



A SEG AUTOADAPT installation with external communication

The SEG AUTOADAPT: A whole new level of intelligence

The new SEG AUTOADAPT pumps have proven very popular from the moment of being launched. Clients point to how the new range eliminates problems with external sensors in pumping stations and facilitates intelligent operation – and now that the pumps are being installed in new projects by the hundreds, end-users look forward to seeing the new SEG pump’s advantages translate into real benefits in the years to come.

Flying start for intelligent pump range

In Denmark, the SEG AUTOADAPT range got off to a flying start. Since its launch, it has been chosen for many projects, in some cases even replacing the pumps originally chosen in ongoing projects. For example, one customer had originally selected the standard SEG pump for the first phase of their project, but when they saw the new AUTOADAPT version, they decided to use that for all phases – including the one already underway.

Once you try AUTOADAPT, you don’t go back

But let us begin at the beginning. Tom Thomsen from Grundfos recaps the new SEG AUTOADAPT pump in these terms: “The main benefit to everyone really is that you effectively get your pump and sensors as a single unit! They operate with complete intelligence, yet do not require any external sensors. This eliminates a lot of wasted time on troubleshooting, for example when trying to find the root

cause of a pump stop – is it sensor trouble? Electronics? Here, you can simply take out the pump, put another in and then repair the faulty one. Problems can be solved almost immediately. We’re very confident that once people have tried the AUTOADAPT version, they won’t want to go back.”





Presentation and training of the solutions and possibilities

Early starters

One of the first projects to feature the SEG AUTOADAPT range in Denmark took place in Guldborgsund, where the Rasmussen & Kragh company of surveyors have many years of experience with sewage projects. Carsten Kragh was called in by the local authorities to handle three separate projects where pumping stations were required, and he describes the project in the following terms:

Repeat business

“The first stage of the project was modest in scale, but it featured something entirely new. Grundfos won the tender for pumping stations to serve 73 addresses, and each of these stations was equipped with the SEG AUTOADAPT pump.” Since then, the project has grown in scope, expanding the original 73 pumping stations to 200 and beyond, prompting a recent order of an additional 600 pumps for the next stages.

Standardised solutions a great benefit

“The client sees many advantages to having a standardized solution for their pumping stations,” explains Carsten. “It makes service and maintenance a great deal easier for installers. Right from the start, they expressed a positive interest in the new SEG range, and their interest has proven well-placed.”

“Very user-friendly”

When asked about the advantages of the SEG AUTOADAPT range, Mr Kragh does not hesitate: “They’re very clever. They’re great for promoting user-friendliness. Getting rid of the external sensors makes service a lot simpler.”

Excellent for documentation

He also emphasizes how the easy access to information and documentation is an advantage when communicating with landowners and water supply providers alike: “With the data on starts and operation hours easily available, we have all the documentation we need to prove actual consumption – and savings – to property owners. Concerned citizens can get exactly the information they need.”

A good relationship is important

Carsten Kragh stresses the importance of interaction: “When we get down to the nitty-gritty of dimensioning, our company would present our estimates for the required pipe size, etc., and discuss them with Grundfos. We would usually agree, but when it comes to the exact dimensioning of the pump unit, we certainly defer to Grundfos; when you have up to 5 or 6 km of pressurized piping, you need to know that the pump that pushes everything is exactly the size it needs to be.” With the new AUTOADAPT range, clients enjoy the added benefit of a pump that thinks for itself – so the pumping station is never cluttered with external sensors and other sensitive equipment.

1,000 households to be connected to the sewers

Guldborgsund was just the beginning; many other projects have followed. One of the main projects involving the SEG AUTOADAPT range in Denmark is currently being carried out by Gribvand Spildevand. Here, plans for connecting outlying holiday homes, homes and farms to the main sewer system have been in the making for some 20 years, but recently the local authorities took decisive action: The approximately 1,000 households in the area were to be connected to the public sewer network as soon as possible, with work beginning immediately.

High water table made pressurized system necessary

Consulting engineers COWI were chosen by the Gribvand wastewater utility to handle the project, which involved creating a pressurized system to counteract the special conditions that apply at the site: Located by the Arresø lake – the largest lake in Denmark – the area is low-lying land with a very high water table, so a conventional gravitational system proved impracticable; too much outside water would enter the system. Hence, a pressurized solution was called for.

