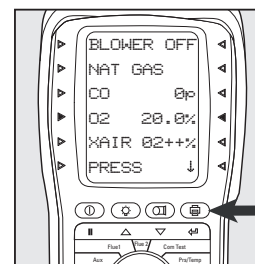
Confirm the Fuel Type. Scroll or to switch a different fuel type. Press to select fuel type.



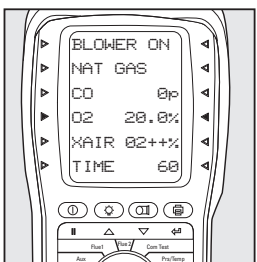
NOTE: The analyzer will perform a fresh air purge if it did not perform one on start up. Otherwise it will skip past the zeroing step to the Blower Off screen. See manual for details. Press to continue.



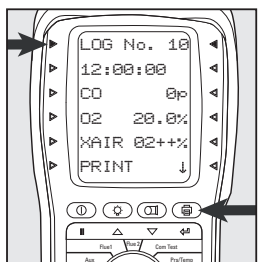
Ensure the analyzer is in fresh air during the countdown. The screen will automatically advance when complete.



Call for heat. Observe and wait for O_2 readings to stabilize. After the blower turns on, press the Button to start the Post-Blower test.



The analyzer will wait 60 seconds and then record the Post-Blower values for CO, O_2 and Excess Air.

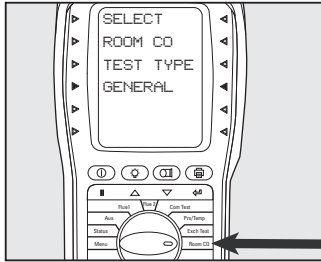


Test results will automatically be stored to exchange reports. Report includes both Pre and post Blower test segments.

Press to start printing. See **REPORTS** section in this guide.

CO ROOM TEST

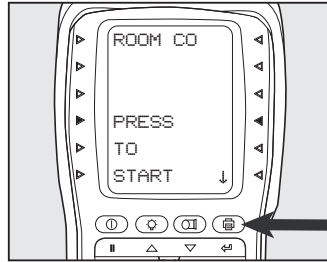
Great for checking ambient CO and back drafting situations



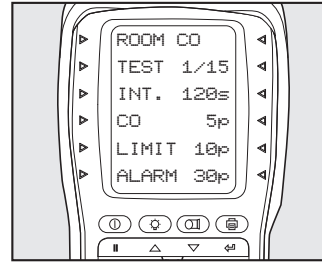
No probes or hose connections required for this test.

Rotate selector dial to **ROOM CO**.

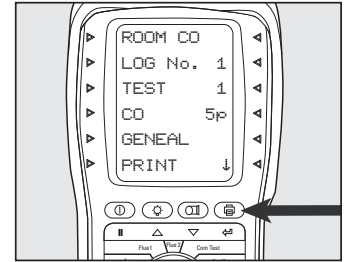
Press "Print" to start the **GENERAL** test.



Press start the test.



CO readings will be logged every 2 minutes for a 30 minute time span. Readings will be stored once the 30 minute test is completed.



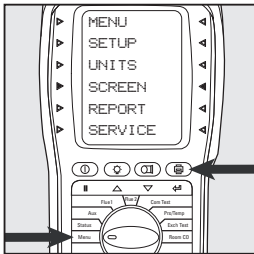
Press to print results.

Test results will automatically be stored in **ROOM CO** reports.

See **REPORTS** section in this guide.

AUX SETTING

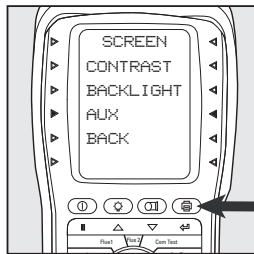
Programmable Auxiliary screen allows for Tech selectable test parameters to be chosen.



Rotate selector dial to **Menu**.

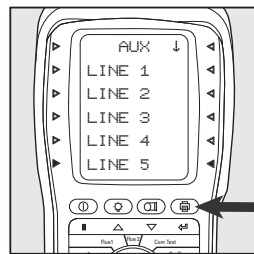
Scroll or to **Screen**.

Press "Print" to select.



Scroll or to **AUX**.

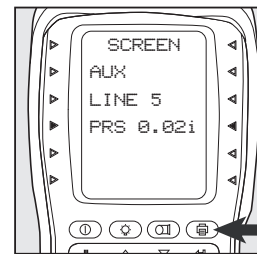
Press to select.



Scroll or to customize any Line.

Press to select.

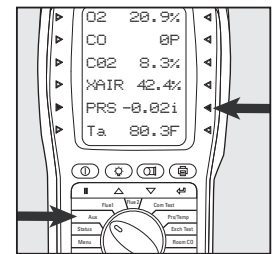
[Line 5 shown]



Scroll or to select the parameter for this line.

