

Sulfuryl Fluoride Monitor

CONTROLS, ACCESSORIES, OPERATION
& MAINTENANCE

Introduction

- **The Interscan GF1900 Sulfuryl Fluoride gas fumigant analyzer is expressly designed for use as a clearance monitoring device to determine safe re-occupation of a structure after aeration only. Use of this device for any purposes other than use as a clearance device will invalidate the warranty.**
- The furnace is a key and essential component of the GF1900. Due to extreme heat , the furnace has a limited life. **Mean Time Before Failure (MTBF)** is one thousand (1000) hours. This is the average lifetime of accumulated runtime hours before the furnace will fail due to the extreme operating heat.
- ***Note: The furnace life is further dependent on the exposure duration and level of the the Sulfuryl Fluoride (SO₂F₂) gas.***
- **Exposure to levels in excess of 50 ppm of Sulfuryl Fluoride (SO₂F₂) gas can lead to greatly reduced life or instantaneous failure of the furnace.**
- The Sulfuryl Fluoride (SO₂F₂) gas is passed to the Interscan Sulfur Dioxide sensor for conversion to an electrical current in direct proportion to the gas level. This signal is then processed by the circuitry for display on the meter in engineering units of **parts per million (ppm)**.

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Controls, Displays, & Indicators



- 1] READY L.E.D. - illuminates when furnace reaches proper preset operating temperature.

Controls, Displays, & Indicators



- 2] LO BAT. – illuminates when battery pack or AC power supply is at or below 19.0 V DC.

Controls, Displays, & Indicators



- 3] Meter – Analog display of engineering units, parts per million (ppm).

Controls, Displays, & Indicators



- 4] ZERO – sets the zero on the meter at beginning of analysis to compensate for sensor background current.

Controls, Displays, & Indicators



- 5] CAL
 - Sets meter to read correct engineering units when exposed to calibration gas of certified value.

Controls, Displays, & Indicators



- 6] ON L.E.D. – illuminates when power is turned on by function switch.

Controls, Displays, & Indicators



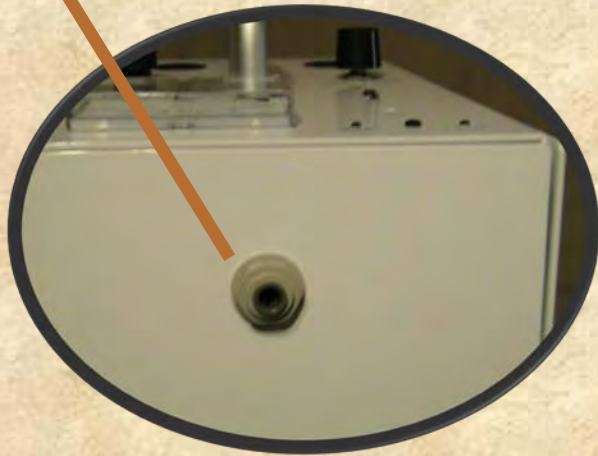
- 7] FUNCTION SWITCH – selects operation and meter display:
- ON – analyzer is powered and meter displays engineering units,
- BAT. TEST - analyzer is powered and meter displays battery pack level.
- ***Note: Meter level must be at or above LO BAT mark for proper function.***

