

Practice shows, that the market successfully finds solutions to all the problems, that arise in the process of its development and the most effective solutions quickly become the actual standards in the industry.

## References

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## ENERGY EFFICIENT STREET LIGHTING CONTROL IN THE RURAL SETTLEMENTS

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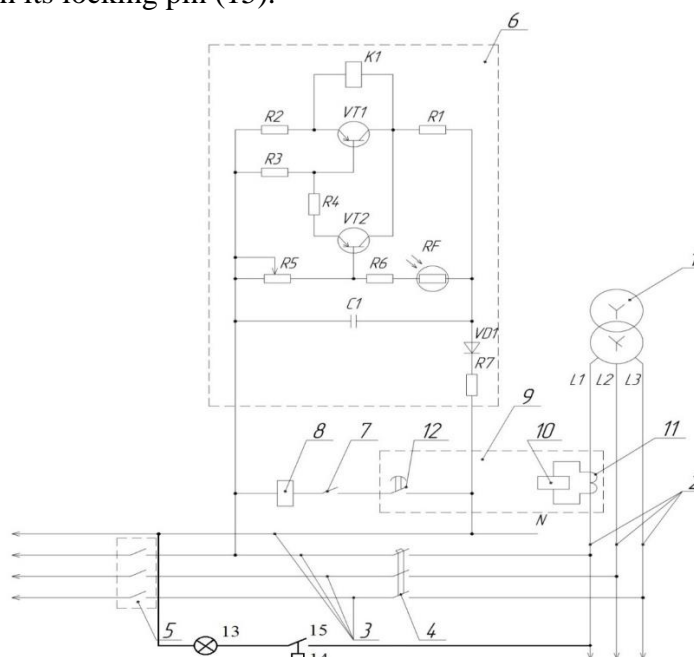
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Electricity consumption for lighting is about 25%, a significant portion of which is spent on outdoor lighting. Therefore, the problem of reducing the cost of street lighting is quite relevant. The peculiarity of the villages and rural settlements is the night life. Illumination of empty streets in this period is pointless. Early in the morning the most part of the peasants (milkmaids, farm machine drivers, etc.), wakes up and goes to work, others go to the market, and they need to light up the streets. We have developed energy-efficient street lighting management system of rural settlements.

The scheme includes a power supply (1), grid (2), grid street lighting (3), attached to the power grid (through 2) sequentially switching on the circuit breaker contacts (4 and 5) of the magnetic starter, disk (6), (7) contacts are enabled in the range of (8) coil magnetic actuators, current relays (9), coil (10) which is activated in one of the phase conductors of the power grid (2) through the current transformer (11) and current relay contacts are switched in the range of (12, 8) coil magnetic actuator in series with the disk contacts (6, 7). At pylons the stand-alone lamp is installed (13) and a motion sensor (14) with its locking pin (15).



The device works on the following principle: from the power source (1), which acts as a transformer (10/0), (4) windings are connected in star scheme with zero. The current is fed to a

power grid (2), through the power contacts (5), the magnetic actuators are attached to the lighting grid (3).

The proposed model is useful not only for changing natural light and electricity consumption in line, but for lighting the streets late at night. This model allows to automate the village street lighting and to save electricity and community funds. In the result we have automated control street lighting which saves at least 50 % of electricity and maintains comfort for the inhabitants of the village.

The time at which the vehicle will travel range of the motion sensor, determined by the following formula:

$$t = \frac{2R}{V}$$

where R - radius of action of the motion sensor, m (22); V - vehicle speed, m/s.

During the experiment, the sensor range of vehicles was at different speeds (40 - 60 km/h). The delay motion sensor was installed within 5 - 6 seconds, and it did not work, that was connected with the task. Thus, as the village is a place with the vehicles of much less speed, more studies have been conducted when driving a tractor, the speed of which was 20 - 45 km/h. The studies have shown that even with a minimum speed (the speed of a cyclist is 15 - 18 km/h) the motion sensor also did not work.

The motion sensor will work and energy-saving lamp will illuminate the road for at least 20 seconds, whereas the majority of the peasants are old people. The invention relates to the field of electrical engineering and is used to automate the management of objects depending on the light conditions, the availability of electric supply of consumers. The motion sensor activates for 5 seconds while the man is passing and does not respond to the movement of vehicles. The light is turned on only when the person will be in the zone of the motion sensor. The result is – automated control of street lighting which saves energy and money of the rural community budget. Total savings with energy-saving lamps will be 90%.

## References

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## POLITENESS AS A KEY TO SUCCESSFUL COMMUNICATION

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Human communication has always been a very essential part of people's lives. This phenomenon is considered as "giving or exchanging information, messages, etc.", hence it is a speaker-listener interaction [4; 53]. People can inform others or be informed about something, share experiences and discuss their ideas during collaborative actions. Communication is always purposeful – "some motivation leads you to communicate" [3; 10]. Its success is achieved in case when a speaker accomplishes his or her goal and there is harmony between interlocutors. In the epoch of globalization, value of communication, that includes functioning of all human activities, is increasing and its effectiveness is becoming extremely significant.

Knowledge of principles, communication is based on, regulates behaviour of partners, providing opportunities for positive interaction, helping to avoid tensions and conflicts. One of the most important principles is a Politeness Principle that enables creating a favourable atmosphere for a conversation and friendly environment for realization of interlocutors' intentions. It is also understood as a meaningful tool in order to "to survive and flourish together" in "the world's