

- Датчики тока;
- Датчики напряжения;
- Датчики освещенности;
- Пульт водителя;
- Педали управления;
- Датчики угла поворота руля, и др.

Далее информация оцифровывается, обрабатывается и участвует в общем алгоритме работы электромобиля.

По общей CAN шине передача и обмен информацией производится между контролерами. При обнаружении контроллером нужного пакета информации, данные из шины обрабатываются и могут обмениваться между системами далее.

Комплексный централизованный контроль дает и другие возможные преимущества, например расширение бортовой диагностики (OBD) для контроля над транспортным средством в целом, что потенциально экономит время ремонта и эксплуатационные расходы.

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AUTOMATIC CONTROL SYSTEM OF ELECTRIC DRIVE OF THE GRINDING MACHINE FOR BAND SAWS

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The preservation and development of machine-tool production in the Republic of Belarus, which determines the level of development of productive forces and affects material and labor costs in industry, is one of the important factors in ensuring the economic security of the country.

In modern flexible structure production and developing small and medium-sized businesses, more and more attention is paid to the production of small-

scale products for machine tool and instrument making, the competitiveness of which can be ensured by creating new high-tech products, the structural elements of which are band saws.

Every enterprise has problems with proper sharpening and preparation of wood-cutting tools. After all, the quality of processing of all parts and the productivity of the equipment directly depend on what tool is used, and on how it is sharpened.

Based on the foregoing, the topic of the work is relevant.

The aim of the work is to improve the methods for calculating automatic motor control systems in order to obtain mechanical characteristics close to the constant power line, which will ensure reliable operation of the drying chamber.

Universal sharpening machine OS-2M (fig. 1) is designed for sharpening frame saws, and in case of installing additional equipment, sharpening circular saws and wide band saws.



Fig. 1. Universal sharpening machine OS-2M

The OS-2M is capable of sharpening frame saws with a width of 70 to 180 mm, circular saws with a diameter of 250 to 900 mm (optional up to 1200 mm), as well as wide band saws with a width of 70 to 240 mm and a length of up to 5.6 m (optional up to 12 m when using additional support rails).

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The sharpening machine allows you to sharpen various shapes of saw teeth - triangular, broken, hook-shaped, convex.

Tool sharpening occurs in semi-automatic mode. The machine operator adjusts the machine to the required tool parameters, sharpening angles, brings

the grinding wheel and turns on the feed, then the entire saw sharpening cycle occurs automatically.

The OS-2M grinding machine has a smooth adjustment of the grinding wheel stroke to adjust the height of the tooth, as well as an adjustment of the pusher stroke to set the tooth pitch.

Smooth adjustment of the step of the pusher allows you to speed up or slow down the feed of the tooth in relation to the grinding wheel.

The machine is equipped with an exhaust fan for removing abrasive dust and an outlet pipe with a diameter of 100 mm.

Additional options:

- Support rails for band saws up to 12 m long;
- Additional guide for band saws longer than 5.6 m;
- Second follower cam tool (pusher) for saws over 10 m;
- Infinitely adjustable feed rate;
- Teeth sharpening counter, cycles.

In accordance with the task for the research work, it was necessary to design an automatic control system for the electric drive of a sharpening machine for OS-2M band saws.

During the design, the design of the grinding machine was studied, the analysis of the technological process of rough and fine sharpening was carried out.

A literature review on the topic of the project was carried out, requirements for the designed electric drive were formulated and a functional diagram of the electric drive was developed.

The selection of the motor with subsequent checks of its heating and overload capacity confirmed the correctness of using an asynchronous motor with a squirrel-cage rotor of the AMP80S4 type with a power of 2 kW in the electric drive.

In the projected electric drive of the band saw grinder, a frequency converter of the FR-A740-00770-EC type with two-zone vector control and current and speed feedback is used.

The conducted simulation of the electric drive confirmed the correctness of the calculation of the regulators of the automatic control system.

The automation of the electric drive based on the programmable controller FX3G-24M was carried out.

The advantage of using the FC-IM electric drive system in comparison with the electric drive based on an unregulated asynchronous motor is economically justified.

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AUTOMATIC CONTROL SYSTEM OF ELECTRIC DRIVE OF THE BLOWER OF DRYING CHAMBER

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The growing worldwide trend towards the development of technologies and measures that ensure the efficient use of energy resources, as well as the increasing requirements for the environmental friendliness of building materials and products, lead to the increasing use of wood as an alternative source of raw materials in the production of building materials and products.

In addition to the environmental friendliness and manufacturability of wood, which allow it to be used in low-rise construction and the construction of spatial structures, the advantages of wood as a material should also include the replenishment of the resource base.

Energy consumption for the processing of wood raw materials and the manufacture of structures is 8-10 times lower than when working with metal material, and 3-4 times - with reinforced concrete.

Wooden products are widely used in the construction of civil, administrative and industrial buildings according to various design schemes, including spatial ones.

Modern technologies for the production of building materials and wood products make it possible to achieve high levels of stability of their shape and size. Existing weather-resistant bioprotective compositions allow wood to compete on equal terms with steel and reinforced concrete structures. Often, building materials and wood products benefit from lower production costs.

The primary type of raw material in woodworking is large assortments from logging industries - sawlogs, sleepers, pulpwood, firewood, etc., on the basis of