4 SYSTEM LEAD/LAG COOLER CONTROL (W4LL)

GENESIS INTERNATIONAL, INC.

4 SYSTEM LEAD/LAG COOLER CONTROL (W4LL)

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.
4 Optional Temperature Termination Sensor Inputs
One entrapment alarm push button input
One door switch input
Four defrost relay outputs.
Four fan control relay outputs
Four liquid solenoid relay outputs

LEAD-LAG OPERATING MODE

The Lead-Lag system controls two pairs of evaporators in the same cooling room. The control will alternate between systems 1 & 2 and systems 3 & 4. The first two systems will run in round-robin and cool while the other two are idle. The Control maintain the room temperature utilizing the cooling capacity of the two systems. The Control will automatically switch from system 1,2 to system 3,4 and continue in this manner to maintain the equal run time on all four 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 "Primary System" will become idle, the system idle for the longest period of time will become primary.

Defrost. The systems will switch to secondary 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.

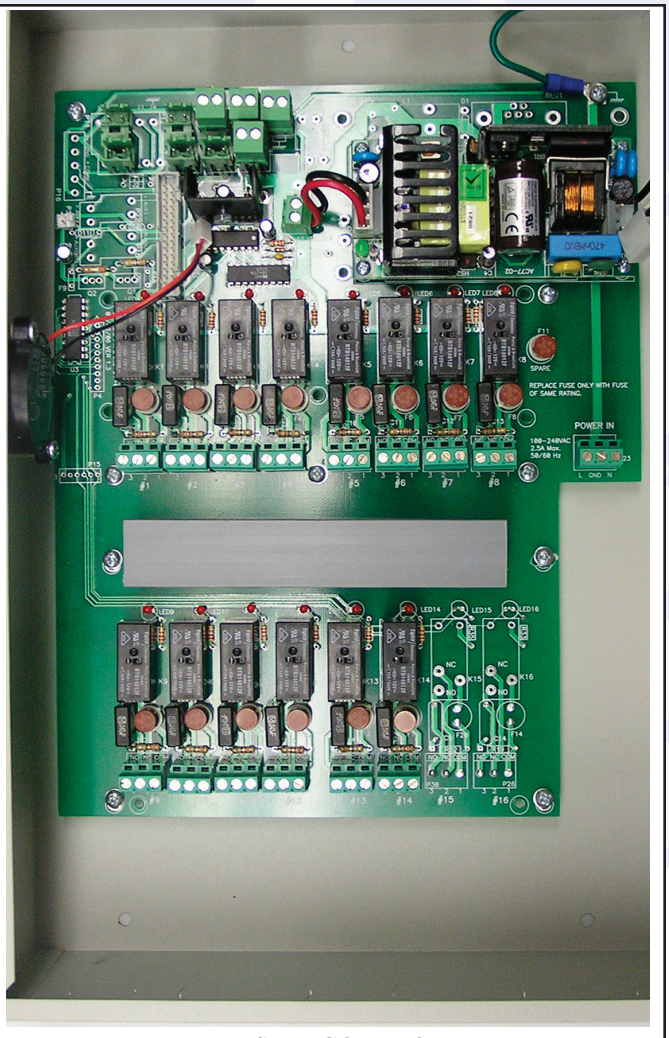
FIFO (ROUND-ROBIN) OPERATING MODE

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 ,three or all four 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 offset depending upon the user needs, elimating 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 preset temperature.



