

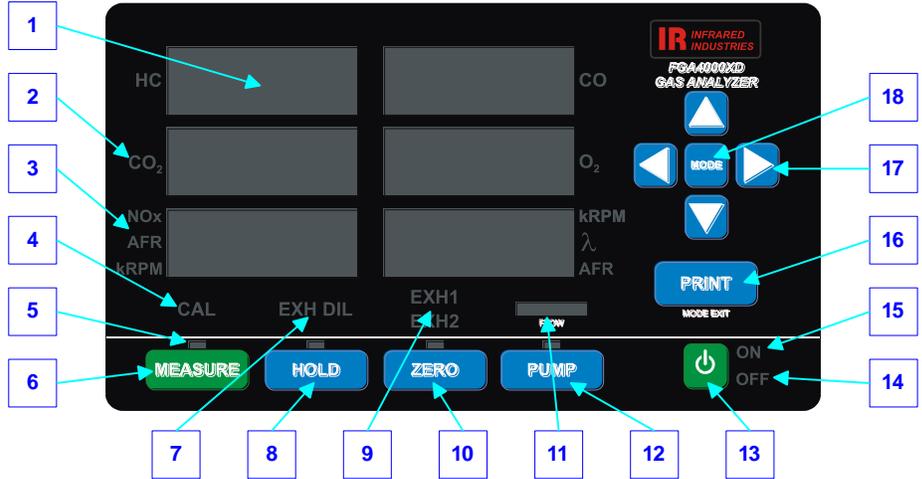
For a complete description of all the features of the FGA4000XDS Gas Analyzer, please refer to the Operator's Manual.

## Getting Familiar With Your FGA4000XDS Gas Analyzer

FGA4000XDS front panel can display six parameters: Four fixed parameters (HC, CO, CO<sub>2</sub>, and O<sub>2</sub>) and any two user-selectable parameters from NO<sub>x</sub>, AFR, RPM, and Lambda.

### Identifying Parts

- [1] 4-Digit LED window x6.
- [2] Fixed Window Identifier x4.
- [3] User-Selectable Window Identifier x2.
- [4] Calibration Indicator. On in Calibration Mode, Blink when performing Calibration Calculation with Cal gas present.
- [5] Button Identifiers x4. On or Blink when button is selected; Off when de-selected.
- [6] Measure Button. Press to begin measure mode. Pump is turned on automatically in measure mode.
- [7] Exhaust Dilution indicator. On when Dilution Mode is selected; Blink when Dilution has occurred.
- [8] Hold Button. Freezes all six display parameters in Measure mode only. Blinks when in Hold.
- [9] Dual Exhaust Mode. Indicates which exhaust pipe the sampling probe should be in.
- [10] Zero Button. Zeros the analyzer for approximately 1 minute. Pump is automatically controlled during zero.
- [11] Flow Indicator. During pump's operation, all bars will be on. In case of a flow restriction in the gas sampling system, the bars will turn off starting from right side indicating flow restriction. In case of total restriction, the first segment will blink indicating no flow.
- [12] Pump Button. Allows manual on/off operation of the pump. Can be used to purge gas from the analyzer.
- [13] Power Button. Push momentarily to turn on the analyzer. **Push and Hold for 2 seconds to turn off the analyzer.**
- [14] OFF indicator. Indicates the analyzer is plugged into a power source although the analyzer is off.
- [15] ON indicator. Indicates the analyzer is on and operational.



- [16] Print / Mode Exit button. In Measure or standby mode, the button will start the optional onboard or external printer. When in mode selection process, initiated by Mode button [18], Print / Mode exit button will terminate the mode selection and go back to standby mode.
- [17] Arrow buttons x4 used to navigate through the MODE OPTION MENU selection operation.
- [18] Mode Button. Enters the mode selection operation where different aspects of the analyzer can be set up or changed. Refer to the Mode Selection section for more detail.

### Initial Power-up

After plugging in the FGA4000XDS Gas Analyzer, the OFF light [14] is lit indicating power is supplied to the FGA4000XDS Gas Analyzer. Press the Power button [13] to turn on the unit. In the first 5 seconds, all display segments and indicators will light in order to make sure they are functional. The front panel will then display **PLEASE STAND BY** while the analyzer is warming up. The warm-up times may vary depending on the analyzer's internal temperature. The Zero and Pump indicators will be on during approximately 30 seconds after warm-up period. Do not attempt to flow any gases into the analyzer through the CAL port. This will severely affect the accuracy of the analyzer.

### Measuring Gases

Once the analyzer is warmed up, you can begin measuring gas concentrations by connecting the sampling hose/probe assembly to the inlet port located on the filter in the back of the analyzer. Insert sampling probe to a gas source or an exhaust stream. Press the Measure button [6] to begin sampling of the gases. Allow a few seconds for the gases to reach the analyzer. While in measure mode, you can hold or freeze the display values by pressing the Hold button [8].

### Selecting Different Parameters to Display

The bottom two display windows are configurable to display any two of four parameters (NO<sub>x</sub> and kRPM are options and may not appear as valid choices in your analyzer). Press Mode button [18] once to select what parameter is displayed on bottom left window. Use the Up and Down arrow keys to select one of the identifiers [3]. Press Mode button [18] again to select what parameter is displayed on bottom right window. Press Print / Mode Exit button [16] to return to stand by operation.

