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ОПТИМИЗАЦИЯ РАБОТЫ ВЕНТИЛЯЦИОННЫХ СИСТЕМ НА ПРЕДПРИЯТИЯХ ОБЩЕСТВЕННОГО ПИТАНИЯ С ПОМОЩЬЮ ПРОГРАММИРУЕМЫХ УСТРОЙСТВ И ИНФРАКРАСНЫХ НАГРЕВАТЕЛЬНЫХ ЭЛЕМЕНТОВ

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OPTIMIZATION OF VENTILATION SYSTEMS IN PUBLIC CATERING ESTABLISHMENTS USING PROGRAMMABLE DEVICES AND INFRARED HEATING ELEMENTS

Abstract. *The purpose of the study is to ensure favorable microclimate conditions for workers in food preparation areas with optimization of energy costs. Organization of the food preparation process is a prerequisite for the functioning of hospitals, schools and preschools, hotels and other enterprises where people are for a long time. Due to an improperly organized ventilation system in the premises where these enterprises operate, various odors may appear which negatively affects their activities. On the other hand, the operation of ventilation systems in food preparation areas with maximum productivity provides fresh air in the premises, but consumes large energy resources. In this article, the authors consider measures to organize intelligent control systems for the operation of supply and exhaust ventilation equipment. The specifics of the work of public catering enterprises is associated with a large release of thermal energy, the presence of fats and odors in the air, while it is necessary to ensure standardized values of air flow and oxygen supply to places of permanent residence of workers. The structure of the ventilation systems in food preparation areas is branched and energy-intensive, with the presence of filtration and air conditioning systems. According to the authors of the article, in order to reduce energy costs and increase the efficiency of ventilation systems, it is necessary to use modern automation tools based on the use of programmable logic controllers.*

Keywords: *heat emission, air exchange, infrared heating elements, energy efficiency, microclimate, ventilation, working conditions*