

Flygt SmartRun™ keeps control of the costs

A measure of pump station efficiency

Built in 2006, the Sigtuna pump station has two Flygt N 3153 HT pumps, originally started via soft starters. Long-term testing has indicated that the station has an inflow of approximately 65000m³/year.

There are generally two types of controls for wastewater pumping systems. Conventional on/off controls, which are simple to use but give limited opportunities to optimize functionality; and variable frequency drives (VFD) which provide more fine-tuning possibilities but can be complicated to install and difficult to optimize.

In 2011, Xylem installed Flygt SmartRun pump controller on each pump in the Sigtuna station. Flygt SmartRun is designed to always search for a duty point which minimizes the friction losses and maximizes the efficiency of the pump. It combines the simplicity of conventional on/off control with the advanced functionality of a variable frequency drive (VFD).

“We compared energy consumption for the Sigtuna pump station with and without Flygt SmartRun. The savings with Flygt SmartRun is as much as 30%.”

Built-in intelligence

With Flygt SmartRun, impeller speed is steadily secured to the minimal energy level without the use of a flow meter or any other external measurement equipment. All the parameters have been pre-programmed - Flygt SmartRun does all the work, based on more than 50 years of Flygt application experience.

Efficiency gains

A measure of pump station efficiency is the amount of energy required to transport a specific volume of fluid, specific energy kWh/m³. With this in mind, reducing frequency via the VFD gives also a reduction in friction losses which can achieve considerable energy savings.



Customer: Municipality in Sigtuna, Sweden

Challenge: Optimal efficiency with VFD

Products: Flygt SmartRun control with Flygt N 3153 HT pump

Benefits: 30% savings on energy use

Flygt SmartRun is one of the three key components of Flygt Experi[®] which combines state-of-the-art hydraulics, premium efficiency motors and intelligent controls for the ultimate in reliability, efficiency and simplicity.

To prove the point, Sigtuna put its installation to the test. Specific energy was calculated by measuring consumed energy and pumped liquid volume between discrete points in time, before the installation of Flygt SmartRun and after, and then projected for a year's consumption.

Average specific energy before and after the installation has been determined to 0,113 kWh/m³ and 0,079 kWh/m³ respectively, which represents a savings of 30%. During this time, Flygt SmartRun self adjusted down to a minimum frequency of 37Hz.

Smother operations

Whether it's for a small or large station, or an entire treatment plant, energy consumption is an important consideration. The less, the better, providing savings on costs as well as the environment.

“We know we can trust Flygt for innovative solutions and exceptional service – tailored to our demand.”

In addition to energy savings, Flygt SmartRun enables a simpler and easier operation. Minimal effort is required for start-up. Pre-programmed features for pump, sump and pipe cleaning help to reduce maintenance.

Grease deposits, for example, on pumps and on the sump wall are common in wastewater pump stations. With the Flygt SmartRun sump cleaning sequence, the pump overrides the stop level to pump down to snoring level to remove oil, grease and other floating pollutants from the surface. In combination with the randomly set starting level, this also reduces build-up of grease on the sump wall.

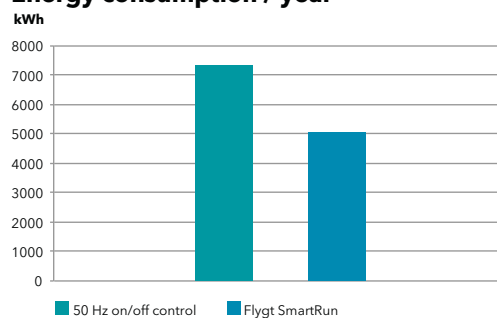
With conventional variable frequency drive, another concern is that flow velocity in the pipes becomes too low, resulting in sedimentation of solids in the pipes. The Flygt SmartRun pipe cleaning cycle flushes the pipe system to minimize sedimentation.

Finally, Flygt SmartRun also makes it possible to monitor operations more precisely. Via the integrated fieldbus interface ModbusRTU, Flygt SmartRun can communicate to APP, MAS and other control units, so that operational information can be transmitted and viewed from afar. Using a simple browser on PC, Smartphone or Tablet, a user can view all data, adjust some parameters and manage alarms.

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Energy consumption / year



Flygt SmartRun offers a range of advantages, all in one smart package. It is easy to install. There's no need for special competence to set operational parameters.



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