Controls, Displays, & Indicators



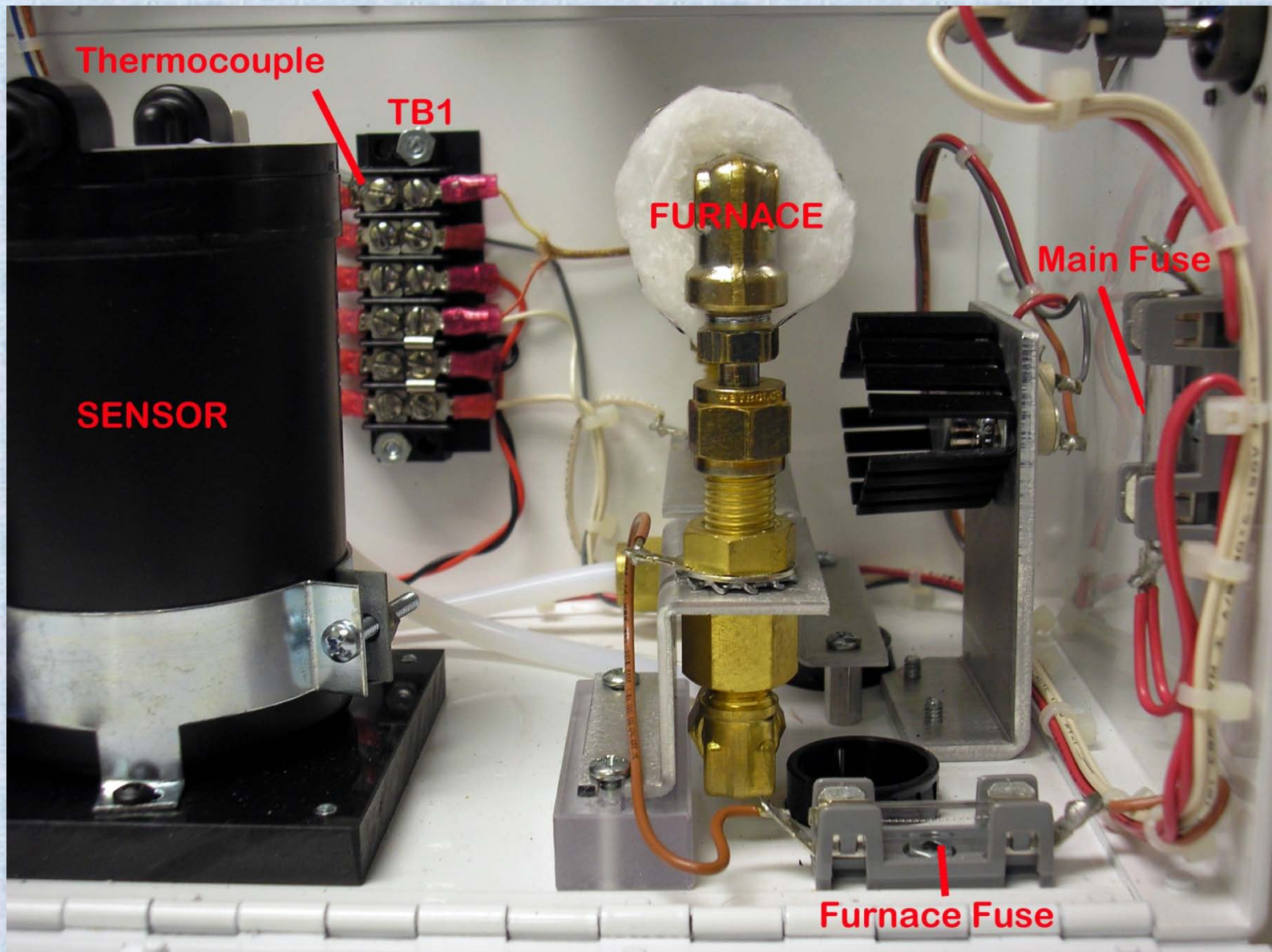
- 8] POWER CONNECTOR – input connector for Battery Pack or AC power supply.

