



ODESSA NATIONAL ACADEMY OF FOOD TECHNOLOGIES

AUTOMATED REFRIGERATION SYSTEM WITH THE POSSIBILITY FOR RESEARCH AND IMPROVEMENTS OF ENERGY CHARACTERISTICS FOR SYSTEM ELEMENTS

The purpose and scope of application

The demand for artificial cold is constantly increasing. During energy cost increase, the actual problems of science and technology are energy characteristics improvements for Refrigeration Systems and the development of automatic control systems. The operating refrigeration equipment does not work optimally from the energy saving and operation safety point of view quite often. The developed Refrigeration System provides an opportunity to conduct a study of thermodynamic processes occurring in the system, regulating the operation modes methods. The thermal chamber, which Refrigeration System is equipped, allows to carry out studies in a wide temperature range (at the level $-35 \dots + 50$ °C).

Key indicators that characterize the level of the scientific result obtained

The most important indicator is the Refrigeration System energy efficiency improvements due to the complex system automation. The level Refrigeration System automation allows flexible and fast control of the system operating temperatures and other equipment operational parameters, handling of alarms. The possibility of remote control, adjustment of the control algorithm and removal of accumulated data through the Internet is provided. The Refrigeration System is automated.

Intellectual Property Protection Status

4 patents of Ukraine were obtained.

Market demand

Retail chains, catering establishments, food and chemical industries are interested in Automated Refrigeration Systems.

State of development

Developed Refrigeration System prototype can operate in manual and automatic modes is manufactured. Case studies has been carried out using R404a refrigerant.



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