

Troubleshooting Table

Failed Test/Error	Components to Check	How to Check	Possible Emission Service Required
CO2/CH4 Zero or Span Failure	Carbon filter, Gas Sensor, or Cal Gas Bottle	Check to make sure that the calibration gas concentration was entered properly and there is still gas in the bottle. If the carbon filter is brand new the readings can take longer to settle.	CO2/CH4 sensor
O2 Zero Failure	Sample Train or Rear Filter	Check for leaks in connections. Leaks can be caused by worn out hose barbs, bad O-rings on the quick connects or holes in tubing.	O2 Sensor
Sample Train Test Failure	Sample Train, Quick Connects, or Rear Filter	Check for leaks in connections. Leaks can be caused by worn out hose barbs, bad O-rings on the quick connects or holes in tubing.	O2 Sensor
O2 Span Failure	Cal Gas Bottle	Check to make sure that the calibration gas concentration was properly entered and there is still gas in the bottle.	O2 Sensor
Pressure Sensor Zero Failure	Sample Train and Hoses	Check to make sure that the hoses are connected and not being moved around. If windy, it may be necessary to move the auto calibrator out of the wind.	Pressure sensors
Empty Cal Gas Bottle Dialog Box	Cal Gas Bottles or Demand Flow Regulator	This error message indicates that the calibration gas bottle that is currently selected is empty. If calibration gas bottles empty quickly, the demand flow regulator may have a leak.	Purchase more Cal Gas Bottles or a new Demand Flow Regulator

QUICK-START GUIDE

ENVISION

AUTO-CALIBRATOR



150 Smokerise Drive
Wadsworth, OH 44281

www.ElkinsEarthworks.com
330-725-7766

Inspected by: _____

Date: _____

Connecting Hoses to the Envision Auto Calibrator

All five ports on the EAC should be connected before running an auto calibration routine. The 3 bottom ports connect to the Envision. These ports are labelled with the same name and color of the corresponding ports on the Envision. The two top ports connect to the CH₄/CO₂ bottle and the O₂ bottle and are labelled accordingly. The CH₄/CO₂ bottle consists of a mixture of CH₄, CO₂, and N₂. It is used to span CH₄ and CO₂ and to zero O₂. It is also used to check the sample train for possible O₂ leaks. The O₂ bottle consists of a mixture of O₂ and N₂. It is used to span O₂ and to zero CH₄ and CO₂.

Turning the Envision and Auto Calibrator On

To turn the Envision on, press the “Power” button once, then press the “Bluetooth” button once. The “Power” light should glow steadily, and the “Bluetooth” light should begin flashing. To turn the EAC on, press the “Power” button once. The “Power” light should glow steadily, and the “Bluetooth” light should begin flashing. The “Battery” button on either unit may be pressed at any time to display the battery current state of charge. If you are using a Bluetooth temperature probe, it should also be turned on at this time.

Connecting to the Elkins Gas Analyzer Software

With all hoses connected, the Envision on, the EAC on, and any Bluetooth temperature probe on, start the Elkins Gas Analyzer software on the tablet or handheld PC. From the Select Meter screen, click the “Search” button. When the search is completed, the Envision, the EAC, and the Bluetooth temperature probe, should appear in the search list. The EAC appears as “AutoCal XXXXXXXX” where “XXXXXXX” is the serial number. If this is not the case, make sure the Envision and EAC are turned on with “Bluetooth” lights flashing and try searching again. Click on the checkboxes of each of the devices you would like to use, then press the “Connect” button. The software will show the status as it connects to each device. The “Bluetooth” lights on the Envision and EAC will glow steadily if they have connected successfully.

Charging the Envision Auto Calibrator

The EAC will turn off when the battery state of charge falls to 0%. Plug the included USB charger into a (100 to 240VAC) wall outlet and plug the other end of the cable into the “Charging” port on the EAC. The “Battery” lights should zip up and down to indicate the battery current state of charge. If there is a single flashing light, the battery has less than 10% charge. When charging is complete, the “Battery” lights will turn off. The EAC battery will charge in about 4 hours and last for approximately 40 hours of actual calibration “on” time.

Auto Shut Off

The EAC includes an “Auto Shutoff” feature. If left on for more than 15 minutes with no button presses or communication with the Elkins Gas Analyzer software,

Running an Auto Calibration Routine

The Auto Calibrator will perform the following tests:

1. Calibrate CO₂/CH₄ and O₂ sensors
2. Calibrate Pressure Sensors
3. Check for leaks in the sample train and rear filter (optional)
4. Provide both on screen and calibration file reports that detail the results

To run an Auto Calibration routine, follow the steps below:

1. Connect Envision and Envision Autocalibrator as outlined above
2. Click the “Main Menu” Button
3. Click the “Calibrate” button
4. In the calibration type popup window select “Auto”
5. Enter the calibration gas concentrations for CO₂/CH₄ and O₂
6. Enter the calibration gas cylinder numbers
7. Enter the thermistor Serial Number if not using a Bluetooth temperature probe
8. Check or uncheck the box for using ambient air for O₂ span (If this box checked, the O₂ span bottle will still be used to zero CH₄ and CO₂)
9. Click “Start Calibration”
10. If any calibration steps fail, a dialog box will appear with options to select “Abort”, “Retry” or “Ignore”. “Abort” will stop the test and take you back to the first auto calibration screen. “Retry” will try to re-run the test. “Ignore” will log the test as having failed and move to the next test.
11. After the calibration completes, the software will display a calibration report. If any steps failed, they will be highlighted in red.
12. Click “Store” to save the results in calibration file which may be found in the Elkins Earthworks/Calibration directory.

Note: Any tests that fail will give an option to restore factory calibration and retest. If the Autocalibration Routine fails again (after a factory calibration restore), it could indicate an issue with the Envision. See the troubleshooting table below for common issues. If the problem persists, please contact Elkins Earthworks at (330) 725-7766 for technical assistance.

