BLAST CHILLER / FREEZER CONTROL SYSTEM

GENESIS INTERNATIONAL, INC.

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PURPOSE

The Blast Chiller / Freezer Control is an ETL tested control designed for improved operation of the chiller system and maintaining a stable cooling temperature inside the cooling room. The system is distinguished by the simplicity of their front panels, which offer minimum yet versatile keys and functions. It can control up to two evaporators if selected.

OPERATING CAPACITY

Two defrost relay outputs.
Two fan control relay outputs
Two liquid solenoid relay outputs
2 System alarm relays One Relay is silence-able and one is non silence-able.
Refrigerant leak alarm relays (Optional) 2 relays per alarm level. One Relay is silence-able and one is non silence-able.

BLAST CHILLER CONTROL

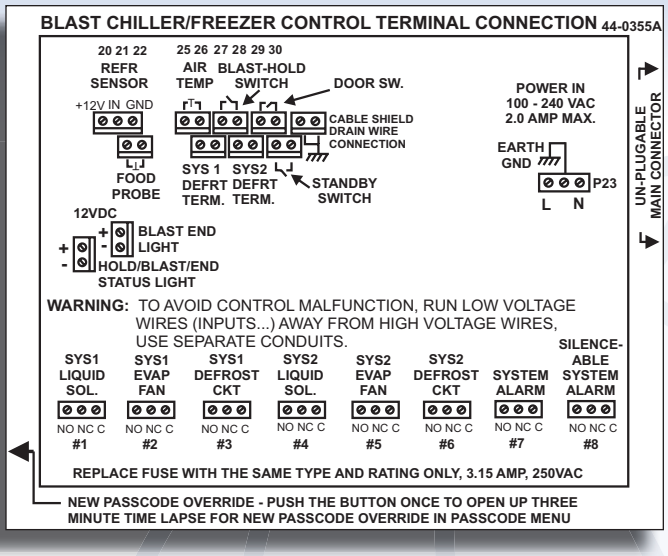
The Blast Chiller / Freezer Control has four modes of operation. They are Standby, Hold, Blast and Blast End.

Standby Mode - When the standby switch is closed, the control will enter into standby. In standby mode the the control will maintain the room temperature at the standby setpoint. The defrost is disabled and the fan(s) will remain off when the temperature is satisfied. The staus light is off.

Hold Mode - When the mode switch is set to HOLD, the room temperature is maintained at the air hold temperature setpoint. The staus light is off. Room Temperature High/Low alarm is monitored. Defrost is activated by time of day.

Blast Mode - When the switch is put into BLAST mode, the status light will turn on and the room temperature will maintain at the blast setpoint. The system will run the minimum of blast run time necessary. This time can be changed in the setting menu.

Blast End Mode - After the minimum blast run time has expired, the food probe temperature will be checked against the probe hold setpoint. If the temperature is still above the probe hold setpoint, the control will continue to run in BLAST mode. When the temperature has been met or is below the probe setpoint, the system will switch into hold mode and the status light will be flashing indicating the end of the blast cycle. The Blast End light or strobe light (User installed option) will be on. This mode is reset when the mode switch is toggled back to HOLD mode.



FIFO (ROUND-ROBIN) OPERATING MODE

This is a special mode for more than one Evaporator system in the same room. The Controller will run two evaporators based on first-in, first-out mode (FIFO). The Controller monitors the room temperature and maintains the room temperature by utilizing the cooling capacity of both evaporators. The evaporator liquid line which was turned on first will be the one to be turned off when cooling capacity requirement is reduced. This rotation scheme equalizes the run time on both evaporators. This mode is activated by menu selection and by shorting the inputs at the MAX. COOLING FIFO input terminals.

DEFROST OPERATION

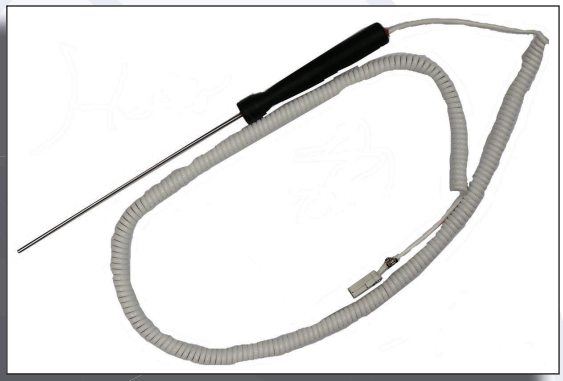
The defrost can be activated by time of day or manually. If you using manual defrost set the number of defrosts per day to zero in the defrost menu. If you are running two evaporators you have the option of going into defrost mode at the same time or offset. There are four cycles within a full defrost: pump down cycle, main defrost cycle, drip cycle, and fan on delay cycle. All the cycle times can be adjusted. The main defrost cycle on each evaporator can be shorten by the closure of the temperature termination input (thermo-disc closed) or by termination temperature probe reaching a preset temperature.

