

3 SYSTEM LEAD/LAG COOLER CONTROL (W3LL)



GENESIS INTERNATIONAL, INC.

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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.
- 3 Optional Temperature Termination Sensor Inputs
- One entrapment alarm push button input
- One door switch input
- One refrigerant Leak Sensor input
- Three defrost relay outputs.
- Three fan control relay outputs
- Three liquid solenoid relay outputs
- Two levels of refrigerant leak alarm relay outputs, 2 relays per alarm level. One Relay for each level is silence-able and one is non silence-able.

LEAD-LAG OPERATING MODE

The Lead-Lag system controls three evaporators in the same cooling room. The control will alternate between the three systems. Two systems cool while the other one is idle. The Control will automatically switch from system 1 and 2, to system 2 and 3 and then to system 1 and 3, and alternate back to system 1 and 2 and continue in this manner to maintain the equal run time on all three systems. The Fans on each system can be on or off while in cooling mode.

The Control alternates the systems after three different situations:

The systems alternate when the temperature within the room is met. The evaporators operate in sequence. The longest running system will become idle and the system idle for the longest period of time will turn on.

Defrost. The systems will switch immediately following a defrost cycle.

Two hours of continuous operation. Should the refrigeration system operate for a continuous two hour period without the room temperature satisfied, the controller will switch to one of the idle systems and activate the system alarm.

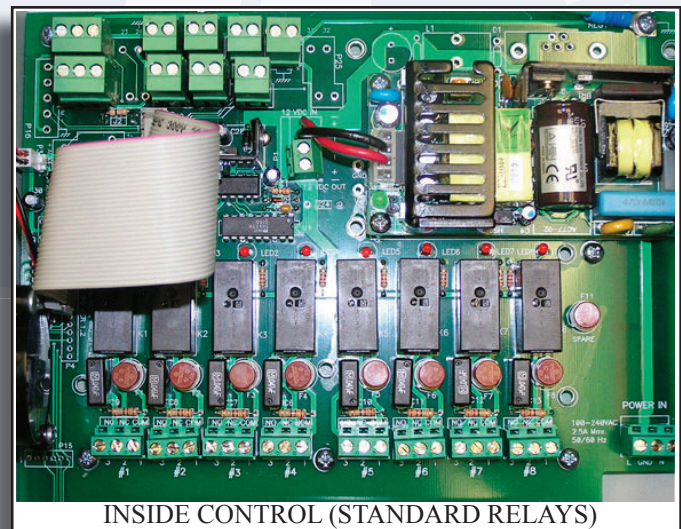
FIFO (ROUND-ROBIN) OPERATING MODE

The Controller can also run the evaporators based on first-in, first-out mode (FIFO). The Controller monitors the room temperature and maintains the room

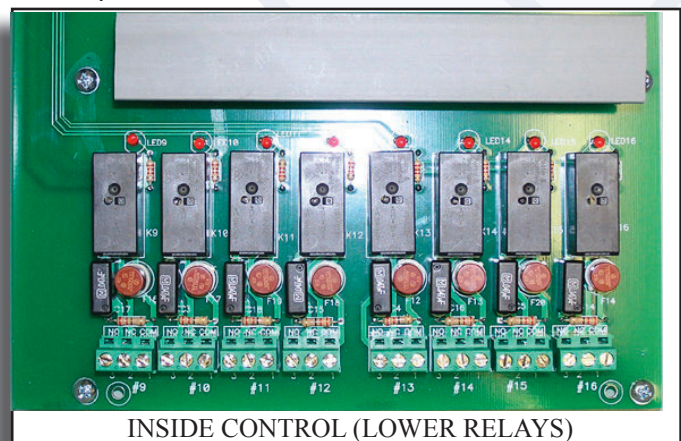
temperature by utilizing the cooling capacity of the evaporators. The evaporator liquid line which was turned on first will be the one to be turned off when cooling capacity requirement is reduced. This rotation scheme equalizes the run time on each evaporator. It is possible that sometimes one system is operating and other times, two or all three systems are operating at the same time. The optimum Round-Robin cycle speed can be set in the field. This mode is activated by menu selection or by shorting the inputs at the MAX. COOLING FIFO activation input terminals.

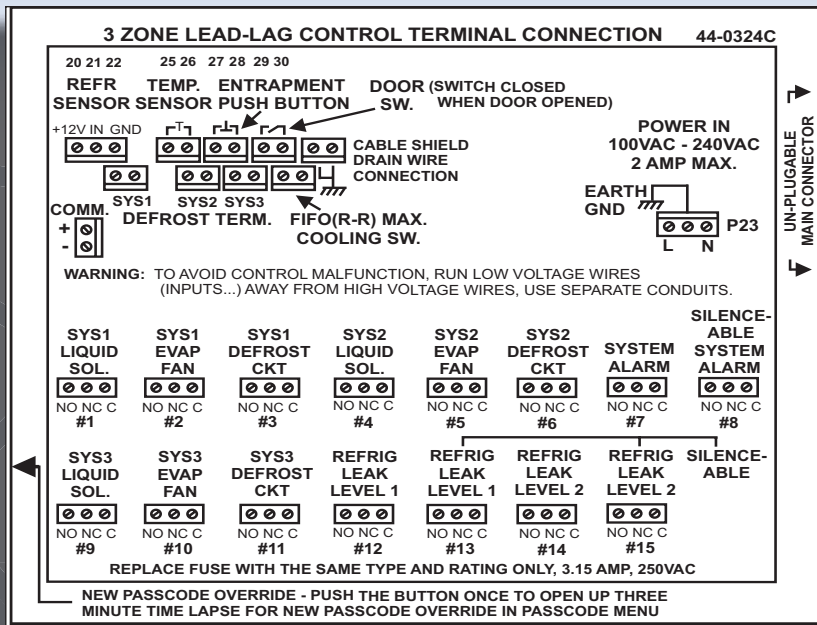
DEFROST OPERATION

The entire system will defrost simultaneously or off-set depending upon the user needs, eliminating conflicts between each system. The amount of offset time can be set up in the field. Defrost consists of four cycles: Pump down, Defrost, Drip cycle, Fan on delay cycle.



