**Alarms & Interlocks**

**Single Line Diagram**

**Alarm 1**
- High refrigerant or VENT switch pull.
- Turn ON Exhaust Fan, Horn/Strobe,
- Interlock supply air SF or dampers into MR
- Silence horn & reset Alarm 1 from MSA panel

**Alarm 2**
- Very High refrigerant or EPO switch pull.
- Disable Chiller, turn off pumps, close refrigerant valves, alarm to FACP (24 hour monitored location).
- Alarm 1 remains active.
- Silence horn & reset Alarm 2 from DDC Panel
  - Menu item or added switch

**Alarms to Facilities Group**
- Alarm 1, Alarm 2, Vent or EPO switch pull.
- MSA Trouble.
- MSA Calibration reminder

**Typical Setpoints**
- See 2016 CMC, Paragraph 1106.4 & 1108.3, Table 1102.2.
  - R134a: Alarm 1 = 500 PPM
  - R123: Alarm 1 = 50 PPM
  - R513a: Alarm 1 = 570 PPM
  - R514a: Alarm 1 = 320 PPM
  - ALL: Alarm 2 = 1,000 PPM
- Contact Bayside with Refrigerant # for other setpoints.

**Description**

<table>
<thead>
<tr>
<th>Description</th>
<th>DI</th>
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<tbody>
<tr>
<td>Refrigerant Monitor</td>
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<tr>
<td>MSA Alarm Input</td>
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<tr>
<td>MSA Horn Relay</td>
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<tr>
<td>MSA Trouble</td>
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<tr>
<td>Exhaust Fan (points / fan or speed)</td>
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<tr>
<td>Fan Start/Stop</td>
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<tr>
<td>Fan Status (from panel)</td>
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<td>Break Glass Switches</td>
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<tr>
<td>Emergency Ventilation</td>
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<td>Emergency Power Off</td>
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<tr>
<td>Notification Appliances</td>
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<tr>
<td>Horn Circuit (24 VDC)</td>
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<tr>
<td>Strobe Circuit (24 VDC)</td>
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</tbody>
</table>

**Total Hardware Points**

7            3

Plus equipment interlocks in software

**Points List**
**Sensing line notes**

- ¼" OD tubing from MSA panel to sensing points.
- 1/chiller or any low points (sumps)
- For best performance limit run to 400', max 1,200'.
- Terminate in a 4 square box (double gang or similar)
- 6-12" AFF with bottom ½" KO removed.
- Cap line with filter, MSA P/N 711561.
- Filter inlet protrudes from 4 square box to sample free air.
- Install so access for filter change is convenient.
- Installation materials (tubing, JB, etc.) by others.

**Typical Sensing Line Termination**