Controls, Displays, & Indicators

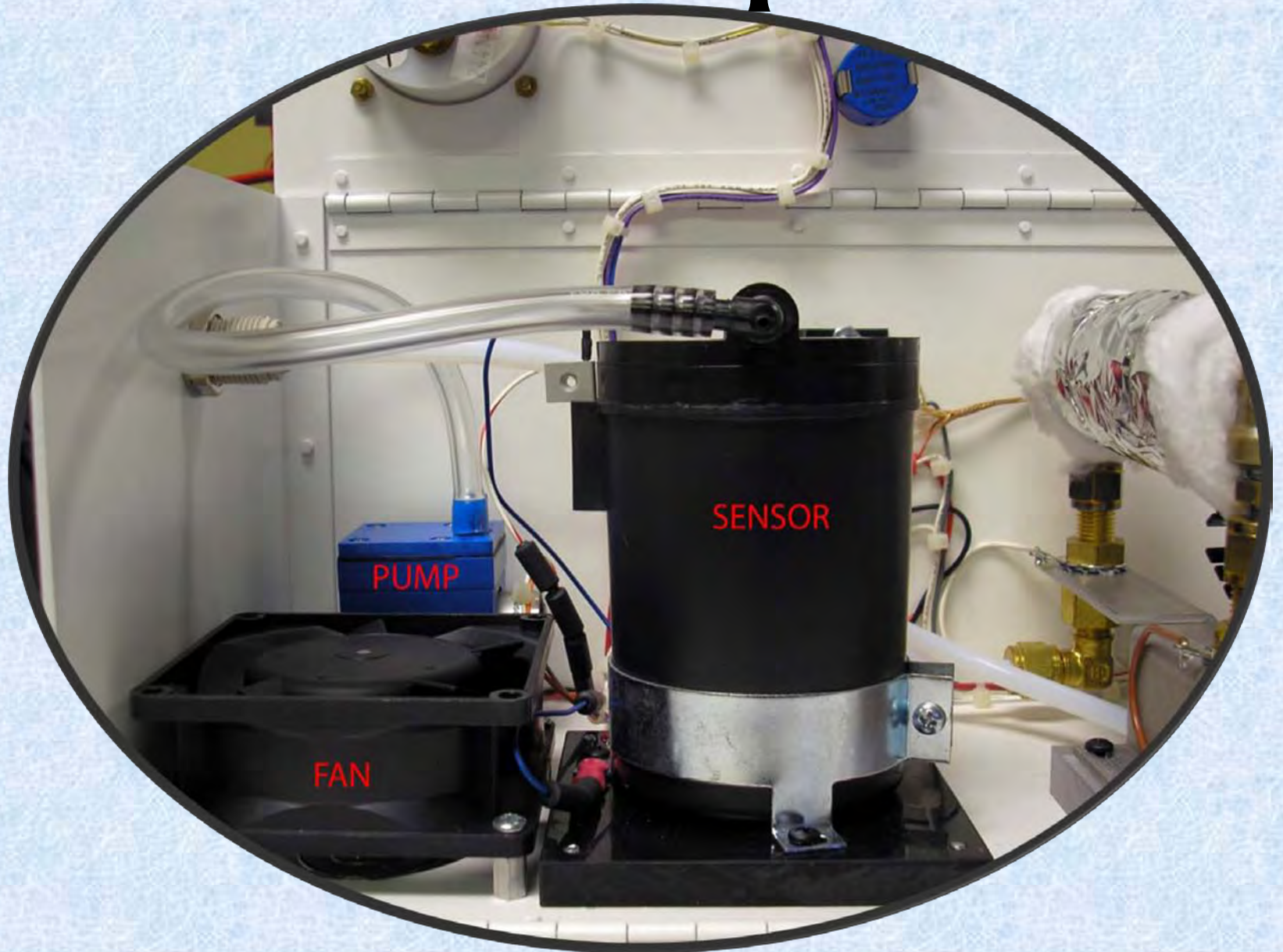


- 9] Gas sample inlet PORT. Tubing is pushed into port until seated and then **gently** pulling back. The pulling back action is performed to properly seal the connection. Teflon tubing $\frac{1}{4}$ O.D. x $\frac{1}{8}$ I.D. is recommended for use. Length should not exceed twelve (12) inches when used with factory calibration. Lengths of twelve (12) to forty-eight (48) inches can be used only if calibrated with chosen length attached during process.
- ***NOTE: Lengths longer than twelve (12) inches can increase response time.***

