



Critical Environment Technologies

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ENGINEERING SPECIFICATION SAMPLE MAC - AST-IRT

Infrared Refrigerant Leak Detection System

Supply a single channel, gas detection system controller, **model MAC-B-ANJ**, for the monitoring of refrigerants, housed in a rugged, wall mount, drip-proof PVC enclosure with hinged, secured door. System power shall be 120VAC (nominal). The system shall have one remote analog transmitter **model AST-IRT** refrigerant gas specific sensor, for the detection of refrigerant gas. The measurement range shall be 0 - 1000 ppm refrigerant in air. Area of monitoring coverage is 3,000 to 5,000 square feet per sensor.

The monitor shall provide 24VDC regulated power to the remote transmitter, a tri-colour indicating light for power, low alarm, high alarm, and fault condition, audible alarm with silence push-button, internal "open loop" visual indicator, two S.P.D.T. dry contact alarm relays rated 5 amps at 240 VAC each, an LED digital display of Freon ppm concentration and a 4-20 mA analog output signal. The system must be accurate enough to measure to government workplace hazardous gas exposure standards. The system shall also provide user adjustable time delays for "delays on make" and "delays on break" to allow custom configuration of fan control by the system relays, if desired.

The controller shall provide a circuit test button to allow the user to confirm system operation and exhaust fan control from the panel. The controller shall also provide a push-button to allow the user to override the system control and operate exhaust fans continuously for 15-minute segments to evacuate air from the compressor room. The MAC controller shall be installed on the wall outside of the chiller room at 4' to 6' from the floor. The sensor/transmitter for Freon gases shall be mounted inside the compressor room at 6" from the floor in an area near the refrigerant piping or in a higher area with the most potential for a refrigerant leak.

System operation shall be as follows: System relays are normally energized in non-gas-alarm state so they act in fail-safe operation. Upon detection of 100 ppm Freon in air, the system shall illuminate the Low alarm LED and any relays programmed to respond to low gas alarm shall de-energize activating single-speed exhaust fans or low speed of two-speed exhaust fans plus make up air fans. Upon detection of 500 ppm Freon in air, the system shall illuminate the High alarm LED, the system audible alarm will be activated and any relays programmed to respond to high gas alarm shall de-energize activating high speed of two-speed exhaust fans or remote alarm devices. Audible alarm can be silenced from the front panel push button. In the event of a fail condition, the system audible alarm shall be activated and the fail LED on the front panel shall flash red.

The contractor shall provide all wiring, conduit and interconnection required for a successful installation.

Approved manufacturer:

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