Oriola AB revolutionises its environmental control solution thanks to a Logix-based architecture from Rockwell Automation

Kennedy Automation deploys contemporary control architecture at pharmaceutical plant to create a control solution that is gaining multiple customer plaudits

**Challenge**

Oriola AB had to upgrade its environmental control solution to meet the ever-increasing demands of both its customers and national legislation.

**Solutions**

A Rockwell Automation solution was installed, which included:

- FactoryTalk Historian Site Edition (SE)
- FactoryTalk VantagePoint
- FactoryTalk View Site Edition (SE)
- Allen-Bradley ControlLogix programmable automation controllers
- Allen-Bradley PowerFlex variable-speed drives
- Allen-Bradley Point I/O
- Stratix switches
- Allen-Bradley PanelView HMIs

**Results**

- Far more effective environmental control
- Additional risk-based approach accepted by the majority of customers
- Reduced energy consumption
- Greater data visibility in real time
- Far greater customer confidence
- Open platform facilitates easier upgrading, without disrupting or affecting already validated processes

**Background**

Oriola AB is the second largest pharmaceutical wholesale company in Sweden, with a market share of about 40 per cent. Serving clients that primarily comprise pharmaceutical companies and pharmacy chains, the company exploits two wholesale logistics centres in Mölnlycke and Enköping. All pharmaceutical distribution is handled by the Enköping site, while central warehousing and the company’s headquarters is in Mölnlycke.

In addition to pharmacy distribution and central warehousing, Oriola also provides pharmaceutical manufacturers with various added-value services including: logistics and management for clinical trials; sampling and storage services, which are used by several pharmaceutical companies; and packaging services that include re-packing and handling of all types of pharmaceuticals for the Swedish and Nordic markets.

Since 2010, the company has been working on a program formulated to create a sustainable culture of continuous improvement, in order to reduce internal waste and deliver more customer value. The program, which is implemented throughout the company, is based on its customer promises and how its internal processes are constantly improved in order to enhance customer satisfaction.
As part of this continuous improvement, Oriola realised that it had to revise its environmental control solution in order to bring it up to a level that would satisfy the ever increasing needs of national legislation, alongside its customers’ demands for more precise environmental control and data traceability in terms of all facets of the pharmaceutical storage process.

Oriola approached Kennedy Automation AB, a Rockwell Automation Recognised System Integrator and a company with a proven track record of HVAC solutions for the pharmaceutical industry. Kennedy Automation developed a new control infrastructure – designed using all-round GxP principles – based on advanced process and control products from Rockwell Automation.

**Challenge**

According to Jonas Larsson, Facility Manager at Oriola: “It was difficult to undertake logging using the old system. We had three primary issues. First, the system was un-validated; our customers demand validated monitoring systems, so we either had to validate the old system or replace it. The second issue was that the old system was based on a serial communications line, built in a loop, so there was always the potential risk of unwanted changes every time we added or removed something. The third and final issue was that we knew that we were simply using too much energy.”

According to Liam Kennedy, Lead Engineer at Kennedy Automation AB: “Oriola’s old solution was a multiple-vendor SCADA system with integral logging that had never been properly tested and documented, two factors about which the authorities were critical. Oriola knew it needed to upgrade and was well aware of the issues involved and the limitations of the existing system should it not take a proactive approach.”

“Our customers were demanding data and I wanted a system that could provide this data at the push of a button,” Jonas explains. “We also saw a huge opportunity to save energy by doing things smarter, such as adding variable-speed drives. Way too much air was going through the building, which had originally been built for other purposes. We knew that we could reduce the volume of air and make significant energy savings without affecting the optimised environmental conditions.”

**Solution**

“The solution was based on three phases,” Liam explains. “In the first instance a solutions platform was installed to provide services including SCADA, alarm monitoring, historical data logging, reporting services and, of course, client server operations. These leveraged FactoryTalk® Historian SE, FactoryTalk VantagePoint® and FactoryTalk View SE from Rockwell Automation.