STANDBY / NORMAL SWITCH

This switch is located on the side of the main control and can be used to switch from the normal programmed mode or to a system standby mode.

DOOR OPEN ALARM

User selectable option. When door to the room is opened (Door Alarm Input is closed), the Control will start counting down the door alarm delay time. If the delay time expires and the door is still opened, the Control will enter into door alarm mode; the system alarm relays are turned on, the front panel alarm lights will flash and the buzzer will sound. The alarm can be reset when door is closed or manually. The liquid valve(s) and fan(s) be can also be temporary turned off by the opening of the door.



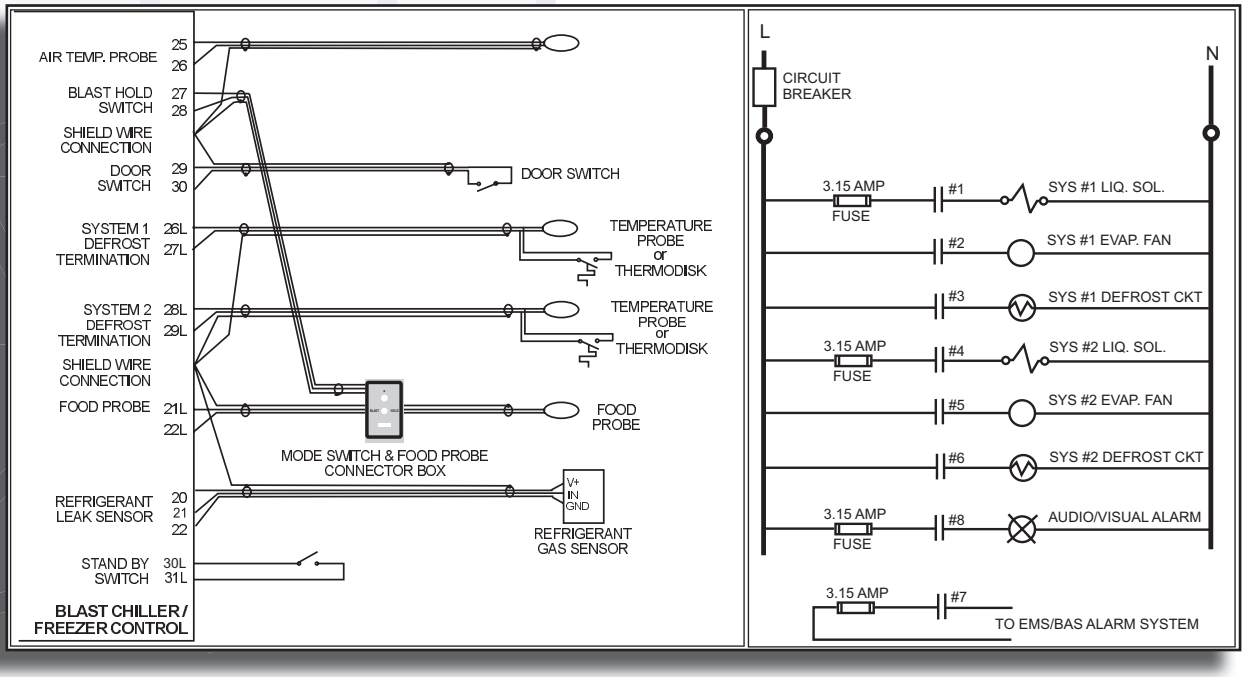
FOOD PROBE WITH COIL CORD - The Temperature Sensor is a high-precision NTC thermister. The sensor probe is a 6 inch long stainless steel thermistor with a 5 second reaction time rating. The coating is highly resistant to most solvents and chemicals. It is connected to a 30 foot coil cord.

