

Standard Operating Procedure (SOP) to Operate the Portable Refrigerant Alarm Monitor

SOP to Operate the Portable Refrigerant Alarm Monitor	
1. Purpose	<ul style="list-style-type: none"> For use for entry into a designated area requiring the use of a portable refrigerant alarm monitor. Designated work areas are either listed in the FS Safety Manual and/or are identified by a sign posted on the door
2. Equipment	The appropriate monitor to use is the Bacharach PGM-IR, not a 4-gas meter or “wand”. A Bacharach PGM-IR may be located in your shop.
3. Personal Protective Equipment (PPE)	No specific PPE is required to operate the monitor; however, the space being entered may require PPE for the work task being performed or other site conditions.
4. Training and Administrative Controls	<ul style="list-style-type: none"> A minimum of one entrant <u>must</u> have completed the Refrigerant Monitoring Training class. This written SOP should be reviewed periodically during a shop meeting, and attendance documented via the shop meeting sign-in sheet. A copy of this SOP is kept in each portable monitor case for field use and in the FS Safety Manual.
5. Equipment set up <u>outside</u> of the designated area	<ul style="list-style-type: none"> Refer to <u>operator manual</u> for any questions Confirm the monitor has been calibrated within the past 12 months. (Label is located on equipment). Do not use if the equipment’s calibration is >12 months. Verify the battery is charged prior to usage. Do not use it if the battery is not charged. Outside the designated area that requires a portable refrigerant monitor: <ul style="list-style-type: none"> Connect the battery pack to the monitor’s ‘Output III’ port. Power-on the monitor (green button) and allow it to warm-up and purge. (This may take 5 or more minutes). There are five Function Menus: <div style="display: flex; justify-content: space-around; margin: 10px 0;"> <div style="border: 1px solid black; padding: 2px; font-family: monospace; font-size: 0.8em;"> >PPM LOG FAULTS ALARMS DIAGNOS </div> <div style="border: 1px solid black; padding: 2px; font-family: monospace; font-size: 0.8em;"> >GASTYPE SPILLVL LEAKLVL EVACLVL </div> <div style="border: 1px solid black; padding: 2px; font-family: monospace; font-size: 0.8em;"> >LOG INT AUDALRM LOOP CLOCK </div> </div> <div style="display: flex; justify-content: space-around; margin: 10px 0;"> <div style="border: 1px solid black; padding: 2px; font-family: monospace; font-size: 0.8em;"> >SILENCE ZONETEMP </div> <div style="border: 1px solid black; padding: 2px; font-family: monospace; font-size: 0.8em;"> >P-CHK ALM ACK </div> </div> Use the arrow keys to display ‘GASTYPE’ Function Menu: <div style="border: 1px solid black; padding: 2px; font-family: monospace; font-size: 0.8em; margin: 10px 0;"> >GASTYPE SPILLVL LEAKLVL EVACLVL </div> Use arrows to move the cursor to ‘GASTYPE’ (gas type). Press the ‘ENTER’ key to select gas type. Use up/down arrows to select the room refrigerant type. Press ‘ENTER’ to select it.

	<ul style="list-style-type: none"> Use arrows to move the cursor to 'EVACLVL' (evacuation level). Press the 'ENTER' key to select it. Use up/down arrows on each digit to enter the PEL value. PEL values for each refrigerant type is below. Press 'ENTER' to save the value. <table border="1" data-bbox="799 268 1169 506"> <thead> <tr> <th>Refrigerant Type</th> <th>PEL (PPM)</th> </tr> </thead> <tbody> <tr> <td>R-22</td> <td>1000</td> </tr> <tr> <td>R134A</td> <td>1000</td> </tr> <tr> <td>R404A</td> <td>1000</td> </tr> <tr> <td>R410A</td> <td>1000</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Use the arrow keys to display this Function Menu: <div data-bbox="711 611 901 663" style="border: 1px solid black; padding: 2px; margin: 5px 0;"> <pre>>LOG INT AUDALRM LOOP CLOCK</pre> </div> Use arrows to move the cursor to 'AUDALRM' (audible alarm). Press the 'ENTER' key to select it. Use up/down arrows to select Evac Alarm. Press "ENTER" to select it. Press the 'ESC' to save values. The portable refrigerant alarm monitor is ready. 	Refrigerant Type	PEL (PPM)	R-22	1000	R134A	1000	R404A	1000	R410A	1000
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<p>6. Safe operating procedures and entry precautions when <u>no</u> alarm sounds</p>	<p>IF AT ANYTIME THE ALARM SOUNDS, PROCEED TO STEP 7.</p> <ul style="list-style-type: none"> Before entering the door posted with the 'Restricted Area' refrigerant sign, insert the probe through the door's undercut and take a reading. If the ppm is below the PEL and no alarm sounds, open the door and proceed. Enter room. Check low-lying areas* in mechanical room and continue to monitor while proceeding to your work area. <ul style="list-style-type: none"> *Do not enter permit required confined spaces to monitor for refrigerant gas. Place the monitor close to the work area and periodically check readings, particularly if the space is noisy. Complete work. Exit the space and close the door. Turn off the monitor by pressing the green button. Disconnect the battery pack. Charge the battery if it is low. Clean monitor if necessary and properly store in clean/dry location. 										
<p>7. Safe operating procedures and entry precautions when an <u>alarm sounds</u></p>	<ul style="list-style-type: none"> If an alarm sounds, stop, and exit the room/space immediately. Call 911. Report the incident as a hazardous condition – refrigerant leak. Call your supervisor. Wait outside at the building's entrance to provide incident details to Fire Department or FOMS. 										