



# Evaporator Controller

## Specification Sheet

### Evaporator Controller (1 per evaporator)

Refrigeration Evaporator Temperature and Defrost Controller – HTPG Surveillant or Equal

Evaporator Controller to consist of a microprocessor driven controller and include the following:

- 1) 5 Analog Inputs
  - a) (4) Temperature Sensors
  - b) (1) Pressure Transducer
- 2) 4 Relay Outputs
  - a) 10 Amp (Inductive) Fan Relay
  - b) 20 Amp (Resistive) Defrost Relay
  - c) 3 Amp General Purpose (2 Amp Pilot Duty) Solenoid Relay
  - d) 3 Amp General Purpose (2 Amp Pilot Duty) Auxiliary Relay
- 3) 3 Programmable Digital Inputs
- 4) 1 Ethernet Connection
- 5) 1 Output 0-10V DC
- 6) 1 Electric Expansion Valve Driver for bipolar electric expansion valve

The microprocessor board shall be potted to protect it from moisture and allow it to be located within refrigerated environment. Operating Environment -40°F to 140°F.

The controller shall operate on 120V or 208V - 240V.

The controller shall have a 4 digit alphanumeric, scrolling LED display and operating status lights showing system conditions.

The controller shall have a 6 pushbutton user interface that provides full access to variables and setpoints.

The microprocessor shall have onboard web server allowing system parameters to be monitored remotely utilizing standard TCP/ IP protocols HTML and XML communication. Multiple controllers will have the ability to utilize TCP / IP communication to communicate with each other, providing the ability to sync compressor run/off and defrosts between multiple evaporators.

The controller's microprocessor shall have the option of controlling evaporator fans the following ways:

- 1) Continuously
- 2) Cycle on room temperature and coil temperature
- 3) Cycle on with compressor

The controller's microprocessor shall have the option of selecting between the following defrost type:

- 1) Air
- 2) Electric

The controller's microprocessor shall have the option of selecting between defrost control method:

- 1) Demand defrost which initiates defrost on loss of evaporator efficiency and is terminated on temperature (or time if temperature is not achieved).
- 2) Time initiated defrost – terminated by temperature.
- 3) Runtime defrost which initiates defrost based on number of hours of compressor operation

The controller shall include a 7 day rolling graph of the evaporator return air and coil temperatures.

The controller shall have the ability to send alarm notifications via email or text message.

The controller's microprocessor shall provide system protecting safeguards as follows:

- 1) Compressor over cycle protection
- 2) Fan over cycle protection

The controller's microprocessor shall have the option of selecting between auxiliary relay types:

- 1) Alarm Relay
- 2) 2<sup>nd</sup> compressor relay
- 3) 2<sup>nd</sup> fan relay
- 4) 2<sup>nd</sup> defrost relay
- 5) 2 speed fan control
- 6) Light relay
- 7) Permanent defrost relay

The controller shall have the option of data logging at 10 minute intervals for 31 days the following:

- 1) System Status
- 2) Suction Pressure
- 3) Suction Temperature
- 4) Saturated Temperature
- 5) Superheat
- 6) Valve % open
- 7) Room Temperature
- 8) Coil Temperature
- 9) Compressor Status
- 10) Fan Status
- 11) Defrost Status
- 12) Digital Input Status
- 13) Alarms

**Pressure  
Transducer**

Input 0-5VDC  
Pressure Range: 0 to 150 psia  
Proof Pressure: 450 psi  
Burst Pressure: 1500 psi  
Operating Temperature: -40°F to 275°F

**Temperature Sensor**

Operating Range -60°F to 150°F  
Stainless steel housing  
Moisture resistant package  
2KΩ@77°F