THE TECHNOLOGY AND PEOPLE AT LEINE & LINDE

Jubilee issue 2017

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50 YEARS OF ROBUST ENCODERS

This year is Leine & Linde's 50 year jubilee

From two engineers with a feel for the technology to a company with market-leading products in a global market. Follow their story on the centre spread.

WAVES THAT WIN

Corpower Ocean chooses 600 series

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DURABLY SAFE

Smurfit Kappa uses FSI 800

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Hip, hip hurrah!

WITH 50 eventful years behind us, we can see how Leine & Linde has been shaped by all the positive interaction with customers and employees, as well as global industrial development. Per-Olov Leine and Henrik Linde founded the company back in May of 1967, and their sense of joyful fascination with the art of engineering lives on at the company to this day.

Teamwork, open mindset and customer focus constitute our core values. Our employees, with their knowledge and solution-oriented approach, are our greatest strength. In collaboration with our customers, we create cost-effective solutions in which quality, robustness and honesty are the guiding principles.

THAT WE became a part of Heidenhain GmbH in 1992 has been, and is, beneficial for Leine & Linde. Combined with our close collaboration with colleges and universities, our abilities to successfully deal with challenges are excellent. The company is also very involved with the region's upper secondary schools. We created an academic programme that establishes the competencies within the relevant areas our production requires, to continue growing with retained productivity and quality.

BEING CLOSE to our customers is important, both because it enables us to always be nearby when help is needed and because it makes it easier for us to understand customers' applications and consequently their needs. That we presently export about 90 percent of what we manufacture makes Leine & Linde a multi-cultural company, not just out in the offices we have around the world, but also here in Strängnäs. This provides the company with fantastic added value.

We deliver thousands of different products each year with normal delivery times of 10 working days – entirely without any products in stock – to 76 different countries with a quality that satisfies our customers. This hasn't come about by chance. It has been through having dedicated staff, clear goals and breakfasting together that Leine & Linde has developed into what we are today. I am looking forward to the next 50 years with great expectations when it comes both to challenges and opportunities.

So three cheers for Leine & Linde and a thank you to all our customers!

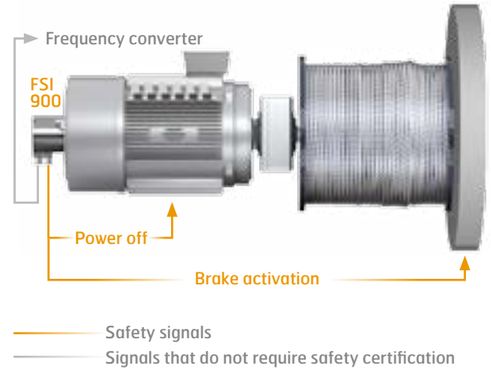
Strängnäs, September 2017
Per Andréason
CEO, Leine & Linde

FUNCTIONAL SAFETY NEWS

FSI 900 ENABLES SAFETY IN DRIVE APPLICATIONS

THE FSI 900 functionally safe solution with integrated safety functions is now becoming even more flexible, certified in accordance with SIL2 and PLd, Category 3. With an incremental signal output, the encoder is now perfect for use in drive applications.

The FSI 900 is mounted directly on the motor shaft, with the integrated overspeed switch monitoring the speed of the motor; the incremental HCHTL signal is connected to the drive to control the speed of the motor, just as a standard closed loop system. If the motor exceeds the speed, the overspeed switch will be activated. It can then prevent the motor from running at an unsafe speed and creating a hazardous situation. No external safety relays are needed; they are integrated in the FSI 900. It can't be any simpler than this. ■



A SIL certified, functionally safe overspeed monitor with signal output directly to the drive.

UNAFFECTED BY INTERFERENCE

NEW GENERATION OF OPTOLINK PRODUCTS

LEINE & LINDE'S system for Optolink, which transfers incremental encoder signals over optical fibre, has undergone a generation shift. The new generation's Optolink has enhanced capabilities for simpler diagnostics.

The Optolink system consists of a transmitter and a receiver. The system is especially useful in environments where there is considerable electrical interference because the optical signals are unaffected by this kind of interference. Another application area can be in the transfer of encoder signals over long distances. With Optolink, the encoder signals can be transferred up to 2700 metres. Due to the signals being sent optically, galvanic isolation is also created between the transmitter and receiver.

