



MODERNISATION OF SP251 CONVEYOR ENABLES MINIMISATION OF CONVEYOR DOWNTIME

At the request of miners from the Dniprovskia mine (DTEK Energo), Corum specialists increased the power and automated the control of the SP251 armoured face conveyor, in keeping with the recent trend of digitalisation.

To automate the conveyor control system, the Corum Group developed a design. It provided for the integration of electric motors with a built-in frequency converter into the drive of the SP251 conveyor and a mine controller that allows controlling the speed of the face conveyor depending on the load on the shearer. The introduction of electric motors with embedded frequency converters into the conveyor equipment made it possible to increase its power from 400 to 500 kW.

The developers managed to bring to zero the conveyor's downtime associated with the need for degumming in case of an unplanned shearer shutdown. Cases of chain breaks have also become rare. This led to an increase in the machine time of the conveyor operation as a whole.

Another undoubted advantage is that the metal construction of the drive was left unchanged specifically for the customer in order to unify the equipment. Thus, the customer can install a new sample drive in any other existing conveyor – e.g. during an overhaul.

The new Corum technology allowed miners to increase production by 25% in peak moments. The maximum speed of movement of the traction body of the conveyor chain has increased from 1.36 to 1.63 meters per second. And the peak performance increased from 460 to 625 tonnes per hour. This is the maximum throughput of the upgraded SP251 conveyor. The operational tests lasted three months and were successfully completed in March 2019.



Client feedback



Vadim DUDCHENKO

Chief Mechanic
of the Dneprovskoe Mine Group,
DTEK Pavlogradgol

“ In spring 2019, we completed testing of the SP251 conveyor with a frequency converter and KD-A-EE shearer control equipment. The new equipment makes it possible to smoothly start the conveyor loaded with coal after an unplanned shearer shutdown. Thanks to the SP251 conveyor with a frequency converter, the downtime of longwall over three months was reduced by 12 hours. Qualitative changes in the operation of equipment are noticeable even now. Without a doubt, the introduction of a frequency converter is a progressive step towards more productive coal mining and improving the energy efficiency of the enterprise.