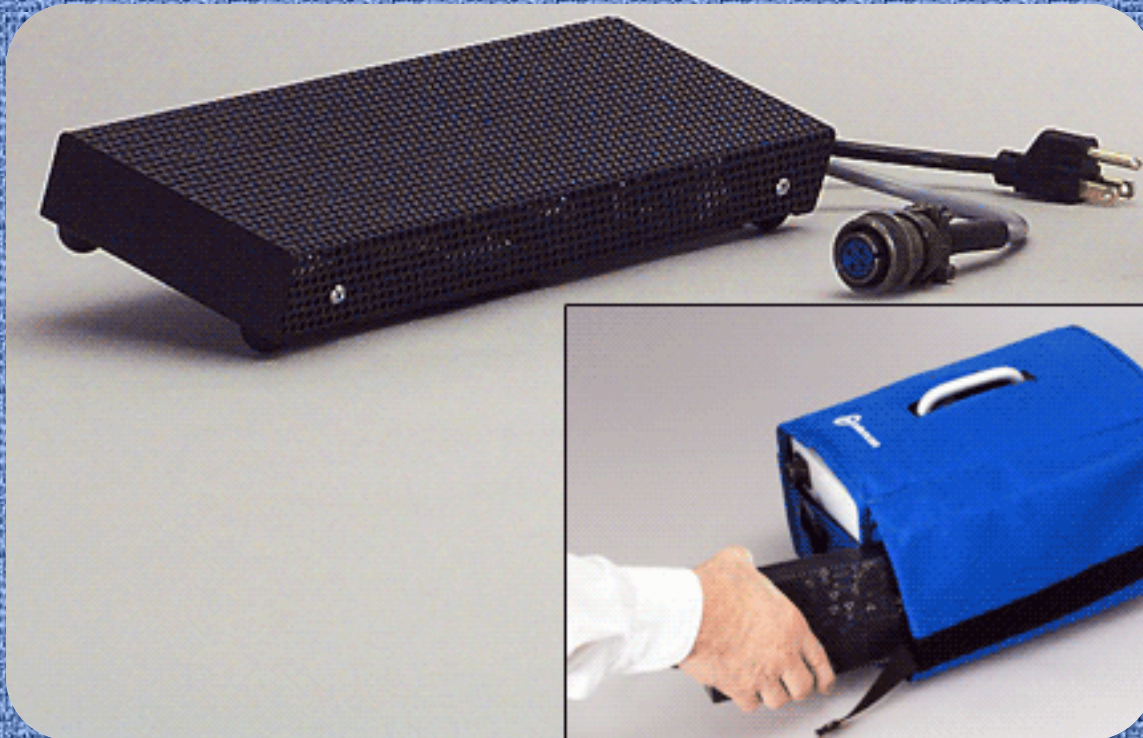
Internal Components



Internal Components



Accessories



**AC Power supply,
switching, 24V @ 5.2
ADC, Power: 124.8
Watts, Input Voltage:
85~132 /
170~264VAC, auto
selectable.**

***Note the carrying
case is a separate
accessory and is
displayed merely to
indicate location.***

Accessories



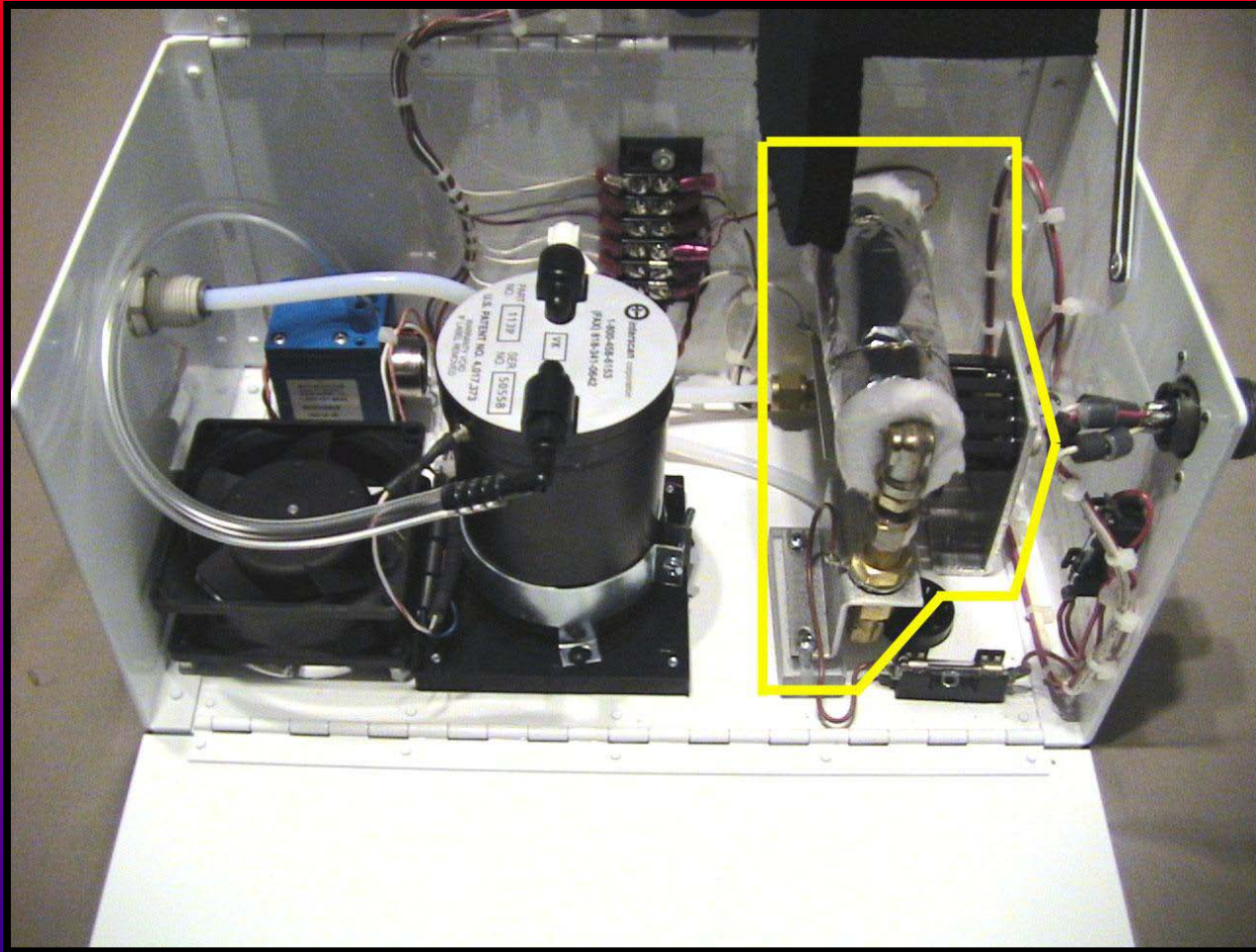
24 VDC Battery Pack (DC Power Supply) - two 12 VDC, 7 AHr gel cell batteries wired in series. Provides approximate run time of 70 minutes decreasing with aging.

Accessories



**Battery Pack Charger,
115/220 VAC switch
selectable input,
1000ma@ 24 VDC
output.**

CAUTIONS



1) Items inside yellow boundary can cause injury. **Do not** attempt to service until instrument has cooled for one (1) hour.

CAUTIONS



- 2] **DO NOT** attempt to use in areas where gasoline, sulfur compounds, or highly flammable vapors are present. The presence of any of these could produce an **EXPLOSION**.

- 3] Areas which operate mobile phones, CB's, etc., may cause electronic interference. This is evidenced by random or erratic meter deflection.

Operation

- 1) Turn the **FUNCTION SWITCH** knob to the **OFF** position and connect an AC power supply or battery pack. Tighten the connector completely.
- ***NOTE: Turn only the knurled ring to tighten. Tightening the connection by turning any other portion of cable can result in a short, fire, or explosion.***

Operation

- 1) Turn the **FUNCTION SWITCH** knob to the **OFF** position and connect an AC power supply or battery pack. Tighten the connector completely.
- ***NOTE: Turn only the knurled ring to tighten. Tightening the connection by turning any other portion of cable can result in a short, fire, or explosion.***
- 2) Turn the **FUNCTION SWITCH** to **ON** or **BAT TEST** and wait for the **READY** indicator to light. (at or below 19.0 V DC)

