

**ATLS Analyzer Simrad GD10P – Ambient**

**PURPOSE:**

The purpose of this Analyzer Maintenance Guideline (AMG) is to document the Maintenance and Calibration procedures for Simrad GD10P Infrared Gas Detector

**SCOPE:**

This guideline applies to Simrad GD10P Infrared Gas Detector. This guideline also applies to all analyzer technicians that perform maintenance and assure the reliability and excellent performance of these online analyzers.

**RESPONSIBILITY:**

The supervisors and technicians are responsible to ensure work will be performed according to this guideline using safe work practices and procedures described in the safety and environmental policies. Questions or concerns relating to safety or equipment repairs/guidelines will be reviewed with the immediate supervisor.

Analyzers Chemist is responsible for reviewing and revising this guideline.

The Analyzer Technical team leader is responsible for approving this guideline.

**METHOD:**

The Simrad GD10P should never require a calibration adjustment. The unit should stay in calibration plus or minus 5% of scale over the instrument lifespan. If the instrument moves outside this accuracy level, or if regulations require an exact zero, the Hand Held Zeroing Mechanism will make a zero adjustment. See Common Troubleshooting Steps below.

**Calibration:**

Since no adjust is normally required, this procedure will actually be a Calibration Test. The following calibration test is only applicable if it is required by regulation, or in cases where you need to verify system performance during commissioning or similar thorough testing.

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Reviewer	Date	Approver	Date
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## Calibration Cont.

Remove the Weather Protection Cap (Part # 499-810913.4) and inspect the optical surfaces and clean if necessary. Replace the cap with the Sample Flow Housing (Part # 499-810874). Use a **certified cylinder of gas at approximately 50% of the full scale range of the sensor**. Use the same gas that the detector has been calibrated for at a **flow rate of 1 liter/minute** or lower. Most detectors in the plant are calibrated 0-100% LEL Methane. Check the upper right box of the Stainless Steel Plate on the side of the detector. For methane it should read “ 100% LEL CH<sub>4</sub>”. In this case you will use a cylinder of 50% LEL methane (2.5% by volume). A number of detector are calibrated 0-100% LEL Butane. For these detectors the plate will read “ 100% LEL C<sub>4</sub>H<sub>10</sub>”. In this case you will use a cylinder of 50% LEL butane (0.95% by volume).

Wait about 1 ½ to 2 minutes. Read sensor output at the gas detection system. 50% LEL gas should give a 12 mA. output which should translate to 50% of full scale at the control room where the value is displayed. If the value is not within +/-5% proceed to the Common Troubleshooting Steps.

## Routine Maintenance

Remove the weather protection cap and inspect the optical surfaces. Clean if necessary with a dry cloth. For difficult contaminants use a mixture of equal parts water and isopropyl alcohol. Return the Weather Protection Cap. Since the Weather Protection Cap was designed to facilitate gas flow-through, it is difficult to fill the gas measurement path completely with test gas, especially in windy weather, therefore this will be a Function Test only.

Apply a certified cylinder of gas at 50% of full scale at 1 to 4 liter/min to the test nozzle on the front of the unit. Use the same cleaning towel to keep the gas somewhat contained. Your reading should be approximately 25% to 35% of full scale where the value is displayed. This verifies the unit is functioning properly.

## Data Reporting, Storage and Retrieval

Not Applicable

## Common Troubleshooting Steps

If the Calibration Test has been performed and the detector is reading above zero, you can use the Hand Held Zeroing Mechanism to re-zero the unit. Note: A Hot Work Permit may be required to perform this procedure. Check with the Unit Supervisor before proceeding.

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Remove power from the unit. Remove the Termination Cap. Using the number wires on the Hand Held Zeroing Mechanism connect wire 1 to terminal 1, wire 2 to terminal 2, wire 4 to terminal 4, and wire 5 to terminal 5, leaving existing field wires in place. Restore power to the unit. Hit the enter key on the Hand Held Zeroing Mechanism and it will display a menu option to reset the zero. Follow the instructions on the Hand Held Zeroing Mechanism screen to complete the re-zero procedure. No Span adjustment is required.

### **Analyzer Warning and Analyzer Fault**

The internal microprocessor performs continuous self-testing of optical and electronic functions. If a fatal error occurs, the processor will generate a 0 mA. output signal. If the IR energy in the optical path is reduced to 50% - 70% of its original value, the output signal will go down to 1mA. for 3 seconds at 5 minute intervals. If the energy is reduced below 70% the detector will generate a 1 mA. output and will no longer detect gas. Once the IR energy returns to normal, usually by cleaning the optical surfaces, the unit will automatically return to functioning normally.

### **Documentation:**

Documentation that the tasks listed above were performed must be logged into the maintenance database per set frequency. This date, time, any readings noted, deviations, brief statement of the situation or problem, action taken, length of time analyzer out of service, etc.

### **DISTRIBUTION:**

ATLS Analyzer personnel

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