LEAD/LAG COOLER CONTROL SYSTEM (WLL)

INTERTEK ETL LISTED

GENESIS INTERNATIONAL, INC

LEAD/LAG COOLER CONTROL SYSTEM (WLL)

PURPOSE

The Lead-Lag Control is a hard wired, permanently mounted electronic control panel that is designed for improving operation of the refrigeration system and maintaining a stable cooling temperature inside the cooling room. This Control has the simplicity of its front panel, which offers minimum yet versatile keys and functions.

OPERATING CAPACITY

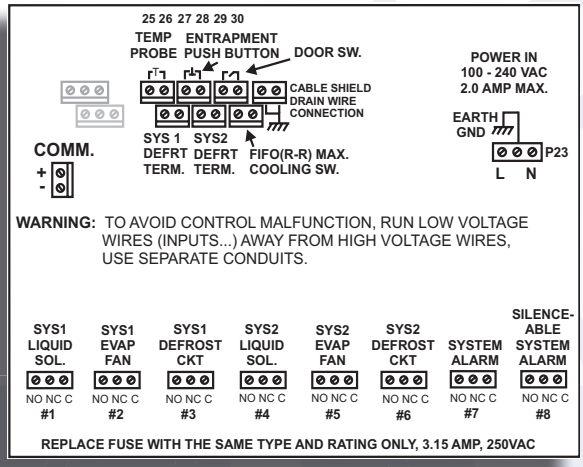
- Single temperature probe input.
- One entrapment alarm push button input
- One door switch input
- One refrigerant Leak Sensor input
- Two defrost relay outputs (30 Amp Option)
- Two fan control relay outputs (30 Amp Option)
- Two liquid solenoid relay outputs
- Two levels of refrigerant leak alarm relay outputs, 2 relays per alarm level. One Relay for each level is silenceable and one is non silenceable.

LEAD-LAG OPERATING MODE

The Lead-Lag system has two evaporators in the same cooling room. One system is operated as the primary system while the other system is idle as the secondary system. The Control will maintain the room temperature utilizing the cooling capacity of the master system. The Control will automatically switch from the master system to the slave system to maintain equal run time on both systems. The Fans on both systems are turned on while in cooling mode. The Control will alternate based upon three different situations. The systems will alternate if the temperature within the room has been met. When this occurs, the previously secondary system will become the primary system. It can also alternate systems after each defrost cycle. Lastly, it will alternate systems in an alarm condition when either the high temperature alarm has been exceeded for the programmed alarm delay time (2 - 120 Minutes). The unit will activate the high temperature alarm and then switch systems and activate the system alarm relay. Also, after a programmed time of continuous operation without the room temperature being satisfied (30 - 2880 minutes), the control will go into MAX COOLING and turn on the second system to assist the first. The unit will activate System fail and then switch systems and activate the system alarm relay.

FIFO (ROUND-ROBIN) OPERATING MODE

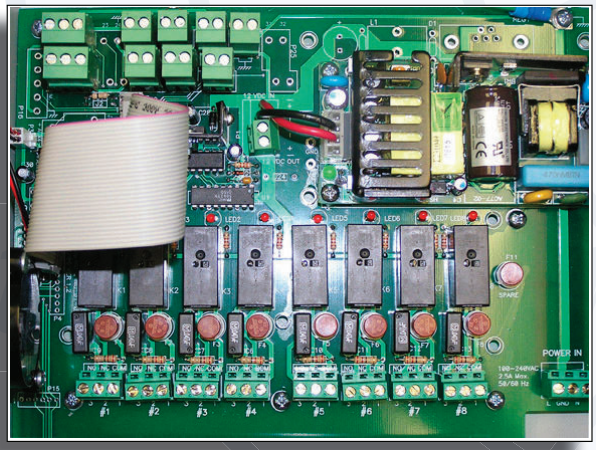
The Controller runs two evaporators based on Round Robin first-in, first-out mode (FIFO). The Controller monitors the room temperature and maintains it by utilizing the cooling capacity of both evaporators. The evaporator liquid line which was turned on first will be the one to be turned off when the cooling capacity requirement is reduced. This rotation scheme equalizes the run time on both evaporators. This mode is activated by menu selection or by shorting the inputs at the MAX. COOLING FIFO input terminal.