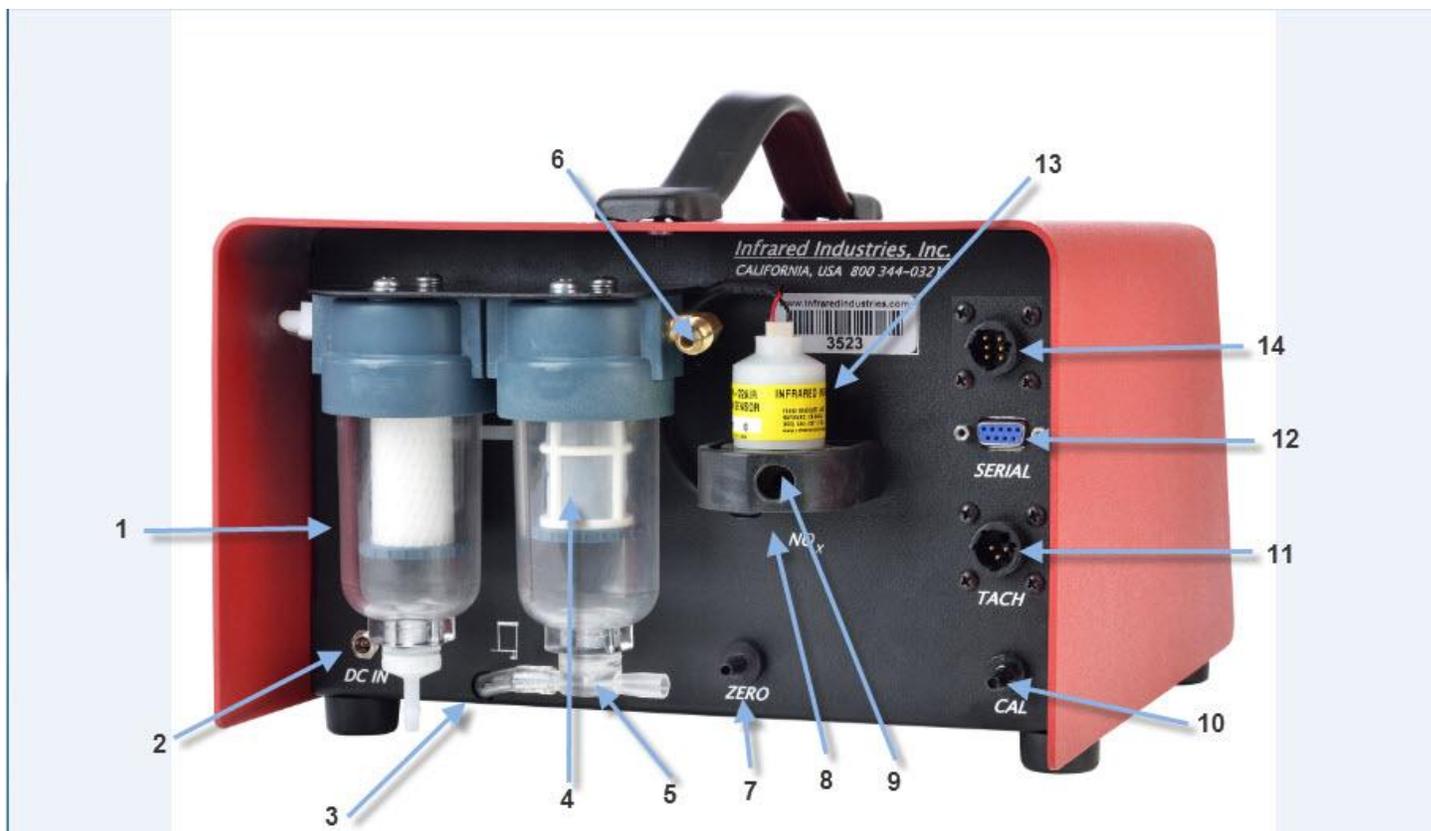
### Field Calibration

It is occasionally necessary to field calibrate the analyzer using BAR certified gas mixtures. In order to calibrate the analyzer press the Mode button [18] repeatedly until you see **FIELD CAL NO** appear on the screen. Press the Up arrow button once to select **YES** and then press Mode. The CAL indicator [4] will be on and the analyzer will enter a purge and zero sequence. Please wait until you see **ENTR TAGS GO**. Press the Mode button [18] and begin entering the Tag values in each of the windows. **For HC enter the actual propane tag value.** The analyzer will automatically use the correct PEF ratio. Use the Up or Down arrow keys to increment or decrement each digit and Left or Right arrows to move to individual digits. Press the Mode button [18] to advance to the next window. Enter all zeros if do not wish to calibrate a particular gas. We recommend always entering all zeros for O<sub>2</sub> window. By pressing the Mode button after entering the last tag value, you will see the message: **TURN CAL GAS ON GO**. Make sure the "Cal Gas" is connected to the CAL port in the back of the unit. CAL port is located in the bottom center of the back panel. Turn on the gas mixture and press the Mode button. You will see concentrations changing on the display. Wait until all the values have stabilized. This may take a few seconds. When the values are stable, press the Mode button [18]. The CAL indicator will be blinking. Do not disturb the gas flow at this point. When the CAL indicator turns off, you will see the message: **TURN CAL GAS OFF GO**. You can turn off the "Cal Gas" and disconnect the hose from the CAL port. Within a minute the analyzer will purge the "Cal Gas" and re-zero itself. The field calibration will then be complete.

### LED Character Reference

The following table demonstrates how the English alphabet will be displayed on the FGA4000XDS Gas Analyzer screen:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z



[1] Paper Filter Element

[2] 12 Volt DC Power Connector

[3] Secondary Filter Drain

[4] Water Separator Screen

[5] Aspirator/Water Purge Port

[6] Sample Hose Connector

[7] Zero Port

[8] NO<sub>x</sub> Cell (5 gas only)

[9] Sample Gas Exhaust Port

[10] Calibration Port

[11] TACH Connector

[12] Serial Communication Port

[13] O<sub>2</sub> Cell

[14] DAC Connector