Both transmitters and receivers are manufactured by Leine & Linde and are included in the accessory assortment. The company also has incremental encoders with the Optolink transmitter integrated in the encoder. ■

ATEX AND IECEX ABSOLUTE ENCODERS WITH ETHERNET/IP

THE ROBUST absolute encoder models 647 and 648, perfectly engineered for harsh offshore applications, are now available with the EtherNet/IP communications protocol. The interface provides easy installation with automatic addressing, which means that the encoder does not need to be opened for connection, ideal for machinery on an offshore rig. The interface also provides free scaling as well as binary and non-binary scaling. In combination with ATEX and IECEx certification for the encoders, EtherNet/IP is now ready for use in zones 1 and 21. ■

HAZARDOUS LOCATIONS

XHI 841 WITH EAC CERTIFICATION FOR HAZARDOUS AREAS

THE ENCODER MODEL 841, certified for use in explosive atmospheres, fulfils the TR CU 012/2011 technical regulations on safety of equipment intended for use in explosive environments. The certificate is applicable in the countries within the customs union for Belarus, Kazakhstan and Russia. EAC replaces the previous GOST-R certification.

For Leine & Linde's customers, this means that encoder model 841 can now be used in such tough applications as materials handling, draw works, and motors, where IECEx, ATEX and EAC Ex are required. ■

The drive system is the heart of a paper machine. At Smurfit Kappa Piteå, Leine & Linde's encoders have provided stable and dependable speed feedback to drive systems for more than 30 years. During the most recent update of the drive system for Paper Machine 1, Leine & Linde's safety-certified encoder FSI 862 was installed.

PROCESS CONTROL AND SAFETY WITH THE FSI 800 SERIES

SMURFIT KAPPA Piteå is Europe's largest producer of kraftliner with a production capacity of about 700,000 tons for the brown or white surfacing material that is used on corrugated cardboard of the best qualities in packaging products. This is where we meet system engineer Björn Lidström, responsible for the mill's drive systems. The production plant in Piteå has been in operation since the early 1960s and Björn Lidström has worked at the company since 1987.

"A paper mill is characterised by both a long-term approach and speed," he says. "How you can get the most out of the machines, maintain them so that they last, prevent problems, and at the same time, make sure that they can produce as much as possible without downtime."

This means that drive system responsibility involves both awareness and teamwork. Because it's people who work with the machines – such as the process operators, mechanics and system engineers. The mill is in operation around the clock with a six-shift schedule.

Functional safety installed

The production unit called Paper Machine 1 consists of a wet section, a press section and a drying section, as well as quality control and reeling. The various sections extend for several metres in the building and the kraftliner material is transported in a complex system over several floors, where wire cloths help the water to run off before the paper is pressed and dried. Because large portions of the system must be designed to provide access to the machinery even while it is operation, the machine directive for functional safety must be observed. This is where Leine & Linde's FSI 862 encoder is used.

"The first AC motor in Paper Machine 1 had recently been installed when I started here, and the motor was already using encoders from Leine & Linde," says Björn Lidström. "The motor is from Strömberg, which is now owned by ABB, and is still in use as a part of the drying line. It's great to see how it can still do the job, now with functionally safe speed feedback in accordance with the machine directive."

Each green dot represents an encoder.

System Engineer Björn Lidström, Smurfit Kappa Piteå.

Connected to safety modules

The drive system is displayed on the control room's computer screens. Each green dot is an encoder that is installed on a motor, and motor speed can be monitored in real-time.

The encoder provides speed feedback to the frequency converter, but also has a responsibility in the safety system. Thanks to the FSI 800 series' signals managing long cable lengths, it's no problem to run the cables the whole way to the control cabinets, which are gathered in a separate room where they cannot be affected by the paper machine's often high temperatures and humidity. ABB's frequency converters and their safety modules are installed in the cabinets, easily recognisable by their yellow colour.

"Moreover, ABB helped us to run all the encoders to a separate measurement cabinet," says Björn Lidström. "We've installed signal splitters so that we can use the encoder signals for several different things even though we only have one encoder per motor. We have measurement terminals with measurement outputs so that we can read off and compare the frequencies as necessary. In this way, we can see if we need to reconfigure load distribution between different operations in the same group to create increased balance in the flow."

He also feels that collaboration with ABB has gone well, and the same goes for Leine & Linde.

"If we have questions, we get answers, and we usually get a good response when we can motivate why we want things to be in a certain way. A stable and safe drive system is the heart of a paper machine."