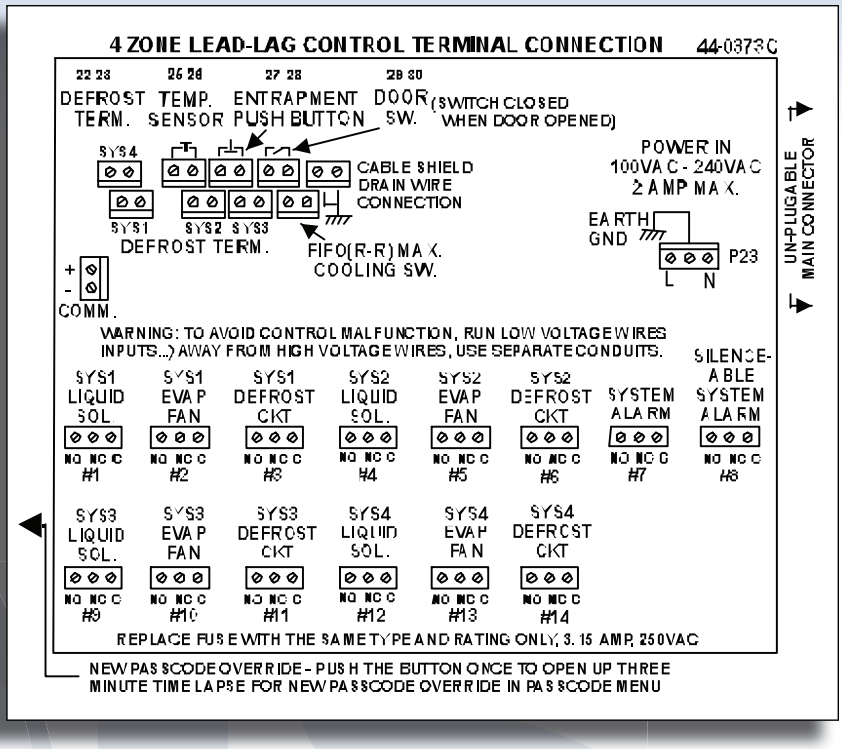
INSIDE CONTROL

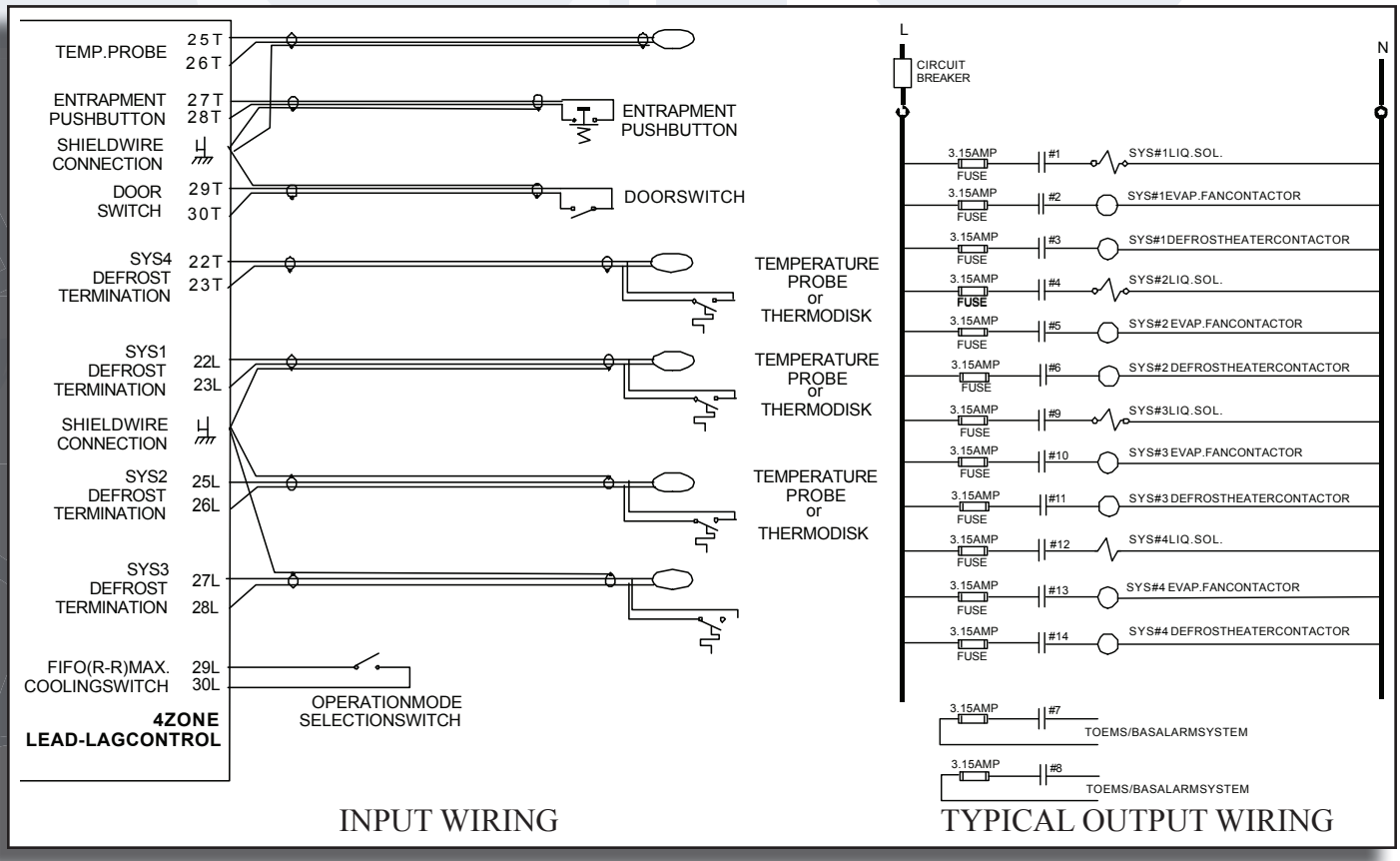
ENTRAPMENT ALARM

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.

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 Control will enter into door alarm mode; 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.





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 CATEGORY	POLLUTION PROTECTION
W4LL	1	II	2
W4LL-4	4x / Ip67	II	3
W4LL-PM	1	II	2

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

GENESIS INTERNATIONAL, INC.

1040 FOX CHASE INDUSTRIAL DR
ARNOLD, MO 63010
EMAIL:MAIL@GENESIS-INTERNATIONAL.COM
TEL: 636-282-0011
FAX:636-282-2722
WEB:WWW.GENESIS-INTERNATIONAL.COM