MODE SWITCH/FOOD PROBE CONNECTOR - The Mode Switch & Food probe connector is located on a separate remote unit. The box has a remote blast and hold switch and an input for the food probe. The food probe can be mounted on the side holder when not in use.

REFRIGERANT LEAK ALARM

(This option not available on all models)

The Control can be used to monitor refrigerant leaks with the installation of a ***SHERLOCK*** Refrigerant Leak Sensor. There are two alarm levels. Each alarm level has two adjustable alarm relay outputs. One output is silence-able and can be connected to Audiovisual devices for local alarming. The other is non-silence-able and can be connected to EMS, BAS or local ALARM CENTER for remote and service alarming.



INPUT / OUTPUT WIRING CONNECTIONS

The input and output wiring diagram (Above) and the Input /Output control diagram on the previous page (Top) show the main possible total inputs and outputs that are available for the BLAST CHILLER / FREEZER control.

SPECIFICATIONS

Control

Microprocessor based Program logic stored within non-volatile EPROM memory. Set points and system configuration stored within EEPROM with at least 10 years storage life. Logged Data stored on the memory chip with backup power.

Menu driven controls with all operating sequences and control algorithms included. The control has non-volatile program memory and a capacitor backed clock in the event of power outage. All programmable options are installed via a "Yes" or "No" question.

Keypad

Front panel accessible with 5 tactile key switches. Key assignments -- UP, DOWN, SELECT/ENTER, EXIT, ALARM CLEAR.

Display

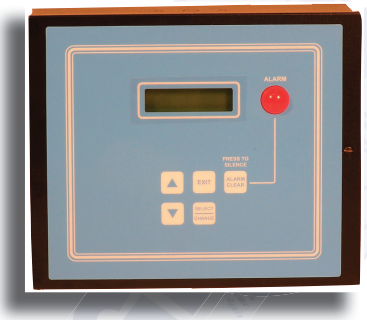
2 x 16 character LCD Back Lit Display. Six control status lights and two alarm lights.

Power

Input -- 100-250 VAC, 50/60 HZ, 0.8 Amp.

Housing

Metal Cabinet, NEMA 1, Enclosure
Option 1 - Metal Cabinet, NEMA 1, Door Mountable
Option 2 - Metal Cabinet, NEMA 4X, Enclosure



INPUTS

Door Open Alarm Input
Temperature Sensors -- 2-wire thermistor, -40 - 150°F
Blast Hold Switch
Food Probe Temperature Sensor, 0 to 150 °F
Hold / Blast / Done Status
Refrigerant Sensor -- 3-wire input 2 Defrost Termination
Clicks-on input or thermistor input
All inputs use un-pluggable screw terminals

OUTPUTS

Control and Alarm Relays

These Relay Outputs are 1 Form C SPDT rated for 250 VAC and 3.15 Amp per circuit. Each relay circuit is fused with a 3.15 Amp slow blow fuse on the common leg. Outputs are screw terminal type.

Fan and Defrost Relays

Standard Model -- These Relay Outputs are 1 Form C SPDT rated for 250 VAC and 3.15 Amp per circuit. Each relay circuit is fused with a 3.15 Amp slow blow fuse on the common leg. Outputs are screw terminal type.

Refrigerant Leak Sensor Model-- These Relay Outputs are 1 Form C SPDT rated for 250 VAC and 3.15 Amp per circuit. Each relay circuit is fused with a 3.15 Amp slow blow fuse on the common leg. Outputs are screw terminal type.

LISTINGS ETL, Conforms to UL Std. 3111-1
Certified to CAN/CSA C22.2 Std. No. 1010.1

ENCLOSURE OPTIONS

NEMA 1 Compliant Enclosure - This enclosure is intended for indoor use only primarily to provide a degree of protection against contact with the enclosed equipment. The enclosure is not designed to provide protection from water or to be placed in a hazardous environment. Mount only in Pollution Level 2 environments, i.e.. Environmentally controlled offices, control rooms, or environmentally controlled machine rooms.

DIMENSIONS Inches (mm)	7.25 x 8.0 x 3.2 (184 x 203 x 76)

NEMA 4X Enclosure (IP67) - This enclosure is intended for either indoor or outdoor use, 0 to 50 °C, to provide a degree of protection against corrosion, windblown dust and rain, splashing water, and hose directed water.

DIMENSIONS Inches (mm)	12.3 x 15.0 x 8.2 (305 x 356 x 178)

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