GENESIS INTERNATIONAL, INC.

Wizard

Single Zone Evaporator / Defrost Control System With Variable Speed Drive (WEC-1ZN-VSD)

Wizard Evaporator Defrost Control w/Variable Speed Drive (WEC-1ZN-VSD), Part #88-0716-00

The Wizard Industrial Control System with Variable Speed Drive (WEC-1ZN-VSD) was designed to incorporate the functions necessary to control one valve group in a large refrigerated spaces into a compact, simple to install package. A single WEC-1ZN-VSD can replace the following items:

Evaporator Valve Group Status Monitor
Multi-Function Defrost Clock
Temperature Control
Temperature Monitoring and Alarming
Load Shedding Control
System Shutdown
Temperature Recorder
Alarm System

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, ie. environmentally controlled offices, control rooms, or environmentally controlled machine rooms.

Specifications

Dimensions Inches (mm)	12.0 x 9.5 x 5.0 (305 x 241 x 127)
Power	100 to 240vac, 50/60 hz, 2.5 Amps
Inputs	Up toThree (3) NTC Thermistor Sensors Three dry contacts -- *Force Defrost, Shutdown, Load Shedding.*
Outputs	Eight (8) SPDT, 1 Form C, 250Vac, 3.15Amp relays.
VSD Control	Variable Speed Drive - 4-20mA Output for Fans, Compressors, etc.
Alarms	System Alarms (2 relay) Low & High Temperature Termination Failure / Coil Recovery
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
Keypad	5 tactile pushbuttons: Scroll up, Scroll 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

Temperature Control & Alarming - Each Wizard is equipped with a temperature sensor for monitoring and controlling temperature in a refrigerated room. The control monitors will alarm to both high & low levels, each having its own programmed delay. The Wizard can monitor up to three independent temperature sensors for Temperature Control, Coil Temperature, and Auxiliary.

Defrost Control - The Wizard is an electronic control & time clock which can operate up to 12 defrost cycles per day with three separate defrost schedules and manual defrost. The defrost methods can be gas, electric, water or off-time. In a defrost cycle the Wizard can 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 Wizard System allows the user to change the Temperature Control Setpoint to a higher value in order to reduce energy demand.

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

Variable Speed Drive Output (VSD) - (Analog) This Output is wired through the Fan Control Relay to turn the fixed speed fan into a VSD fan output. 4 - 20mA or 0 - 10Volt (Factory Set).

Remote Communications & Data Logging - GenCom Communications software allows access to view and change the Wizard within a facility via a PC connection. The Wizard will record up to 1500 temperature log entries into its internal memory.

Electric Defrost

Defrost Step	Step Name	Range	Relay / Valve / Circuit					
			Liquid Line Solenoid	Evaporator Fan	Suction Stop	Electric Defrost Pre-Heat Stage (Defrost #1)	Electric Defrost (Defrost #2)	Equalizer Valve
1	Normal Refrigeration		Cycling	On	Open	Closed	Closed	Closed
2	Pump Down	0-250 min	Closed	On	Open	Closed	Closed	Closed
3	Pre-Heat Cycle	0-250 min	Closed	Off	Closed	Open	Closed	Closed
4	Defrost Cycle	0-250 min	Closed	Off	Closed	Closed	Open	Closed
5	Drip Cycle	0-250 min	Closed	Off	Closed	Closed	Closed	Closed
6	Equalizing Cycle	0-250 min	Closed	Off	Closed	Closed	Closed	Open
7	Fan Start Delay	0-250 min	Open / Cycling	Off	Open	Closed	Closed	Closed
8	Normal Refrigeration		Cycling	On	Open	Closed	Closed	Closed

Hot Gas Defrost

Defrost Step	Step Name	Range	Relay / Valve / Circuit					
			Liquid Line Solenoid	Evaporator Fan	Suction Stop	Soft Gas Valve (Defrost #1)	Hot Gas Valve (Defrost #2)	Equalizer Valve
1	Normal Refrigeration		Cycling	On	Open	Closed	Closed	Closed
2	Pump Down	0-250 min	Closed	On	Open	Closed	Closed	Closed
3	Soft Gas	0-250 min	Closed	Off	Closed	Open	Closed	Closed
4	Defrost Cycle	0-250 min	Closed	Off	Closed	Open	Open	Closed
5	Drip Cycle	0-250 min	Closed	Off	Closed	Closed	Closed	Closed
6	Equalizing	0-250 min	Closed	Off	Closed	Closed	Closed	Open
7	Fan Start Delay	0-250 min	Open / Cycling	Off	Open	Closed	Closed	Closed
8	Normal Refrigeration		Cycling	On	Open	Closed	Closed	Closed

