УДК 811.111:004.318

EXPLOITATION OF AUTOMATED ELECTRIC DRIVES

student Grebenko A.D.
scientific supervisor –lecturer Dzerhachova A.A.
Belarusian National University of Technology
Minsk, Belarus

Electric drives in general

Electric drives are primarily necessary to control the speed, torque and direction of movement of moving objects. They are mainly used to control the speed and movement of various objects, such as cars, vehicles, robots and fans. If we consider drives from the point of view of speed classification, then there are two types of electric drives: with constant speed and with variable speed.

Constant speed drives are the simplest type of electric drive and are less efficient when it is necessary to change the speed, in this case variable speed drives are used to control loads of any magnitude over a wide range of speeds.

Variable speed drives require precise and continuous control of speed, position and torque for various loads. In addition to these advantages, there are many other reasons for using variable frequency drives. These reasons include Achieving high efficiency: electric drives can use a wide range of power, from MW to MW for different speed values.

As a result, the total cost of operating the system can be reduced. To improve the accuracy of stopping and the speed of reversing the engine. To control the inrush current To provide protection For the organization of complex control systems with different temperatures, pressures and other parameters. Advances in high-power electronics, microprocessors and digital electronics are leading to the emergence of modern electric drives that are more compact, efficient, cheaper and more efficient than bulky, inflexible and expensive

traditional electric drive systems that organize variable speeds in a multi-motor configuration.

Revolutionizing the industry

In a word, automated electric drives revolutionize the industry, providing a high level of accuracy, efficiency and reliability. Automated electric drives change the way machines work, making them more stable and productive. As technology develops, we can expect the emergence of new innovative applications of automated electric drives in a wide variety of industries.

With the development of technology, automated electric drives will become even more efficient, reliable and economical. As the world moves to more sustainable energy sources, the demand for electric drives in solar and wind energy systems will grow. Electric drives can optimize the operation of these systems, increasing their efficiency and reliability. Another expected area of growth for automated electric drives is robotics. With the growth of automation, robotics is becoming increasingly important in various industries, from manufacturing to healthcare. In addition, automated electric drives are expected to play an important role in the development of self-driving cars. Electric drives are already used in electric vehicles, and it is expected that their importance will only increase with the development of autonomous driving technology. Electric drives can provide the precise control needed for safe and efficient navigation in self-driving cars. In a word, the future of electric drives for autonomous driving is very rosy. They are expected to play an important role in a wide variety of industries, from renewable energy to robotics and self-driving cars. As the technology evolves, new innovative applications of electric drives for autonomous driving are expected to emerge, leading to a further transformation of the industry.