Press to select.

[Pressure shown]

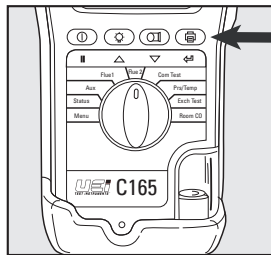


Rotate selector dial to **AUX** to view.

Custom selections will now display in **AUX** mode.

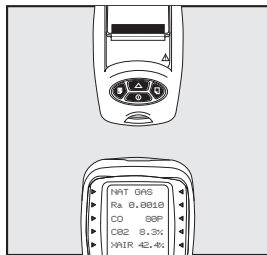
REPORTS: PRINTING & VIEWING

Print and Log easily from the following test screens: Aux, Flue 1, Flue 2, Commission Test, Pressure/Temperature, Exchange Test and Room CO



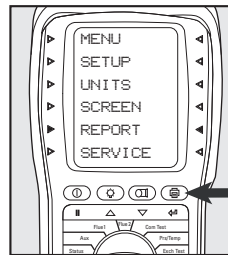
Press "Print" to start printouts of results from any test screen.

Press during printing to cancel.



Press and hold to log current readings.

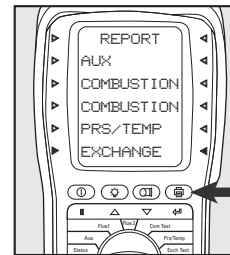
Align printer above Analyzer.



To view test results, rotate dial to **Menu**.

Scroll or to **Report**

Press to select.

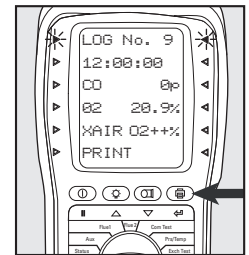


Scroll or to type of test wanted.

Press to select.

[Exchange shown]

Press to select **View**.



Press to select report log number. When indicator lights blink, use or to scroll through logged reports.

Press to view a selected report log.

HIGH CO ALERT

At 1000 ppm CO the screen will display **HIGH CO** and an indicator light will flash and analyzer will beep several times. Above 2000 ppm the purge pump starts.



MAIN MENU	SUB MENU	OPTIONS / COMMENTS
SETUP	LANGUAGE	English
	SET TIME	HH:MM:SS format e.g. 7 am = 07:00:00, 7 pm = 19:00:00
	SET DATE	MM/DD/YY format
	PRINTER	KM IRP KANE IRP-2 WIRELESS (if installed) SERIAL
	PASSKEY	1111 (wait 5 secs after entering last digit)
	BACK	
UNITS	FUEL TYPE	NAT GAS, TOWN GAS, COKE GAS, PROPANE, BUTANE, LPG, LIGHT OIL, BIO OIL, WOOD PELLETS, BIO GAS, USER 1 to 5
	FUEL ORIGIN	UK, FRANCE, SPAIN, N AMERICA, BELGIUM, NETHERLAND
	EFFICIENCY	GROSS, NET, GROSS COND, NET COND
	PRESSURE	FILTER: OFF = normal response. ON = slower (damped) response
		RESOLUTION: LOW = e.g. 0.00i inH2O resolution. HIGH = displays to an extra decimal place
		UNITS: mbar, Pa, PSI, mmHg, hPa, inH2O, mmH2O, kPa, psi
		TIME: Test units not available in North American market
		BACK:
	GAS	ppm, ppm(n), mg/m3, mg/m3(n), mg/kWh, mg/kWh(n)
	TEMP	C, F
	O ₂ REF	Up/down to set value (3% default)
	NO _x CALC	Up/down to set value (5% default)
SCREEN	BACK	
	CONTRAST	Factory setting is 14
	BACKLIGHT	0 to 300 secs
	AUX	Enables users to customize the parameters on the AUX display: LINE 1, LINE 2, LINE 3, LINE 4, LINE 5, LINE 6, BACK
REPORT	BACK	
	AUX	Stored AUX tests VIEW, DEL ALL, BACK
	COMBUSTION	Stored combustion tests: VIEW, DEL ALL, BACK
	COMMISSION	Stored commission tests: VIEW, DEL ALL, BACK
	PRS/TEMP	Stored pressure tests: VIEW, DEL ALL, BACK
	EXCH	Stored exchange tests: VIEW, DEL ALL, BACK
	ROOM CO	Stored room CO tests: VIEW, DEL ALL, BACK
	HEADER	LINE 1 LINE 2 BACK
SERVICE	BACK	
	CODE	Password protected for authorized service agents only. Leave set to 000000.

Test Equipment Depot - 800.517.8431 - 99 Washington Street Melrose, MA 02176

TestEquipmentDepot.com

