


# **Guardian** - System Monitor and Speed Control

**Description:** The  **Guardian** can be installed on any refrigeration system incorporating a Danfoss BD35 or BD50 compressor, and replaces any existing thermostat. The unit comprises a black plastic panel measuring 5" w x 2" h that requires a 4.5" x 1.5" cut-out and a depth of 3". The panel incorporates a Coastal MK II 12v Digital



Actual size

Thermostat, a compressor speed adjustment knob, and a diagnostic fault LED. The panel is supplied with a 10' thermostat sensor and a 10' control cable that connects to either a Standard (101N0210) or AEO (101N0300) Danfoss compressor controller (Module). Electrical hook-up is made simple with slip-on electrical connectors, and the panel is fully protected by a 2 amp in-line fuse. 24v models available on request.

**Operation:** The Coastal  **Guardian** performs three primary functions:

- 1) Controls and displays refrigerator or freezer box temperature and compressor operational status.
- 2) Provides automatic or manual compressor speed control for maximum possible system efficiency.
- 3) Gives audible and visual indication of temperature anomalies and system malfunction.

1) The **Coastal MK II Digital Thermostat/Thermometer** is pre-installed and is set to work as either a refrigerator or freezer control with a user-specified set point. Box temperature will be kept within two degrees (adjustable) of the set point, and probe temperature is displayed continuously in degrees and tenths on the three-segment red LED display. A snowflake symbol is illuminated to indicate that the compressor is operating. Full instructions, with details on how to adjust the temperature set point, differential, temperature scale (Fahrenheit or Celsius), and alarms, are included with the thermostat. The Coastal MK II also features an emergency on-off routine that can be set to automatically activate in the unlikely event of a temperature probe failure.

2) **Compressor speed** is controlled by adjusting the rotary knob. When set to the "AUTO" position and with the AEO module or **Merlin** Smart Speed Controller installed, compressor will automatically run at the most efficient speed. If a Standard (101N0210) Danfoss controller is installed and no **Merlin** SSC, the "AUTO" setting is non-operational. The principle behind controlling compressor speed being that the longer and slower a compressor can be run, the more efficient it will be, and the less energy it will use overall.

3) The **Diagnostic LED**, labeled "FAULT", will display one of five flashing error codes if a safety shut-down of the compressor should occur. Faults indicated are: Low voltage, Fan/Pump Overload, Compressor Non-Start, Compressor Low RPM, and Electronics Overload. Full details and a troubleshooting guide are provided.

**Audible alarm** (buzzer) can be set to sound when temperatures exceed user-specified high and low limits.

**Visual alarms** are displayed for: Sensor Failure and High/Low Temperature Alarm.



 **Guardian** from

 **Coastal Climate Control, Inc.**

PO Box 4535 Annapolis MD 21403 USA – [www.frigoboat.com](http://www.frigoboat.com) – [info@frigoboat.com](mailto:info@frigoboat.com) – 301-352-5738