

## GENESIS INTERNATIONAL, INC. Wizard

Single Zone Evaporator / Defrost Control System with Humidity Control & Sherlock Refrigerant Leak Detection NEMA 4X (WEC-L-H-4)



## Wizard Evaporator / Defrost With Humidity Control (WEC-L-H-4), Part #88-0350-00

The Wizard Industrial Control System in a NEMA 4X ABS watertight housing (WEC-L-H-4) was designed to incorporate the functions necessary to control one valve group in a large refrigerated spaces into a compact, simple to install package. The WEC-L-H-4 is compliant with ASHRAE 15-2019 and MECHANICAL CODE requirements for refrigerant gas monitoring with the addition of a Sherlock refrigerant gas sensor. A single WEC-L-H-4 can replace the following items:

> Evaporator Valve Group Status Monitor Multi-Function Defrost Clock Temperature Control, Monitoring and Alarming Refrigerant Gas Leak Monitor and Alarm **Humidity Monitor** De-Humidification Load Shedding Control System Shutdown Temperature Recorder

**MODEL ELECTRICAL POLLUTION** CATEGORY PROTECTION RATING WEC-L-H-4 4x / lp67

NEMA 4X Compliant Enclosure - 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.

## **Specifications**

Housing NEMA 4X. ABS

**Dimensions** Inches (mm) 14.0 x 12.0 x 7.0 (356 x 305 x 178)

**Power** 100 to 240vac, 50/60 hz, 2.5 Amps Inputs

Up toThree (3) NTC Thermistor

Temperature Sensors

One (1) **SHERLOCK** Refrigerant Sensor Cmos, Infrared or Electro-Chemical One (1) 1-2 VDC Humidity Sensor,

10-90% RH

Three dry contacts -- Force Defrost,

Shutdown, Load Shedding.

Outputs Fourteen (14) SPDT, 1 Form C, 250V

AC, 5.0 Amp relays.

**Optional VSD** Dual Variable Speed Drive control relay,

(Fans, Compressors, Etc.)

**Alarms** System Alarms (2 relay)

Low & High Temperature

Termination Failure / Coil Recovery Refrigerant Gas Leak Alarm, Two (2) alarm levels (2 SPDT Relays per level)

**Display** 2 lines by 20 characters Alphanumeric

LCD with back light.

Evaporator Control Status LEDS -indicates Control Operating Status of

**Evaporator Controls Circuits** 

Alarm Status LEDS -- indicates Alarm

Status

5 tactile pushbuttons: Scroll up, Scroll Keypad

down Select/Edit/Change, Force Defrost

Start/Advance

**Alarm Indicators** 

LCD Name, description, and current reading

of alarming sensor

Buzzer piezo-electric, 90db @10ft, silenceable Status LED Two on front panel of control. Indicates

alarm status of the System Alarm

Optional Strobe Light Mounted on the enclosure, activates during any alarm condition.

Listings

ETL, Conforms to UL Std. 61010-1

Certified to CAN/CSA, C22.2 Std. No. 61010-1

Warranty 15 Month Limited

60-0125-00 WEC-L-H-4 09-25-19

Temperature Control & Alarming - Each WEC-L-H-4 is equipped with a temperature sensor for monitoring and controlling temperature. The control monitors alarms both high and low levels, each having its own programmed delay. The WEC-L-H-4 can also monitor coil temperature. and an auxiliary temperature.

Defrost Control - The WEC-L-H-4 is an electronic control and time clock which can operate up to 12 defrost cycles per day with three separate defrost schedules as well as manual defrost. The defrost can be gas, electric, water or off-time defrost. During a defrost cycle the Wizard will sequence solenoids, valves, fans & heaters as required.

**Defrost Termination** - A defrost cycle can be terminated by clicks-on thermo-disk, temperature termination sensor, suction pressure switch or time.

Load Shedding / Temperature Control Setback - The WEC-L-H-4 allows the user to change the temperature control setpoint during peak energy times to a higher value in order to reduce energy demand.

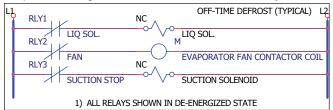
Shutdown (Standby) - The WEC-L-H-4 can be configured to shutdown the system on a daily schedule, during off-season or maintenance periods.

