Title (en)
PREDICTIVE FAILURE ALGORITHM FOR REFRIGERATION SYSTEMS

Title (de)
PRÄDIKTIVER FEHLERALGORITHMUS FÜR KÄLTEANLAGEN

Title (fr)
ALGORITHME DE DÉFAILLANCE PRÉDICTIF POUR SYSTÈMES DE RÉFRIGÉRATION

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Abstract (en)
[origin: US2014250925A1] An apparatus and method for predicting failure of a ultralow temperature freezer is disclosed. The freezer includes a variety of temperature sensors, which monitor the temperature of the freezer at various components, such as at the heat exchanger, the condenser, and the evaporator. A controller is in communication with these sensors. The controller monitors these sensors and may determine that the freezer has experienced a performance degradation, or a severe performance degradation. In some embodiments, the controller also monitors other events, such as the actuation of the compressors, and closing of the freezer door. The controller uses temperature information, either absolute sensor readings, or the difference between two different sensor to estimate refrigerant volume and flow rate in the system. In some embodiment, the controller also uses elapsed time from a specific event and a temperature reading to estimate refrigerant volume and flow rate in the system.

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