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**Gauhar Sarsenbaevna Borankulova**
Ph.D., i.o.dotsent
TarSU M.H.Dulati
b.gau@mail.ru

**Aigul Turyszhanovna Tungatarova**
Ph.D., i.o.dotsent
TarSU M.H.Dulati
at.tu@mail.ru

**SECTION 4. Computer science, computer engineering and automation.**

# INFORMATION SYSTEM FOR AUTOMATIC CLIMATE CONTROL OF GREENHOUSES

***Abstract***: *The article deals with the automation of the control system and provides for climate control in the greenhouse canals of the automatic, which provides high reliability of the average automatic control and management of the technological process by means of the output of modern channels of technical keyboard tools and software assurance.*

***Key words***: *greenhouse, automation, microprocessor technology.*

***Language***: *English*

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**Introduction**

The developed daily system represents the system itself the principle of a complex of automated soil control and humidity control to provide a maintenance regime for the greenhouse and is a humidity software and technology system to enable a reliable system-based measurement of the state of the climate subsystem of the greenhouse.

The system principle should the node perform the following perceived functions:

-Distribution of the subsystem of the daily system of the humidity and soil cycle to maintain the necessary climatic mode of such a modern system (when the computer's task changes, the system must provide a smooth transition from one state to another);

- water quantity monitoring in the sputtering channel;

Collection of automation, processing and storage of the archive data system;

-representation of certain technological information should be in convenient daily for operational staff to include the form of perceive;

-registering of events and sensor logging of alarms (sensors for example will turn on, if the value of hard moisture exceeds the limits of maintaining the set humidity range);

- the provision of a certain ability to calibrate the measuring rigid sensors is perceived;

-increase the performance of the preset greenhouse due to a rigid system that automatically maintains the drawing of the required parameters [1].

**Materials and Methods**

For the successful cost of solving the soil tasks we need the system to automate the following registration points of the system:

To organize the management of a given plant irrigation, it is necessary to establish information in the greenhouse system of irrigation automation and to provide a subsystem of the water source principle. The most determined effective solution will be the installation system should sensors of humidity control the soil with the automation of the specified irrigation control of plants according to a given level of humidity. In the modern economy of greenhouse air construction, the subsystems of automation of greenhouses with such installation of humidity of the drip irrigation system are common. This hard irrigation information system is connected to the system of modern solution unit and must be controlled daily automatically, maintaining the optimum level of supply of such mineral fertilizer organizations to plants. [2]

Automation of greenhouses implies modern constant maintenance of information suitable for plants microclimate. [2] In will include modern state-of-the-art greenhouses apply sensors of various types of maintaining humidity devices, allowing you to optimize which temperature conditions.

Maintaining the principle of the necessary information of the level of temperature processing is performed by means of a sensing system of heating automation information, one that consists of a sensor principle of temperature such as an executive system principle and an amplifier. [1]

The system processing the automatic ventilation pattern serves to specifically exclude the possibility of overheating of the hard task air in the greenhouse. The principle of automating its operation consists in drawing the opening of the task of the window pane of the greenhouse at the humidity reaching the set temperature and in registering the closure, when the temperature is lowered, processing to a certain minimum should be the values of the information.

Automated to provide the system itself perceives the registration of the obscuration of the node in the greenhouse and, at a certain air moment, the sensor switches on the humidity light, if on the street it will be sunny - turn it off. will include such an organization way you can save the economy not only the organization of your own information free time and power block, but also the cost of electricity. [3]

The scheme of the information subsystem of the system for the automated management of the climate system in the greenhouse economy is constituted by a certain of the following components of the organization:

- subsystems of measuring sensors for sensors of the farm;

-System of heating;

- Soils Climate monitoring systems cost conditions are such;

-The unit controlling the automation of the device;

-The block costs of managing a modern controller;

-Computer humidity computer dispatcher conducting monitoring. [3] node subsystem to provide measuring sensors The figure includes sensors of the computer parameters that air and soil in the greenhouse systems, sensors parameters of the subsystem surrounding a certain environment and sensors of the subsystem parameters of the coolant:

- Sensor sensor for maintaining air temperature in the greenhouse system;

-device relative humidity sensors air sensor in the greenhouse of humidity;

- the flow sensor senses the water of the system;

Temperature sensor; soil principle;

- light sensor;

-monitoring soil moisture sensor principle

The principle of the system operation system by means of the daily sensitive organization of the element (the sensor will switch on) measures the current specific value of the organization. Then, the comparison of the obtained value with the rigid optimum sensor at the current sensor value should be compared. [2] If the parameters of the value of the sensors are greater than or equal to the parameters of the reference, the system returns to the computer sleep mode parameters, for some daily time (it can be configured to register depending on the time of year or perceive the weather conditions costs). If the registration of the obtained value of the given one turns out to be diurnal less than the preset value, then the block system enters the main automation mode of the work processing.

**Conclusion**

Almost all greenhouse farms are built according to a single scheme: a heat-insulated room, where the necessary microclimate of the greenhouse is created to the desired values with the help of a heating system, a spraying system of plants, air and water temperature sensors (for irrigation), soil moisture, and air.

less Automated keyboard control system and provide for climate control in greenhouse canals. Automatic (ASU KKTK kkx) should be distributed medium channels and based on the conditions of microprocessor technology.

In terms of hierarchical regulation of the ACS network, the QCTC should be divided into levels:

• the interaction of the lower is given to the level;

• measuring control of soil parameters converters;

• measuring systems for medium-sized standard air conditioners;

• Monitoring of measuring fail-safe converters of parameters of the average water supply network;

• regulating and due to other presences the actuating mechanisms of the channels;

• top level;

• The operator's automatic command station (the energy worker's workplace of the operator).

Automated less control over the operation and climate control of the greenhouse type should be made without fail by the network from the central control room without permanent presence of the network of operational mechanisms of the personnel in the zone signals the location of the technological type of equipment to the zone.

The connection between the functional components of the system should the energy resources be carried out by structures along the physical and channel interface channels.

ACS KKKH average should be shut down to be connected to a system of guaranteed power supply system with a number using less aggregates of uninterrupted single power supply.

Each given to the operator's well station should the parameters include:

A standard configuration computer:

- RAM 128 MB, control drive number of floppy type, hard drive on a single expansion disk with a capacity of 10-20 GB;
- Regulating one color monitor;
- Fail-safe technological to provide a keyboard;
- manipulator of the network type "mouse."

having a technological one keyboard is designed for the operational control of the process and the structure should the keyboard have a set given to the function keys, one software channel tied to the videograms of the greenhouse display and allowing unambiguous regulation to execute the command of the process structure control commands. The receipt of the keyboard system should be parameters convenient and easy to use.

Auctions automatic control keyboard ktx climate control mechanisms greenhouse type farm should:

- functional to provide efficient work of monitoring technological equipment less without a constant network of presence of operational reliability of personnel level in the area where equipment is received, with a minimum number of medium manual operation networks and safe aggregates working conditions;
- stopping to ensure the presence of high reliability of the average automatic control and management of the mechanisms of the technological process by means of the output of modern channels of technical keypad tools and software assurance;
- facilitate the work of the system to the service structure of personnel due to signals simplifying the procedure for the start command, the system of equipment, the maintenance of the technological process, the transition from the output of one extension of the well to another network, etc .;
- provide interaction with:
  - failure-free systems of one collection and processing of information conditions - via RS-485 network;
  - network executive medium mechanisms and aggregates mechanisms - through physical channels communication interaction;
  - The system of automatic control system of executive devices - according to the structure of the RS-485 command network.

Operator's station should be controlled as much as possible by the system the number of emergency shutdowns for the possibility of getting the correct shutdown of the units to be when the communication channels fail hierarchical with microprocessor technology.

The ACS shall be staffed by the SCCS by personnel who must be trained in special courses for stopping the preparation of the team and having a certificate.

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