“To facilitate this,” he continues, “a corporate-wide control systems network was installed, based on fiber optics and connected using Stratix™ switches from Rockwell Automation. This use of a fiber optic-based network, also gives Oriola the ability to make phased additions without risking the parts of the system that have already been validated.”
“The second phase,” he elaborates, “was the installation of control systems in the freezers – which regularly function at -22 °C – and the chiller rooms, both of which see variable cooling loads as products are introduced and removed. This control system included the deployment of several Allen-Bradley® PowerFlex® variable-speed drives to control the compressors that are used to regulate the cooling power. Finally, a room-monitoring system was installed, which comprised 490 temperature and humidity sensors. This provides complete monitoring, alarm and reporting facilities.

“A large legacy Allen-Bradley SLC-based system was already in place,” Liam explains, “we just wanted to upgrade it to a more contemporary solution and Rockwell Automation offers a lot of help with this process, especially with the introduction of the 1747-AENTR adapter module.”

The 1747-AENTR adapter module allows Allen-Bradley CompactLogix™ and ControlLogix® programmable automation controllers to control SLC I/O modules. It is primarily designed to enable the migration of existing SLC-controlled systems to Logix-based systems and acts as a gateway between the SLC backplane and EtherNet/IP and typically replaces an SLC controller in a rack.

As well as the new control infrastructure, much of the success of the system is down to more intelligent use of the sensors and their positioning. “We used much more intelligent sensor placement,” explains Jonas. “My suggestion at the start was not to rely solely on temperature mapping, so we came up with a method that measured the temperature in real time. For this we adopted a risk-based approach, where we noted all possible sources of heat and cold (doors, fans, heaters, etc.) and then we said that between every ‘risk’ and our product storage there should be a sensor probe as well as probes all around the area and in the middle.

“This results in many more probes,” he continues, “but we now have much more faith in our real-time data. Temperature mapping is still legislated by law and forms a major part of our risk-based approach, but we can offer our customers significant additional data. A few of our customers were very impressed and even suggested that our new approach was ‘top of the class.’

Alongside the regular audits, the facility also undergoes other inspections. “We have constant interaction with authorities,” Liam explains, “and have been involved in over 50 inspections since the initial installation. Oriola is responsible for the distribution chain, so any issues can affect the whole customer chain. If anything comes up in the inspections they call Kennedy Automation to prove that things were done correctly; we can expect a call at any time. We provide test-assessment documents and risk assessments, some of which prompt further enhancements. We do still get comments, but nothing like before.”

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Oriola also saw a huge opportunity to save energy by doing things smarter, such as adding variable-speed drives
Results

“Our customers are a lot more confident in our facility and our data delivery,” Jonas explains. “The requirements from our customers and the national and international bodies are always getting tougher and had we not done this project we almost certainly would have lost business. We are also very confident in our ability to match the more strenuous requirements we will likely see over the next few years. Indeed, the new regulations are actually heading towards our methods – one based on risk assessment. As long as you can prove that you have thought about the risks and mitigated for them, the assessors are happy.

“We have used Kennedy Automation before,” he elaborates, “in an Allen-Bradley installation at another site. Kennedy Automation knows the products and the business and those two combined are extremely valuable for us – it was a no brainer. We will eventually replace other control systems with those from Rockwell Automation.”

Oriola is also enjoying the benefits of EtherNet/IP. “We wanted a modern communications infrastructure and in our eyes EtherNet/IP is the best and easiest to use,” Jonas concludes. “We made the choice to have our own process network. It’s not connected to company network, but one server has a double-network access card, so we can access the system from office if we really need to.”

“At Kennedy Automation, we work solely with Rockwell Automation,” Liam finalises. “We can interface with others, but our solutions are always from Rockwell Automation – even our cabinet design. If Rockwell Automation doesn’t have it, we don’t sell it. This allows us to specialise on one technology platform so we can give our customers the very best service and solutions.”

Additional Information
www.rockwellautomation.com

The results mentioned above are specific to Oriola and Kennedy Automation’s use of Rockwell Automation products and services in conjunction with other products. Specific results may vary for other customers.

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