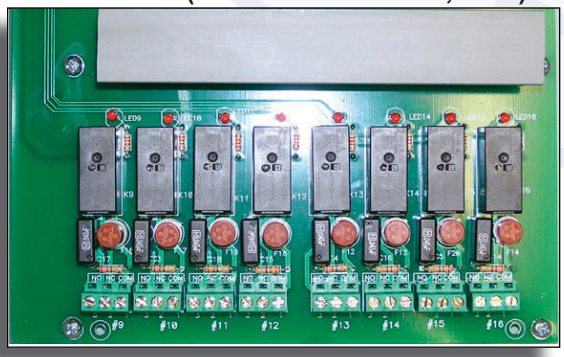
STANDARD INPUT / OUTPUT BOARD

DEFROST OPERATION

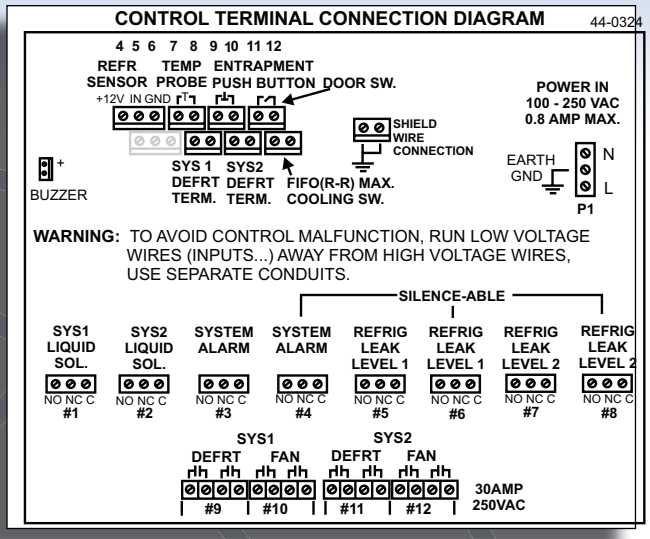
The two evaporators will go into defrost mode at the same time or can be offset. There are four cycles within a full defrost: pump down, main defrost, drip, and fan on delay. All the cycle times can be adjusted. The main defrost cycle on each evaporator can be shorten by the closure of the temperature termination input (thermo-disc closed) or by termination temperature probe reaching a preset temperature.



INSIDE CONTROL (STANDARD MODEL, WLL)



STANDARD RELAYS (LEAK DETECTION, WLL-L)



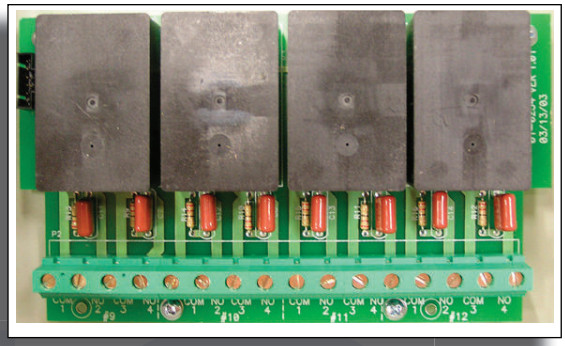
HIGH POWER 30 AMP RELAYS & REFRIGERANT MONITORING INPUT / OUTPUT BOARD

ENTRAPMENT ALARM

User selectable option. When the Entrapment input is opened (Input is connected to a N.C. Entrapment Push Button inside the cooling room), the Control will enter into entrapment alarm mode immediately; the system alarm relays are turned on, the front panel alarm light will flash and the buzzer will sound. Entrapment Alarm can only be reset manually by pressing the ALARM RESET key.