All the cycle times can be adjusted. The main defrost cycle on each evaporator will be terminated by the closure of the temperature termination input (T-stat) or by termination temperature probe reaching a pre-set temperature.





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. After the delay time expired and the door is still opened, the system alarm relays are turned on, the front panel alarm light are flashing and the buzzer is turned on. By choice, the alarm can be reset when door is closed or the alarm has to to be reset manually.

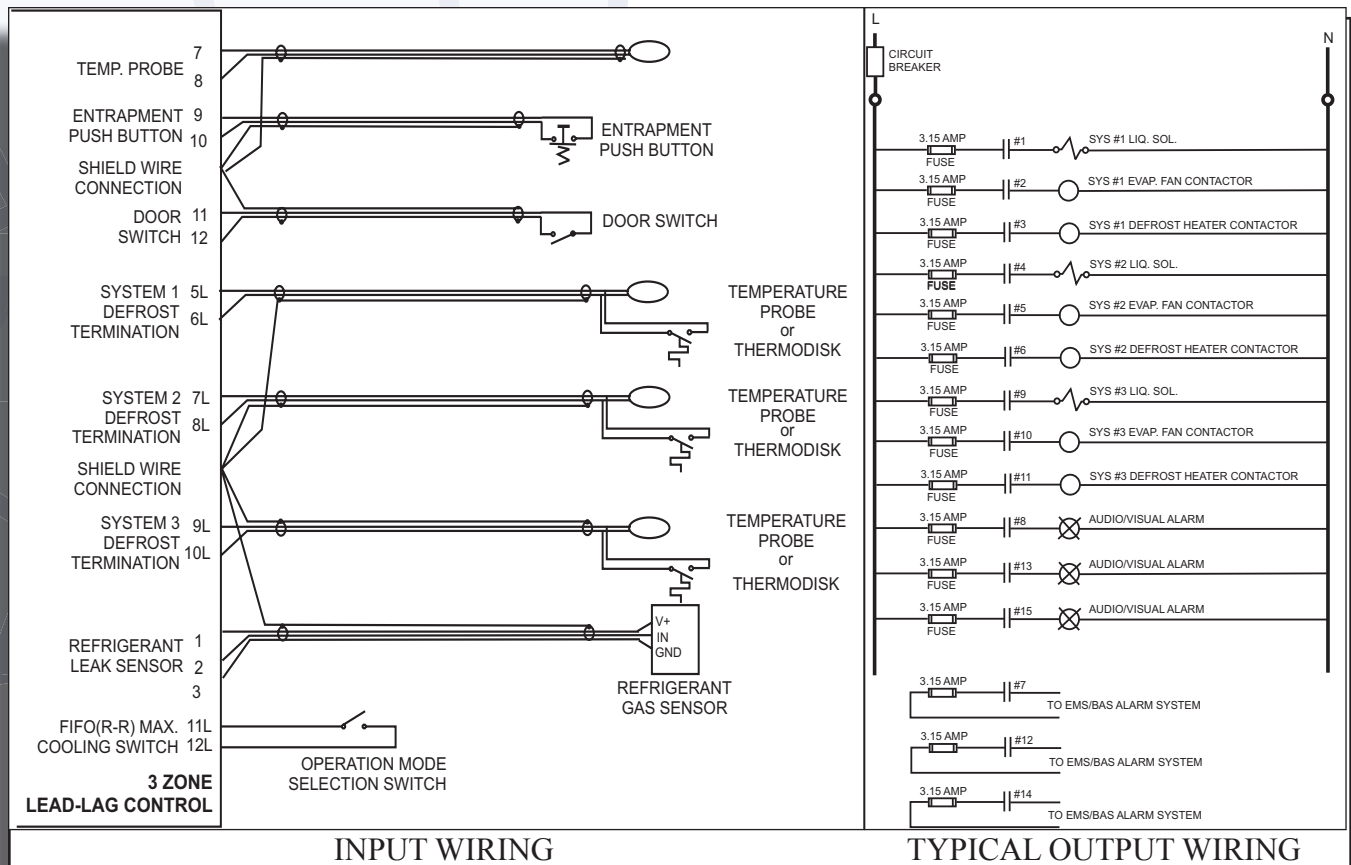
REFRIGERANT LEAK ALARM

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.

ENTRAPMENT ALARM

User selectable option. When 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 are flashing and the buzzer is turned on. Entrapment Alarm can only be reset manually by pressing the ALARM RESET key.

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. Program logic stored within non-volatile Flash EPROM memory. 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

Dimensions -- 12.25" x 8.75" x 3.0"

INPUTS

Entrapment Push Button Input
Door Open Alarm Input
Temperature Sensors --
2-wire thermistor, -40 to 150° F
Refrigerant Sensor -- 3-wire input
Defrost Termination Click-on input or thermistor input
Maximum cooling, FIFO activation input
Inputs use unpluggable 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 -- 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.

Genesis International, Inc. reserves the right to change product specifications without notice.



NEMA 1 ENCLOSURE



NEMA 4X ENCLOSURE

MODEL #	NEMA/IP RATING	ELECTRICAL POLLUTION CATEGORY	PROTECTION
W3LL	1	II	2
W3LL-4	4x / Ip67	II	3
W3LL-PM	1	II	2

LISTINGS

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



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