

## Water levelling with fish friendly pump and Emotron VFD feeding energy straight back to the grid

The Krimpenerwaard pumping station contributes to dry feet and sufficient water for more than 50,000 people in the Netherlands.

As the Schieland and Krimpenerwaard water board needed to replace the pump in Lekdijk-West in Bergambacht they found the ideal solution using a fish-friendly pump with a permanent magnet electric motor and Emotron AFE variable speed drive feeding generated energy directly back to the grid.



*The generated energy is fed back to the grid via the Emotron AFE (Active front end) variable frequency drive VFXR 2.1.*

### Emotron VFD for important water levelling point

The pump station is the most important water inlet of the Krimpenerwaard. Fresh water is brought in from the river Lek to keep the water level in times of drought on the one hand and to flush the water level section and provide it with better quality water on the other.

The fish-friendly pump is run by a permanent magnet electric motor and Emotron AFE variable frequency drive (VFD). The Emotron VFXR 2.1 makes it possible to capture a running PM motor.

### Solution for fish migration

The pump was primarily remodeled to solve a fish migration bottleneck. 1 of the 2 existing pumps was replaced by a pump where the concrete casing was replaced by a pump block of a larger size. The pump has a capacity of 200m<sup>3</sup> per minute and drains a large part of the Krimpenerwaard.

After completion, the pump was tested for fish safety for both draining and turbine operation. The pump has proved to be very fish-safe for both draining and turbinning.

### Generating energy

The new pumping station is also designed as a turbine in which water is admitted through the pump to generate energy. With an average water level, a capacity of approx. 21 kW is released, with a drop of approximately 2.3 m. At higher water levels, the amount of generated power can reach up to 63kW.

### Feeding energy straight back to the grid

The generated energy is fed back to the grid via the Emotron AFE (Active front end) variable frequency drive VFXR 2.1. Due to the full 4-quadrant control in the VFXR drive, the motor speed is fully controlled, after which the AFE feeds the released energy back into the electricity grid.

The pump shaft is thereby braked by the VFD during the intake of water. This makes it a controlled process with adjustable speed level.



*Emtotron VFXR 2.1 AFE in cabinet build*



### Worldwide service network

With a worldwide partner network and remote access solutions, we can offer service contracts to fit your needs. The complete service offer includes:

- ✓ Commissioning
- ✓ Training
- ✓ Test facilities
- ✓ 24/7 support
- ✓ Remote access
- ✓ Application diagnostics
- ✓ Maintenance
- ✓ Extended warranty
- ✓ Repairs
- ✓ Rentals



### Quality assurance

At Emotron, expert knowledge is always at your fingertips. Your Water & Wastewater project team will follow you every step of the way. We manage a design review followed by an in-house survey when necessary and have well-established contacts with all the major certifying bodies.

We test all of your components individually before commissioning, for your peace of mind.

*We put all our energy into saving yours.*



**CG Drives & Automation Sweden AB**

Headquarters:  
Mörsaregatan 12  
Box 222 25  
SE-250 24 Helsingborg  
Sweden

Phone: +46 42 16 99 00  
[info.se@cglobal.com](mailto:info.se@cglobal.com)

To find your local Emotron contact, please visit [www.emotron.com](http://www.emotron.com)

**emotron**

**DEDICATED DRIVE**



**A CG Product**