

Case Story | VLT® Midi Drive FC 280

Drives technology: the recipe for precise actuator control

Worldwide, there are only a handful of manufacturers of electrical actuators for the process industry – and the Viennese company Schiebel Antriebstechnik GmbH is the smallest of these. However, the company turns this to its advantage and gains status in the marketplace with technology quality rather than quantity. This technology is tucked away in the interior of the actuators, ensuring that flows can be regulated in an accurately controlled manner, even in difficult applications. Danfoss is responsible for this: the VLT® Midi Drive FC 280 AC drive is a product that is perfect for the task at Schiebel.

**Flexible**

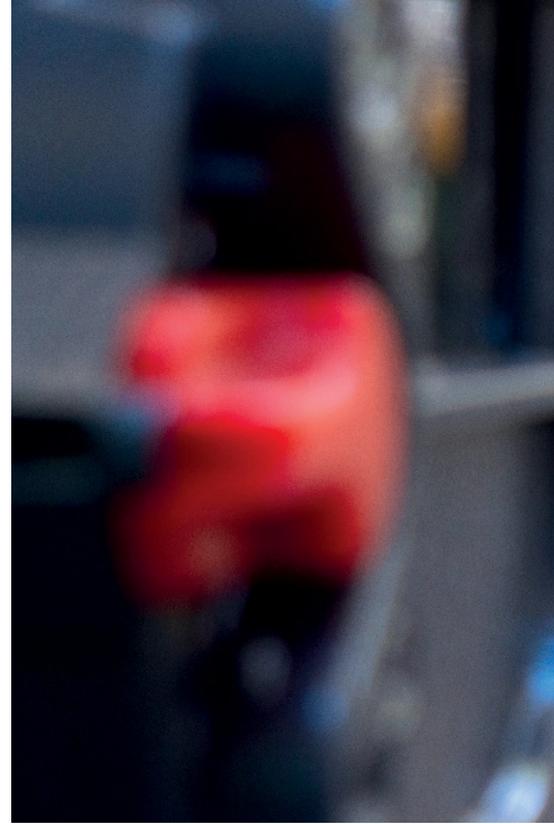
in application,
simple and fast in
system integration

Optimal integration: With its compact and temperature-resistant design, the Danfoss VLT® Midi Drive FC 280 drive fits almost perfectly into the Schiebel actuators.



Danfoss' variable speed drives impressed us from the outset.

Klaus Schiebel
Company director



VLT® Midi Drive FC 280

Small and excellent

Schiebel is the only Austrian producer of electric actuators. These actuators are used anywhere that the supply and removal of solid, liquid or gaseous substances needs to be controlled. "Compared to other providers on the market, we are the smallest company. But it is precisely our manageable size that allows us to have an important say in this market," states company director Klaus Schiebel confidently. In this context, depth of production is one of the key terms: "At our factory in Vienna, we produce around 7,000 actuators each year with 56 employees, and we have the entire production chain in our own hands, from development through to construction, mechanical finishing to assembly and packaging." This is due to the fact that the Schiebel actuators are considerably more

compact than competitor products with the same performance. When it comes to markets, the Viennese company delivers worldwide, but with a leaning towards Eastern and South-East Europe – partly due to history, and partly due to market conditions. Schiebel places value on proximity to the customer and is represented internationally not only by dealers, but also by its own subsidiaries. "This is part of our service strategy. We want to build a lasting customer relationship," says Klaus Schiebel. Their success is proof that the company's strategy works. After all, Schiebel's employees are excellent at parleying the company's "smallness" into a strength. Flexibility is the key word here, both in the technological area, as well as in terms of customer requirements and delivery times.



The Schiebel actuators provide precision control for a wide range of industries, even in extreme climates and harsh environments.



Schiebel Smartcon and Danfoss VLT® Midi Drive FC 280 are the perfect match for precise actuator control in demanding applications

Success thanks to technology

Schiebel builds on a technological specialty: their so-called “fail-safe” actuators. “Electric actuators have a weak point: If the power supply fails then the actuator fails, which can lead to problems in certain areas of the oil and gas industry,” explains Stephan Vasiljevic, who is responsible for electrical engineering at Schiebel.

A good 20 years ago, technicians from the Viennese company had to deal with this weakness using a spring reset mechanism. Today, the technology that evolved from this is highly in demand on the market. “Our fail-safe function is a major factor in our strategy of winning customers with technology,” says Klaus Schiebel. But Schiebel also has taken into account the trend

towards decentralization in process automation – with the development of its own control system for actuators. “With Smartcon controls, the intelligence is moving out into the field,” says Vasiljevic. “The integration to the control system uses widespread fieldbus technologies.” In addition, the control system enables comprehensive diagnostics.