Operation

- 3) After the READY light is ON, set the meter to ZERO with the **ZERO** knob.
- **NOTE:** *New or replacement sensors may require approximately 24 hours to stabilize prior to zeroing. For best results (to prevent zero drift) the **first** time the monitor is used during the day, set the meter to 20 after the READY light is ON. If the meter is moving up or down, wait until it stops. Then adjust the meter to ZERO. An alternative is to turn the unit ON in the shop, first thing in the morning for 20 or 30 minutes. When employing this alternative, please disconnect furnace fuse first. **REMEMBER TO RECONNECT FUSE** before resuming operation. In this case, no meter adjustment is necessary.*

Operation

- 4) The unit is now ready for use.
- 5) When using the battery pack, the **LO BAT.** indicator will light when there is approximately 10 minutes operating time left. After the light is ON, turn the control knob to **BAT. TEST** to see if the meter is ON, or to the left of the BAT line. If the meter is to the right of the line, turn back to ON for continued gas readings. Check the battery condition every few minutes. When the meter shows **LO BAT** you must turn the control knob to OFF.

Operation

- 6) Recharge batteries overnight. Approximately eight (8) to ten (10) hours.

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- 6) Recharge batteries overnight. Approximately eight (8) to ten (10) hours.
- 7) Approximately 70 minutes operating time is available with a fully-charged battery pack.
- **NOTE:** Disregard a LO BAT indication when using an AC power source.