DOOR OPEN ALARM

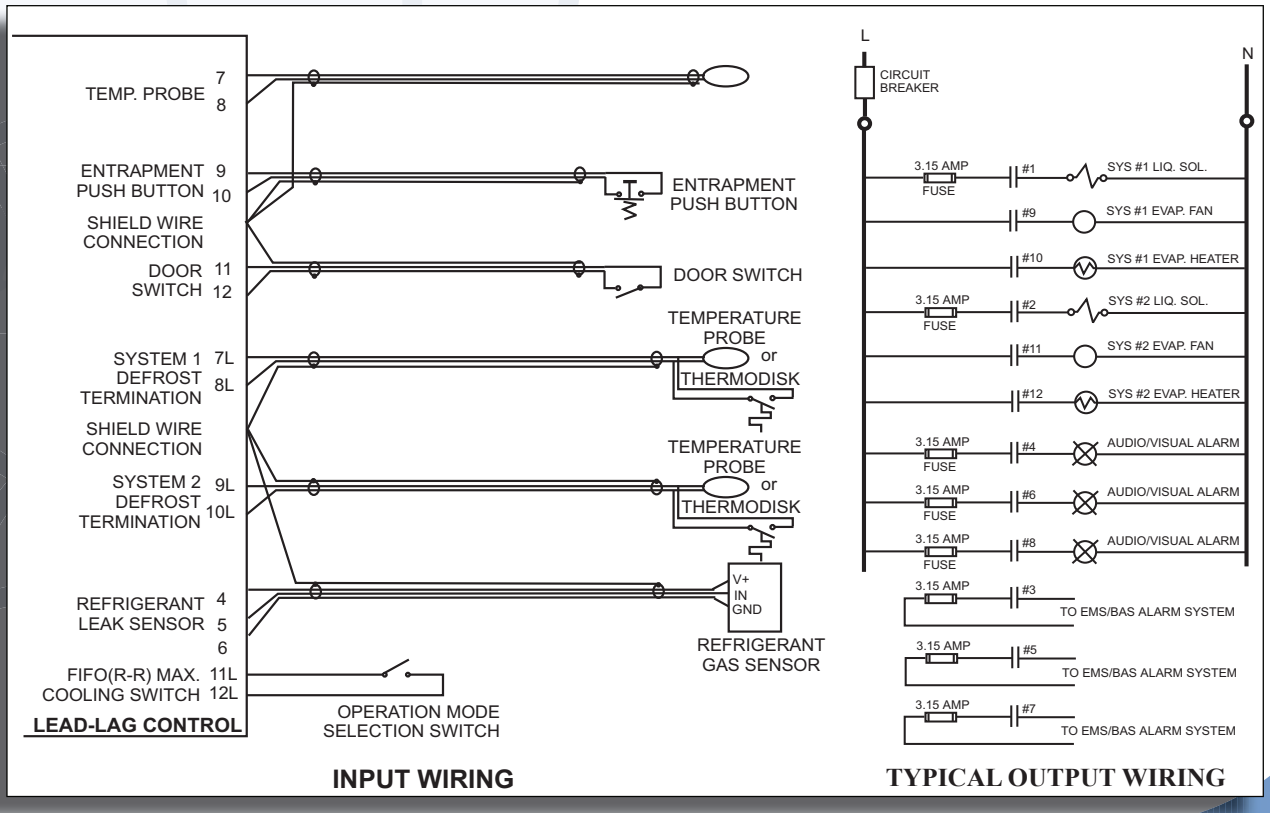
User selectable option. When the door to the room is opened (Door Alarm Input is closed), the Control will start counting down the door alarm delay time. After the delay time has expired and the door is still opened, the Control will enter into door alarm mode; the system alarm relays are turned on, the front panel alarm light will flash and the buzzer will sound. By choice, the alarm can be reset when door is closed or the alarm has to to be reset manually.



30 AMP RELAYS (HIGH POWER MODEL, WLL-30)

REFRIGERANT LEAK ALARM

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



CONTROL SYSTEM

Microprocessor based, set points and system configuration stored within EEPROM with at least 10 years storage life. Logged Data and time clock is 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” type 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
ABS, NEMA 4X Optional

INPUTS

All inputs use un-pluggable screw terminals
Door Open Alarm
Temperature Sensors - 2-wire thermistor,-40-150°F
Refrigerant Sensor -- 3-wire
Defrost Termination Clicks-on or thermistor
Maximum cooling, FIFO activation

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 -- Relays are 1 Form C SPDT rated for 250V AC/24V DC, 10 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.

High Power Model -- These Relay Outputs are 1 Form A DPST rated for 250V AC, 30 Amp resistive load per circuit. Outputs are screw terminal type.

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

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)
Standard 7.25 x 8.0 x 3.2 (184 x 203 x 76)
High Power 14 x 9.5 x 3.4 (355.6 x 241.3 x 86.4)

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)
NEMA 4X 12.1 x 14.9 x 6.9 (308 x 378 x 175)

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