Downtime and damage minimised

When it come to encoders, it is naturally important that they deliver what they promise. While delivery times are important, of course, so are dependability and tolerances, such as how much motor vibration they can withstand and still deliver their signal.

"It's sometimes happened that someone needs access to the upper parts of a motor and has climbed up on the encoder. This isn't a very good idea since the shafts can bend. But in my experience, they can still be run until a scheduled stop. They're that durable," Björn Lidström says with a smile. ■

EtherCAT encoders important for wave power

Leine & Linde's durable Industrial 600 series with EtherCAT provides direct position feedback.

Corpower Ocean is an innovative development company with facilities at the Royal Institute of Technology in Stockholm. Among other things, they are developing an entirely new type of wave energy converter (WEC).

EACH WEC – which is integrated into a large buoy secured to the sea bottom – attains an oscilliating motion that amplifies wave motion. In this way, energy can be very effectively extracted in all weather. This simultaneously places stringent demands on the control system, which is installed inside the buoy and ensures that the integrated electronics are not damaged in rough weather.

"There is no single component that is as important for our control system as the absolute encoder," says Jakob Sagatowski, software engineer at Corpower Ocean, and explains that the encoder's position feedback determines when and how motion needs to be dampened.

The system is based on real-time feedback and extremely fast control algorithms. The wave energy converter constantly ensures that it is in the optimal position in relation to potential power production.

Jakob Sagatowski likes that the encoder is easy to integrate with the control system.

Easy to integrate

Because the buoy operates out at sea, all components must comply with stringent demands when it comes to resistance to moisture and water, vibration and impact, as well as electromagnetic interference.

"We conducted a market survey and found one absolute encoder that fulfilled all our requirements," says Jakob Sagatowski. "It was from Leine & Linde's Industrial 600 series with EtherCAT. Another advantage was that the encoder was easy to integrate. It took less than a half day."

Uniform energy extraction

Corpower Ocean decided to use two identical absolute encoders in the control system so that data between them could be compared. They have found that the encoders maintain high concordance. Moreover, these EtherCAT encoders have a well-documented warning and error message reporting system, which the company accesses in its system tests.

A test rig has also been developed by Corpower Ocean so that all wave conditions can be simulated. In the next step, the wave energy converter will be tested at sea off the Orkney Islands, and then developed on an even larger scale. The present buoy is about 4 metres in diameter and 12 metres high – when these numbers are doubled, energy extraction increases tenfold.

The future's wave farms are expected to have from 40 to thousands of interconnected units. This means that a larger wave farm could produce a constant 100–1000 MW of electricity in the climate along the Atlantic coast in a way that is environmentally friendly. The waves win in the long run. ■

A HALF CENTURY

– always with the focus on the needs of our customers

From two talented engineers with a feel for the technology to a company with market-leading products in a global market. Follow along on the first 50 years with robust encoders!

WITH GLOBAL PRESENCE in more than 100 markets, Leine & Linde supplies incremental and absolute encoders for industrial automation for those truly heavy applications and tough environments. It all started in 1967.

Henrik Linde tells of how Per-Olov Leine had both a client who wanted to buy an angle sensor made in Sweden, and an idea for a new way of manufacturing code disks. This was the beginning of the company they founded. The ten-year period that followed is often referred to as the Inventor Epoch. The two friends succeeded in developing several production methods, took on their first employees, and after a few years, moved to an old public bathhouse in Strängnäs. Customers included companies such as Retab, Hugo Tillqvist AB and ASEA, which is now ABB.

Production and engagement

The small company's customers seemed satisfied and more queries came in. At a trade fair in Stockholm, they met their first international agent, who took their products to France. And this was followed by contacts with distributors in other European countries. At this time, each person in production built an encoder entirely unassisted, from darkroom work and manual soldering on printed circuit boards to final assembly.

The products included the M35 encoder model, called the 35. Per-Olov Leine and Henrik Linde worked just as much with technical development and problem solving as with community engagement.

Entrepreneurial period

The company entered the next phase in 1977. Both of the founders felt more comfortable in the inventor and developer roles. They consequently sold the company to Ulf Hedlund, who had previously worked for their customer Hugo Tillqvist AB. Ulf Hedlund was a typical entrepreneur, who saw opportunities and was quick to take action. The company grew out of its facilities and a new, modern plant was built at the current address on Olivehällsvägen in Strängnäs. The plant was expanded several times after the move in 1979. Computerisation also made its entry, as well as specialised processes in both production and sales.