ELECTRIC DEFROST (TYPICAL) LIQ SOL. **EVAPORATOR FAN CONTACTOR COIL** NC RI Y3 SUCTION STOP SUCTION SOLENOID RLY4 WATER PUMP CONTACTOR COIL DEFROST #1 RI Y NC DEFROST #2 WATER VALVE SOLENOID RLY6 **EOUALIZER EOUALIZER VALVE** 1) ALL RELAYS SHOWN IN DE-ENERGIZED STATE HOT GAS DEFROST (TYPICAL) RLY1 LIQ SOL. LIQ SOL. RLY2 **EVAPORATOR FAN CONTACTOR COIL** NC RLY3 SUCTION STOP SUCTION SOLENOID NC SOFT GAS SOLENOID DEFROST #1 RLY5 NC DEFROST #2 HOT GAS SOLENOID RLY6 NC FOLIAL TZER EQUALIZER VALVE 1) ALL RELAYS SHOWN IN DE-ENERGIZED STATE RLY1 WATER DEFROST (TYPICAL) LIO SOL. LIQ SOL. RI Y2 FAN **EVAPORATOR FAN CONTACTOR COIL** RLY3 NC SUCTION STOP SUCTION SOLENOID RLY4 DEFROST #1 ELECTRIC DEFROST CONTACTOR COIL RLY5 DEFROST #2 ELECTRIC DEFROST CONTACTOR COIL RLY6 **EQUALIZER** EQUALIZER VALVE 1) ALL RELAYS SHOWN IN DE-ENERGIZED STATE

Refrigeration Leak Monitoring - The WEC-L-H-4 makes a room code compliant with the addition of a Sherlock refrigerant sensor (Solid State CMOS, Infrared or Electro-Chemical). The WEC-L-H-4 will activate four separate alarm relays based upon two alarm level threshold setpoints energizing alarm indication equipment and any additional safety procedures as required by local codes. The WEC-L-H-4 gives the user an option to pump down, then isolate the evaporator coil should the leak concentration exceed level two.

Humidity / Dehumidification Control Relays - Used with the Wizard Temperature/Humidity Sensor. One relay is for humidity and the second relay is for de-humidification. The heat will come on as the cooling is used for room dehumidification.

Remote Communications & Data Logging - GenCom communications software allows the computer operator to access and change the WEC-L-H-4 within a facility via a PC connection. The WEC-L-H-4 will record up to 1500 temperature log entries into its internal memory.



**Typical Wiring Diagram** 22/2 WITH SHIELD OR 20/2 WITH SHIELD SEE NOTE TEMP CTRL TEMP SENSOR 22/2 WITH SHIELD OR 20/2 WITH SHIELD SEE NOTE (3) TEMP SENSOR (4) (1) 3-18 AWG IR SENSOR THERMODISK CMOS SENSOR (2) 18 AWG (5) 18 AWG (8) 18 AWG 22/2 WITH SHIELD OR 20/2 WITH SHIELD SEE NOTE (3) TEMP SENSOR (9) WIZARD EVAP CTRL INPUT TEMPERATURE / HUMIDITY SENSOR

- (1) USE BELDEN 8770, 3-18 AWG, TWISTED SHIELDED
- (2) MOMENTARY DRY CONTACT SIGNAL ONLY. FORCE DEFROST UPON CLOSURE. CAN BE CONNECTED TO A GANG DEFROST CLOCK FOR SEQUENCING OF MULTIPLE WIZARD CONTROLS.
- (3) FOR CABLE RUNS OF 0 TO 250FT USE BELDEN 8451, (FOR PLENUM INSTALLATIONS 83552) FOR CABLE RUNS OF 250 TO 1000FT USE BELDEN 8760, (FOR PLENUM INSTALLATIONS 83652.
- (4) DEFROST CYCLE CAN BE TERMINATED BY EITHER A TEMPERATURE SETPOINT AND PROBE, A "MAKE ON RISE" CLICKS-ON THERMODISK, OR BOTH.
- (5) DRY CONTACT SIGNAL ONLY. SYSTEM SHALL GO INTO LOAD SHEDDING MODE UPON CLOSURE OF CONTACT. SYSTEM SHALL RETURN TO NORMAL MODE IMMEDIATELY UPON OPENING OF CONTACT.
- (6) MAKE ALL SPLICES WITH 3M 'UR' CONNECTORS OR ANOTHER CORROSION RESISTANT CRIMP
- (7) USE EITHER SHERLOCK CMOS SENSOR OR SHERLOCK IR SENSOR
- (8) DRY CONTACT SIGNAL ONLY. SYSTEM SHALL GO INTO STANDBY MODE UPON CLOSURE OF CONTACT. SYSTEM SHALL RETURN TO NORMAL MODE IMMEDIATELY UPON OPENING OF CONTACT.

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**ARNOLD, MO 63010** 

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