Stage 1 begins

After the public hearing process had been completed, stage 1 of the project was sent out to tender, comprising a total of 150 pumping stations. The various proposals were whittled down until Grundfos and another major pump company presented their solutions for a review board. Eventually, Grundfos won both tenders for stage 1, which was split into large and small pumping stations, respectively.

SEG pumps chosen

At this point, the pumping stations for the Gribvand project were to be fitted with standard SEG pumps. However, the project managers were aware that the AUTOADAPT version was nearing completion, so they were certainly interested in the new alternative that was on its way. Work on stage one began, but even while the digging and delivery was still going on, the local authorities speeded up the process and invited tenders for stages 2 and 3 simultaneously; that is, for a total of approximately 860 pumping stations in addition to the 150 from stage 1.

Reducing the cost of the total installation

When the tenders for stages 2 and 3 were invited, the SEG AUTOADAPT version had become available. As the tender included all parts of the pumping stations and installations, the new SEG model could actually reduce the total cost of the installation. And having seen the new models, the local authorities asked whether it would be possible to exchange the first 150 regular SEG pumps for SEG AUTOADAPT models, ensuring that all stations featured the same equipment. This was promptly done.

Allowing for easy monitoring

To return briefly to the subject of outside water, Grundfos' system allows the pumping stations to be fitted with one of the 30 modems owned by the local authorities. These will check that emissions from the 15-20 households on the relevant roads stay within a given norm, preventing misuse, unauthorised drainage, and so on.

Resolving scepticism

Tom Thomsen, Grundfos representative at Gribvand Spildevand, relates how the electronics caused some concern among operation staff: "Some saw the point of the new AUTOADAPT versions instantly, but the operations department in particular was slightly sceptical – partly because of the electronics involved. A live demo stand came a long way towards persuading them. Concerns about repairs were still an issue; the staff are not accustomed to working with electronics. In response, we'll build and supply a test bench that will provide readouts of pumps, indicating what may be wrong with them – rather like the equipment used by car mechanics."

"We saw the point from the outset"

Though it is still early days, the general response to the new pump range is intrigue and positive surprise. As Sheila Behzadi from the Gribvand wastewater utility says: "The new SEG AUTOADAPT pumps are still being installed, and few have entered active operation at this stage, so it is too early to say anything concrete about our day-to-day experience with the pumps. But right from the start we could definitely see the good points about the AUTOADAPT versions: Clever, fully integrated, eliminating the need for external controls. All this is quite compelling. Also, we've found that the Grundfos guys are easy to talk to, and when there's been teething problems we've enjoyed excellent dialogue at our regular conferences."

Whole new opportunities for Grundfos

"This product is really changing the rules of the game in the market, and it gives Grundfos a unique opportunity to stand out," says Sales Director Steen Stephansen. "It shows that we really mean it when we say that our innovation projects are driven by real customer needs – and it also shows that you can integrate a lot of intelligence into a pump without using high-risk sensors and electronics."

A true plug'n'pump solution

His sentiments are echoed by Christian Poulsen, installation manager with Grundfos. "From an installation and commissioning point of view, the SEG AUTOADAPT has made our life so much easier. It is a true Plug'n'Pump solution – and of course it's nice to know that day-to-day operation will continue to be equally simple for utilities and endusers."

Today, the SEG Autoadapt is available in all 50 Hz markets worldwide.



SEG AUTOADAPT

About the Gribvand wastewater utility

Gribvand Spildevand is a wastewater utility in Gribskov, for more information see www.gribvand.dk. It employs 21 people, 13 of whom work with the operation and maintenance of plants and systems. Prior to the ongoing project at "Sandet", the utility was responsible for 10 cleaning plants, 600 km of sewers, and approximately 250 pumping stations; these figures will rise as more stations are added to the system. The utility is also responsible for expanding the sewer system in response to e.g. urban development, capacity demands, and regulation to protect the environment.

The wastewater utility serves approximately 26,000 properties, nearly half of them holiday homes. The old-town neighbourhoods in the three main towns have combined sewers, while more recent neighbourhoods have separate sewers. Approximately 4,000 properties within the municipality are not connected to the sewers; these are currently being assessed in view of the most recent Danish legislation.

The process of connecting the "Sandet" community, which numbers approximately 1,000 holiday homes by Arresø, first began in 2009 and is expected to be completed by the end of 2012.