Half of the company's production is now exported and Leine & Linde has become market leading in the Nordic countries. The 086 model incremental encoders had been developed into a true bestseller and were delivered both to paper and steel mills. The customers appreciated the products' robustness and durability.

Henrik Linde outside of Strängnäs' old bathhouse where Leine & Linde moved in 1971 and that is now a technology museum.

Expansion with a tough start

When the 1990s began with a recession, the company had experienced rapid growth and was consequently hard hit by reduced order volumes. External ownership was brought in with companies such as Euro Venture and the Incentive Group. This period got off to a tough and rather shaky start, first with a CEO replacement and then needing to nearly halve the work force. Henrik Linde was still working at the company as a development engineer, while Per-Olov Leine had moved on after serving on the board of directors for several years. In 1991, Björn Zetterlund was employed to take charge of marketing operations and later became the company's CEO.

It was in 1992 that the large German encoder manufacturer Heidenhain stepped in as the owner. A company in the same branch that had previously been seen as a competitor. Export came up to speed in 1995 and the company opened a sales office in Germany. An entirely new customer-controlled production flow was also established, which enabled all encoders to be made to order with normal delivery within ten days, and this still applies today.

Everyone loves a good product

The relatively small Swedish company was early in ensuring quality and providing full customer support. Quickly answering questions and making mechanical adaptations won the hearts of many.

The encoders are initially chosen by motor and machine manufacturers or the systems integrators that supplied a comprehensive solution to the production unit where the machine would be used. This is often the large, multinational companies such as ABB, Siemens, Voith, Danieli, Metso, Hitachi, Hyundai and General Electric.

Next come the end-users, who order new encoders when the old ones require replacement. Because the company's robust encoders can handle even the toughest operating conditions, they quickly became popular. Companies in Leine & Linde's core sectors have much to gain with encoders that are both durable and easy to replace so that downtime is minimised.

Internationalisation

The office in Germany has been followed by offices in Finland, Denmark, Italy, China, India, South Korea, Brazil and Spain, as well as specially assigned staff at Heidenhain in the US and Japan. There are now distributors or company offices in all parts of the world, and together they provide service to the company's various target groups and core sectors, both in local and global operations.

Björn Zetterlund led the company in a state of constant growth for more than 20 years. Also worth noting is that many of those employed in the early years are still with Leine & Linde. The company has had relatively low personnel turnover over the years, and presently has three times as many employees as during those years when times were tough. During the same period, both production efficiency and sales have been multiplied several times over.

"Even if we have a high degree of automation in our production, it's still the human factor that determines if an encoder is delivered of the right quality, at the right point in time and at the right price," Björn Zetterlund said. He defines the recipe for success as being close to the customer and wanting to do a good job.

The first employees were hired in 1970.

The company has grown over the years. Here are some of today's staff members, outside production facility B at the main office in Strängnäs in the spring of 2017.

Period of added value

Leine & Linde was early with condition monitoring in their products when ADS Classic was released back in 2000 with integrated diagnostics. During the subsequent ten-year period, the encoder grew to be something more than just a component that feeds back speed or position data in the customer's system. Leine & Linde's solutions provide added value in various forms thanks to the development of both hardware and integrated programming capabilities. In 2007, there were four primary product series: the 300 series, 500 series, 600 series and the always appreciated 800 series. There are all of nine product series in 2017 and a number of different solutions for among other things, explosive

environments, condition monitoring and integrated functional safety. The accessory assortment is also worth mentioning, which includes in-house developed signal converters and gateways that enable conversion between different communications interfaces.

Moreover, it is still important with custom solutions and being able to provide prompt deliveries.

Speed and job satisfaction

"Because we deliver solutions, we must always be able to help customers in need," says present CEO Per Andréason, who likes to share stories of satisfied customers or speedy deliveries.

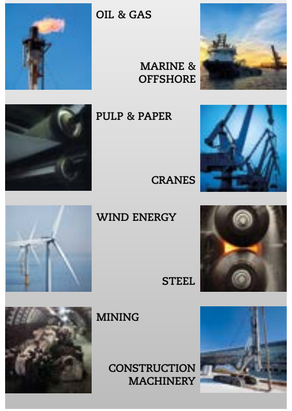
In recent years, Leine & Linde has provided express production in less than 24 hours, or 48 hours at the most for products that require a full day of curing. But the quickest delivery lately was probably when a customer got in touch before the winter with a serial number for a product that needed to be replaced as soon as possible. The address was difficult to provide because it was for an encoder used on a construction machine in blasting a railway tunnel somewhere outside of Stockholm. "Could it possibly be in Strängnäs?" the sale rep asked, and was quickly able to localise the machine. Less than six hours after the fault occurred, the sales rep could place the newly produced encoder in the hands of the person who had called, nearly beneath the company's facilities on Olivehällsvägen. It's fun having an organisation that is able to quickly solve big problems as well as small.

