

Energy-efficient centrifuges at Falkenberg treatment plant

A case study from Emotron





When Falkenberg treatment plant invested in new equipment for dewatering sludge, they chose decanter centrifuges from Noxon controlled by Emotron VFX variable speed drives. Operational electrician Tomas Bjurklint is happy with the cost-effective solution, with the energy generated by the braking motor being re-used by the drive motor.

When Falkenberg treatment plant invested in new decanter centrifuges, Emotron variable speed drives were chosen for control. This was one of the first times that manufacturer Noxon had used Emotron VFX in its solution, with the energy generated by the braking motor being re-used by the driving motor. More new projects are now being planned.

Emotron as standard in operation of electric motors
Falkenberg Municipality has been using Emotron products as standard for several years now to protect and control operation of its electric motors in treatment plants, water purification plants and pumping stations. Operational electrician Tomas Bjurklint sees major benefits with the company's shaft power monitors, softstarters and variable speed drives.

"We value the user-friendliness above all. The control panel makes it easy for operators to monitor and adjust operating parameters. In addition, we always receive excellent support if any problems arise. That is essential in order to minimise downtime."

Cover photo: Falkenberg treatment plant uses Emotron variable speed drives to control pumps and centrifuges, among other things.

New decanter centrifuges for dewatering sludge

When Falkenberg treatment plant invested in a new solution for dewatering sludge, they chose two decanter centrifuges from Noxon, a Swedish company with its own development, design and manufacturing resources and customers primarily in Europe and Asia.

A decanter centrifuge consists of a drum and a screw conveyor that rotate independently of each other at up to 3,600 rpm, depending on machine and sludge type. The sludge is fed into a mixing chamber where polymer is added so that the sludge flocculates. Dewatering is achieved through the sludge being flung out through holes against the outer walls of the drum. The dewatered sludge is transported out by means of the screw conveyor.

Emotron variable speed drives requested

When placing their order, Falkenberg Municipality requested that Emotron variable speed drives be used for control. This was a new experience for both parties. The municipality had previously only used the Emotron FDU



Falkenberg Municipality uses Emotron's products as standard for operation of electric motors. "Above all, we value the user-friendliness and the fact that we receive excellent support if any problems arise," says operational electrician Tomas Bjurklint.

for regulation of pressure and flow, but an Emotron VFX was now required, which has been developed for this type of dynamic application. Noxon had always used a different make as standard for its centrifuges and had never tested Emotron. Because the process uses two electric motors, one driving and one braking, it required an efficient solution without brake resistors.

Braking energy re-used by the drive motor

Two Emotron VFX variable speed drives of 37 kW and 11 kW respectively control the two electric motors that power the drum and brake the screw conveyor so that it maintains a suitable speed. When braking, so-called generative operation, energy is generated that is normally converted into heat and dissipated via brake resistors. Noxon's solution re-uses the energy instead. Thanks to the two variable speed drives being interconnected via a common DC-link, the braking motor's energy is fed directly to the driving motor. The requirement for energy from the mains is reduced and the cost of brake resistors is saved.

More centrifuges with Emotron VFX

Falkenberg treatment plant was one of the first installations where Emotron variable speed drives were used for such energy-efficient control of Noxon's decanter centrifuges. The positive experience here has resulted in the solution being implemented for other customers, and more new projects are planned.

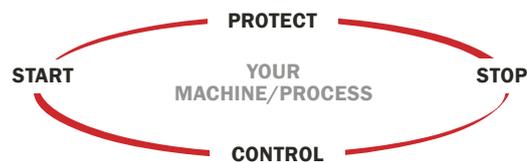
Dedicated drive

Emotron develops products for starting, protecting, controlling and stopping machines and processes driven by electric motors. Our drive is to create measurable benefits for our customers through reliable, cost-efficient and user-friendly solutions. By focusing on selected applications, such as pumps, cranes and lifts, we can offer functionality optimized for specific needs.

Since 1975 we have established a solid position as an innovative and pioneering company. Research and development takes place at our head office in Sweden and at our subsidiaries in Germany and the Netherlands. Germany is also the location for the Emotron technical centres for lift and crane solutions. We have sales offices in Sweden, Germany, the Netherlands, China and Latin America, as well as a worldwide network of authorized service partners.



Products for your specific needs



Our complete product portfolio offers optimum solutions for your specific needs. The products are all based on the same technology platform and can easily be integrated in complete solutions. Wide power range, high protection class and compliance with global standards mean they fulfil the highest demands.

- *Shaft power monitors* – protect your process from damage and unplanned downtime.
- *Softstarters* – ensure smooth starts and safe stops.
- *Variable speed drives* – minimize energy consumption and wear.



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