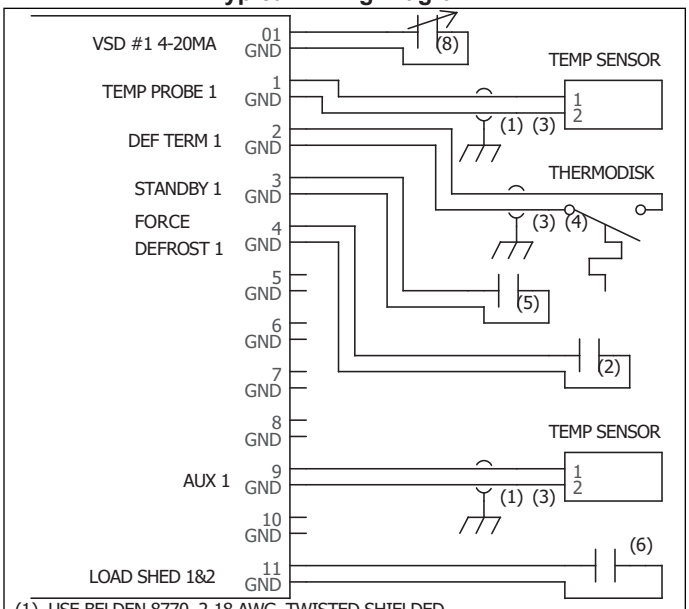
Water Defrost

Defrost Step	Step Name	Range	Relay / Valve / Circuit					
			Liquid Line Solenoid	Evaporator Fan	Suction Stop	Water Defrost Stage #1 (Defrost #1)	Water Defrost Stage #2 (Defrost #2)	Equalizer Valve
1	Normal Refrigeration		Cycling	On	Open	Closed	Closed	Closed
2	Pump Down	0-250 min	Closed	On	Open	Closed	Closed	Closed
3	Water Stage Cycle	0-250 min	Closed	Off	Closed	Open	Closed	Closed
4	Defrost Cycle	0-250 min	Closed	Off	Closed	Open	Open	Closed
5	Drip Cycle	0-250 min	Closed	Off	Closed	Closed	Closed	Closed
6	Equalizing Cycle	0-250 min	Closed	Off	Closed	Closed	Closed	Open
7	Fan Start Delay	0-250 min	Open / Cycling	Off	Open	Closed	Closed	Closed
8	Normal Refrigeration		Cycling	On	Open	Closed	Closed	Closed

Off-Time Defrost

Defrost Step	Step Name	Range	Relay / Valve / Circuit					
			Liquid Line Solenoid	Evaporator Fan	Suction Stop	Water Defrost Stage #1 (Defrost #1)	Water Defrost Stage #2 (Defrost #2)	Equalizer Valve
1	Normal Refrigeration		Cycling	On	Open	Closed	Closed	Closed
2	Defrost Cycle	0-250 min	Closed	On	Open	Closed	Closed	Closed
3	Normal Refrigeration		Cycling	On	Open	Closed	Closed	Closed

Typical Wiring Diagram



(1) USE BELDEN 8770, 2-18 AWG, TWISTED SHIELDED

(2) MOMEMTARY 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 CABLE RUNS OF 250 TO 1000FT USE BELDEN 9154, 22/2 WITH SHIELD OR 20/2 WITH SHIELD

(4) A "MAKE ON RISE" CLICKS-ON THERMODISK.

(5) 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.

(6) 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.

(7) MAKE ALL SPLICES WITH 3M 'UR' CONNECTORS OR ANOTHER CORROSION RESISTANT CRIMP.

(8) VARIABLE SPEED DRIVE OUTPUT WIRED THROUGH WIZARD DRY CONTACT

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