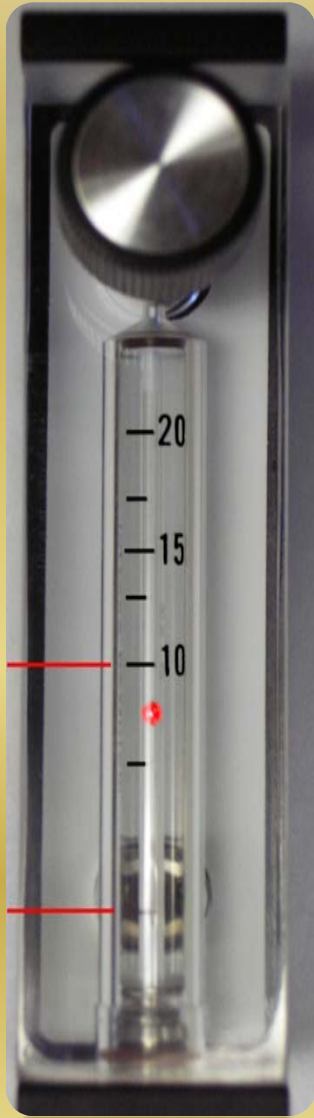


Checkout & Calibration

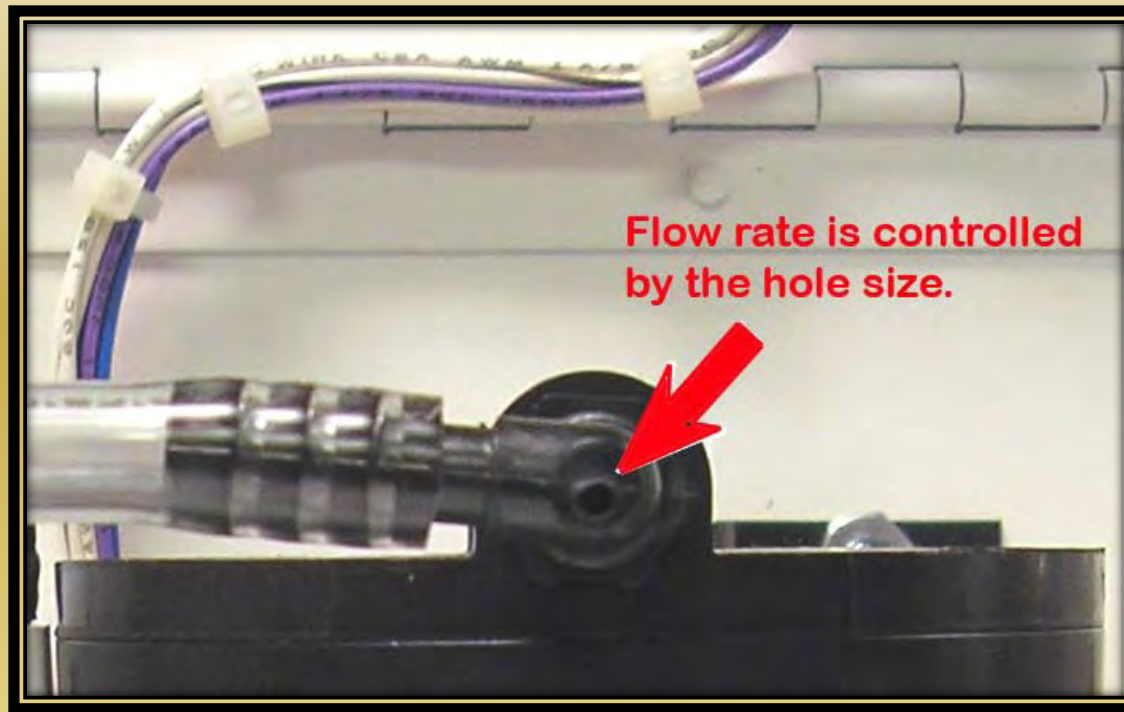




- Connect the top fitting of a rotameter style flowmeter model to the gas sample inlet PORT.



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- Locate the center of the float ball to determine the flow rate.



- The flow rate is controlled by the hole size in the Thogus fitting.
- Increased size produces a lower flow rate.

Calibration

**Interscan recommends
calibration every 30 days.**

- The instrument is calibrated by introducing a certified 5 ppm concentration of Sulfuryl Fluoride gas, and adjusting the CAL potentiometer screw to correspond to the known analysis level (ppm) of the gas.
- The simplest method is to use a sample bag.

- A factor to consider in using the sample bag method is that all materials are permeable.
- Over time gas from the bag passes to the outside and air outside passes in and mixes with the sample.
- This invalidates the sample due to the change in level (ppm).
- Most manufacturers recommend not using a sample if the gas has been in the bag longer than 30 to 60 minutes.

- Interscan recommends using a 2 liter Tedlar[®] sample bag with ¼ inch O.D. tubing connection made of Polypropylene or Teflon.
- Tedlar[®] is least reactive with low level gases.
- **Caution:** When using sample bags with on/off valves, make sure that valve is in a fully open position during calibration. (A partially open valve can invalidate the calibration, resulting in erroneous readings.)

Introducing the 5 ppm standard

- Fill a 2 liter Tedlar[®] sample bag with the Sulfuryl Fluoride 5 ppm standard and plug.
- ***Note: Fill half full and squeeze out the gas if the bag has not been used for longer than 60 minutes. Then refill and plug.***

- Zero the analyzer with the **ZERO** control after it is turned on, sufficiently warmed, and the **READY** light illuminated.

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- Attach the 2 liter Tedlar[®] sample bag with Sulfuryl Fluoride standard to the inlet PORT, allowing the gas to flow for at least 3 minutes.

- Zero the analyzer with the **ZERO** control after it is turned on, sufficiently warmed, and the **READY** light illuminated.
- Attach the 2 liter Tedlar[®] sample bag with Sulfuryl Fluoride standard to the inlet PORT, allowing the gas to flow for at least 3 minutes.
- Adjust the CAL potentiometer screw to correspond to the known analysis level (ppm) of the gas.
- **NOTE:** 3 minutes is required for calibration efficacy, but field readings do not require waiting 3 minutes. Discerning the 1 ppm clearance level can be accomplished within a much shorter time.

- Zero the analyzer with the **ZERO** control after it is turned on, sufficiently warmed, and the **READY** light illuminated.
- Attach the 2 liter Tedlar[®] sample bag with Sulfuryl Fluoride standard to the inlet PORT, allowing the gas to flow for at least 3 minutes.
- Adjust the CAL potentiometer screw to correspond to the known analysis level (ppm) of the gas.
- Remove the 2 liter Tedlar[®] sample bag and plug.

- Remove plug from the 2 liter Tedlar[®] sample bag, empty and plug.
- Disconnect DVM.
- The Sulfuryl Fluoride monitor has now been calibrated.



interscan corporation

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or

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