PERFORMANCE IMPROVEMENT STUDY BY CONTROLLING THE SPEED OF CONVEYOR TRANSPORT THROUGH SENSORS

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Most of the conveyor transport, which is now used in mining conditions and manufacturing enterprises, works in an electromechanical switch system, which allows it to have a low coefficient of useful work as well as mechanical friction strengththe reason is that the mechanism has a low operating life and an increase in repair costs.

In addition, the device is very complex in structure, the principle of its operation is completely incompatible with the standards for the use of modern energy resources. In the control of conveyor transport, additional resistance is applied by connecting. In this case, the useful work coefficient of conveyor transport will not be higher than 60÷65%. It will be known that the energy efficiency from these indicators is low.

In a conveyor transport transducer system, the electricity received from the grid is initially fed to the frequency transducer and first converted to a fixed current of f=0, and the frequency is changed in proportion to the voltage based on the U/f=const condition.

Taking into account the heating of semiconductor materials involved in this process, waste in diodes and energy wastes in additional resistances, we can observe that the useful work factor of this system will be a very high indicator.

By replacing the conveyor transport electric drive system with a new type system, the following advantages can be achieved: high percentage useful work up to 84%, convenient control, ease of repair and simplification, the ability to smoothly and linearly change the speed.

Conveyor transport, a type of cargo-carrying multi-use transport. Conveyor transport is part of the heavy-start mechanism that is part of the electromechanical equipment. The main working device in the automation of conveyor transport is a reverse-contact sensor.

Comparing the thyristor Switch system and the pointers in an electromechanical system, it can be seen that the energy efficient pointers in a thyristor device will be higher. There are moments of resistance to electric traction of conveyor transport.

These are also taken into account: the Working Mechanism, the moment of resistance generated in friction and the moments of resistance that depend on the mass of the load at which the load is increased. The moment dynamic to the movement of the conveyor transport is the moment of greatest resistance.

By automating the launch of conveyor transport, it is possible to limit the launch current and enable linear launch

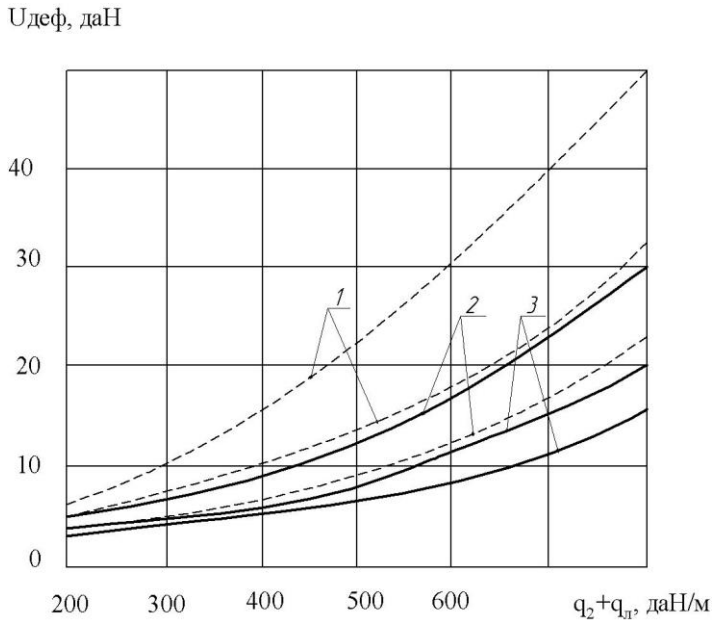

Figure 1: Conveyor transport voltage resistance moment dependence graph U=f (N / M)

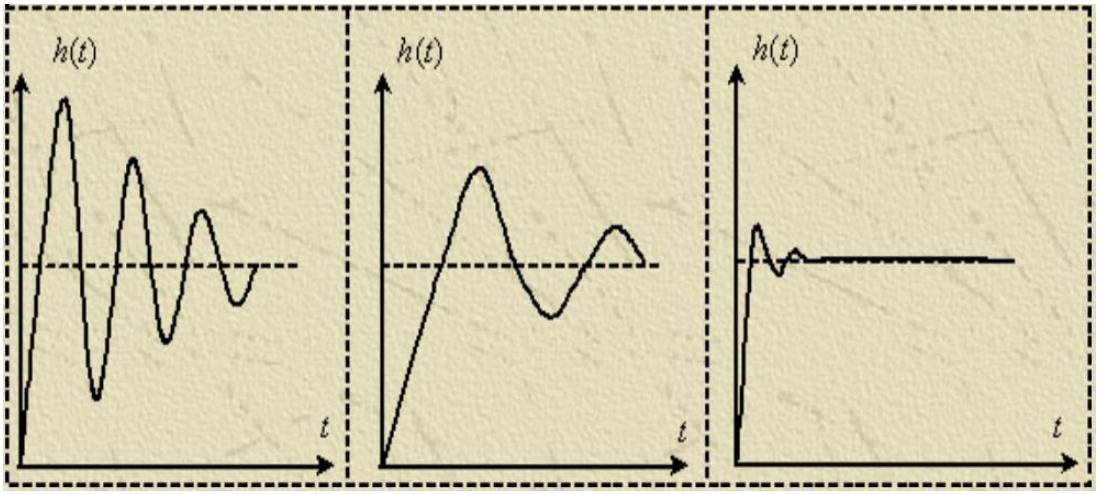

Figure 2: Time dependence graph of the current force in the transient process of electrical conduction

There have been three different methods of operation current experiments.

1-Direct

2-by connecting additional resistance

3-launch via reverse Link sensor

The direct launch method is not considered effective for application on conveyors mounted in a sloping position. In this case, it will be advisable to start the conductor by connecting additional resistors.