Precision control

While most actuators only have a relatively simple “open-closed” functionality, a number of applications are significantly more demanding. These require a high degree of accuracy and the flow control must be able to be carried out in precise, small steps. “Applications for this type of

actuator can be found, for example, in gas pipelines or steam conditioning,” says Vasiljevic. This fine process control is realized by means of an AC drive, and this is where Danfoss comes into play. The company’s extensive expertise in AC drives is very much in demand here, as the devices have to meet a whole range of requirements - Schiebel’s

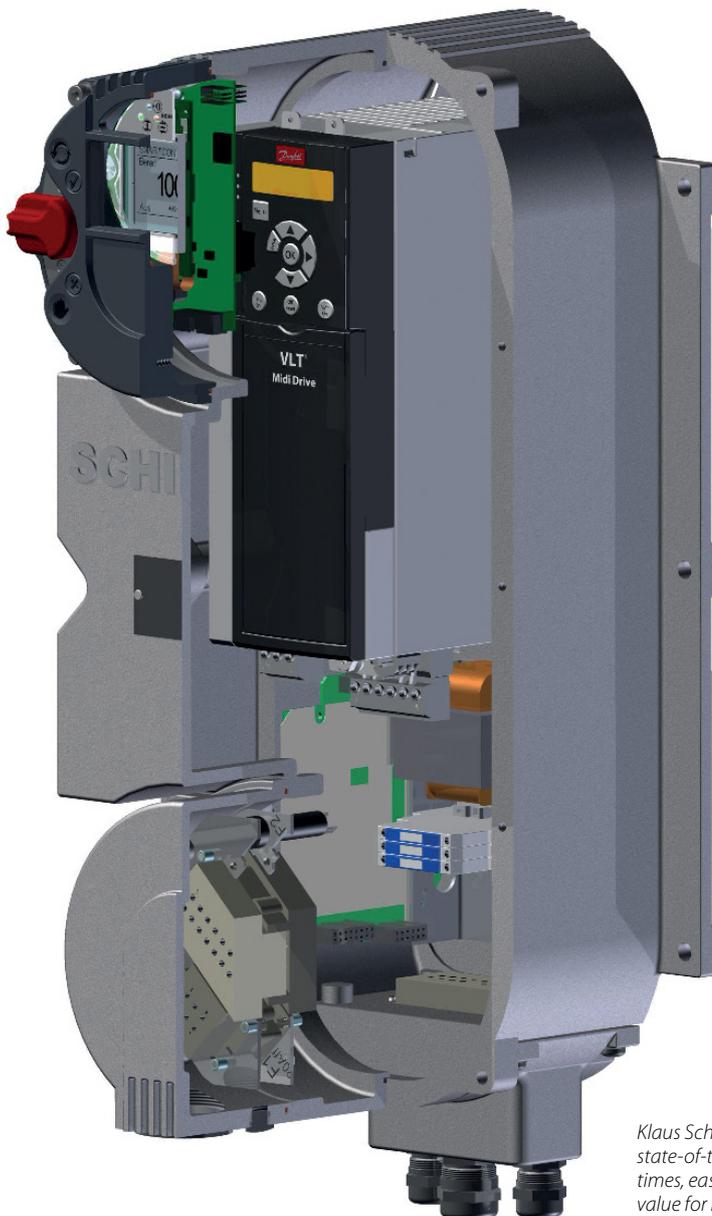
demands are high. One point is the frame, since the AC drive is not placed in a switch cabinet, but is integrated directly into the actuator control. This in turn means that the heat dissipation must occur without additional cooling. Very few other AC drives on the market have the required compact and robust design.

State of the art

“One of our most important requirements is that the highest torque is available on startup,” explains Stephan Vasiljevic. Previously, this requirement usually meant using an oversized converter. With Danfoss’ VLT® Midi Drive FC 280, this is now no longer necessary, which has a positive impact, not least on the costs. Control and parameterization of the AC drive is

performed using Schiebel’s Smartcon control – the Danfoss developers thought of everything to offer OEMs this option. With the VLT® Midi Drive FC 280, Danfoss has launched an AC drive that represents the state of the art across all its characteristics. “The support of a wide range of fieldbus systems, the control of permanent magnet motors, an integrated STO (Safe Torque Off) function, the USB

interface and last, but not least, the new memory module are just some of the features that make the FC 280 a consistent package for OEMs,” confirms Günter Schwarz, Global Product Marketing Manager at Danfoss in Guntramsdorf. In line with the motto “Flexible in application, simple and fast in system integration”.



The complete solution

Another important factor is having excellent support, both very close by and globally. Klaus Schiebel is satisfied with the FC 280 drive on all counts. "It is technologically state-of-the-art, offers high performance with correspondingly short response times, easily fits into our enclosures thanks to its compactness, and offers very good value for money." It is no surprise, then, that Danfoss AC drives are also part of the largest individual order in Schiebel's history. Schiebel sales and service manager Michael Pillar: "We are delivering around 1,000 actuators for the construction of a 660 MW lignite power plant in Greece (Ptolemais V), about 300 of which are controlled by AC drives." A milestone in the company's history, to which Danfoss is making a significant contribution.

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Schiebel Antriebstechnik GmbH

Anyone entering the company premises of Schiebel Antriebstechnik GmbH in Vienna's 23rd district soon notices – the atmosphere leaves no room for doubts – this is a family company. With tradition on the one hand and clear awareness on the other of the resulting strengths that allow the company to hold its own in a sometimes difficult market. The starting point of this development was the creation of the company by the father of the current owner in the 1950s, in a basement workshop. Initially it was a manufacturer of electrical and later mechanical

components. Looking at the company today, there is not much left of this: The basement workshop is, of course, long gone, as is the product range from that time. Today, Schiebel is dedicated to the production of high-quality electrical actuators with torque between 30 and 5,000 Nm (even up to 100,000 Nm with additional gearing) and power of 30 to 22,000 W, for process automation in the areas of water/wastewater, oil and gas, power plant and tunnel construction, and other industrial sectors. The atmosphere remains the same.

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