Energy pointers	Conveyor transport control systems	
	Control by connecting additional resistance	Control by reverse contact sensor tool
General useful work coefficient in mechanisms and proceedings %	65	84
Power factor, cosϕ	0.86	0,9
Launch current coefficient Ki	2.3÷3	1.1÷1.3
Start time	2÷2.5	2.7÷3

Regardless of the method of their launch, uninterrupted control of the change in the technological process in the process of work and control of the power of the electric drive on this basis will help to achieve greater productivity and energy efficiency.

In the case of conveyor transport at load and without load, the nominal power and speed of the electric conductor leads to excess energy loss. Using feedback sensors, we can ensure that the electrical conductor is used in optimal parameters by connecting changes in the technological process with the electrical conductor control system.

This method is an all-round modern, economical and energy-efficient method, which, by maintaining its optimal parameters, sets the stage for a long service of electrical drives and technological devices.

By introducing modern technologies into the production processes, not only to greater efficiency and energy efficiency, but also production ja

LaseTVM systems are high precision 3D laser measurement systems to measure the load capacity of trucks automatically or while standing in transit. Measurement systems are very versatile and are used to measure the volume of a wide range of materials, such as stone, sand, ore or wood products. SENMAX Truck Volume Measurement is a very precise three-dimensional measurement system, specifically designed to measure truck loading volumes. The contactless volumetric load measurement scanner uses the latest laser scanning technology. it effectively scans and measures loads on moving open type trucks with high precision.

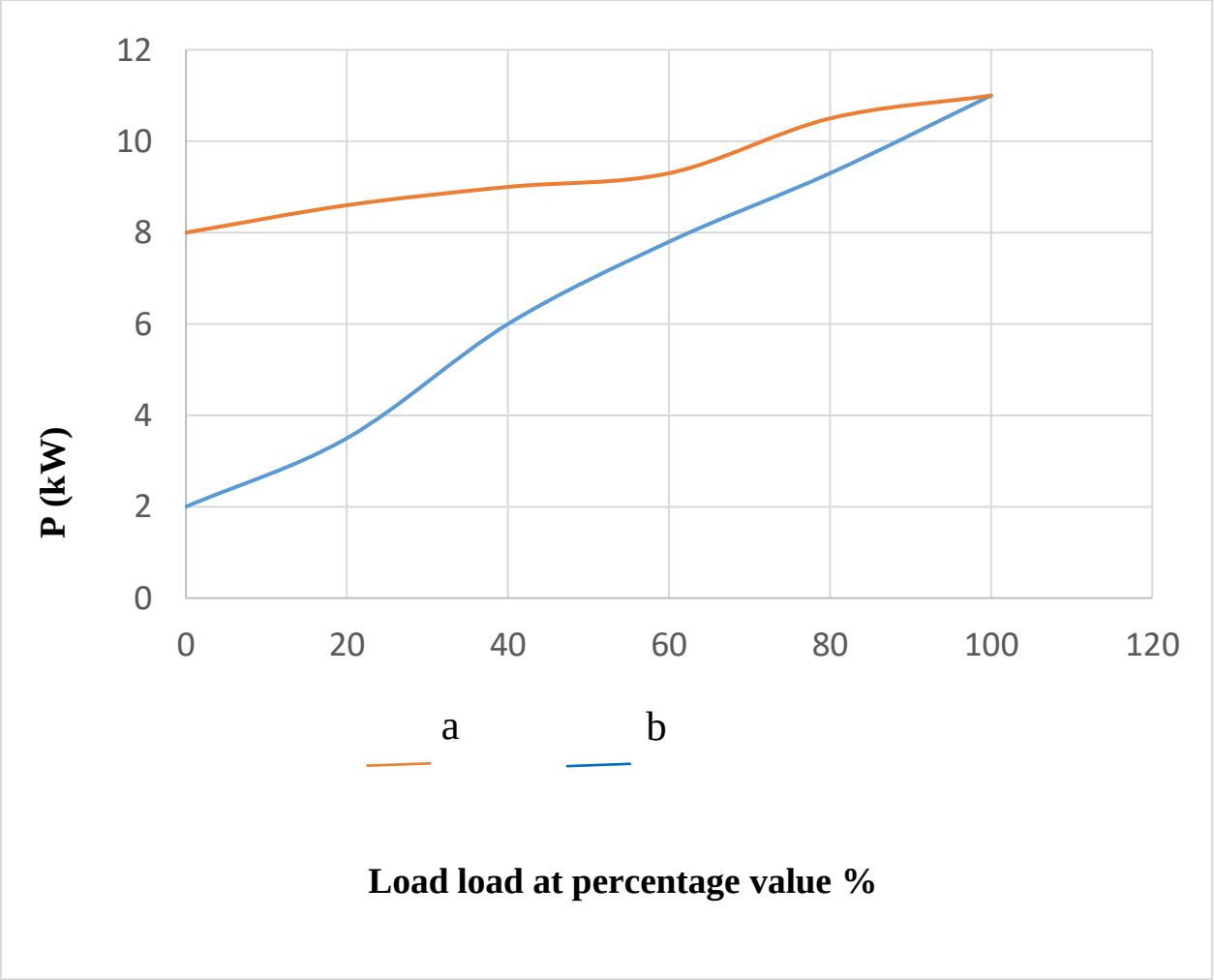

Figure 3: Electric energy efficiency

Its intelligent algorithm produces real-time load capacity and creates a report on the load capacity in each truck. The scanner body is mounted on a high pole at the edge of the highway, without stopping the vehicle at constant speed below the truck's scanner body the sensor scans the loaded car profile and compares it to the scanned profile of an empty car. The difference between the two profiles is calculated as the actual load carried by the car.

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