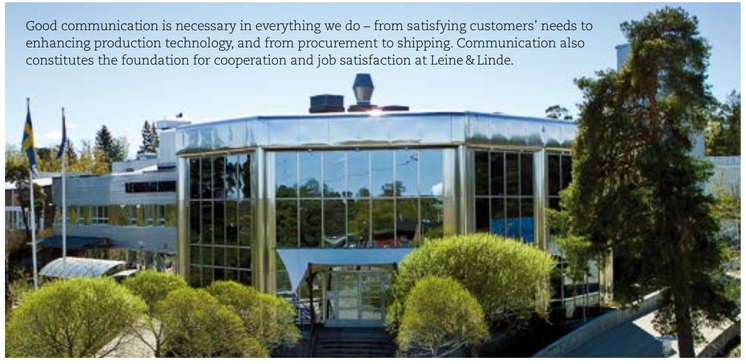
"It's important with a good place to work so that people are happy with what they do. Keep that feeling alive," says founder Henrik Linde, when asked about any advice he could share with today's employees at Leine & Linde.

"My goal is for everyone to constantly hone their skills and to have fun at work every day," says Per Andréason. "If we can do that, Leine & Linde will always be the company that sets the standard for our entire industry." ■

Today's core sectors

Leine & Linde's products are often used in operations with tough environments that place especially stringent demands.





Good communication is necessary in everything we do – from satisfying customers' needs to enhancing production technology, and from procurement to shipping. Communication also constitutes the foundation for cooperation and job satisfaction at Leine & Linde.

Automation director Udo Handschuh appreciates being able to foresee potential problems by following the encoders' vibration and temperature graphs.

ADS ONLINE PASSES TEST WITH FLYING COLOURS

The encoder is able to withstand the tough production conditions in the décor paper mill, where condition monitoring is very useful.

AHLSTROM-MUNKSJÖ PAPER in Aalen, Germany, is a paper manufacturer with traditions dating back more than 400 years. They make décor paper, a specialty paper used for decorative prints. This paper provides a beautiful surface for pressed wood products, furniture and flooring. The mill has received several awards for its efficiency, despite the fact that machines and components are put under a high level of stress due to the harsh production conditions inherent with producing décor paper. Leine & Linde's encoders in the 800 series, with ADS Online, are used at the plant.

"I didn't choose ADS Online to monitor the encoders," says Udo Handschuh, automation director at Ahlstrom-Munksjö. "I know the quality of the encoders. What I wanted was to monitor the drive application."

"I know the quality of the encoders."

Klaus Korger, regional sales manager at Leine & Linde, has worked with Ahlstrom-Munksjö Paper for more than 25 years. In common with Ahlstrom-Munksjö Paper, many of his clients use Siemens' motors and drives. This is how he knows how well the Leine & Linde Heavy duty 800 series works seamlessly with Siemens' systems, but also how the existing challenges place stringent demands.

Heat and colour pigments

"These applications put a lot of strain on the encoders and drive systems," says Klaus Korger. "The encoders need to be very robust for use in this harsh environment with heavy loads and high temperatures, in order to deliver their signals with high frequencies accurately and reliably."

Further demands arise in the production process, where colour pigments swirl in the air. The encoders need to be able to handle being covered by colour dust followed by regular, thorough cleaning, often with strong chemical liquids.

"I'm impressed with the efficiency of this manufacturing unit," says Klaus Korger. "And it is absolutely fascinating to see the variety of colours made in the machine. Some days the machine components can be completely white, and the next they can be completely black or some other colour. In between, they're all shiny and clean."

"If all the parts of the drive system worked as well as Leine & Linde's encoders, I would be very happy," says Udo Handschuh.

Vibration and time in motion

He explains how he uses ADS Online. Since every encoder can be connected to the ADS Online software, he can compare values such as temperature and vibration for any chosen time in each motor application. If, for example, a vibration value increases, this is a sign of a problem, but it is very rare that the root of the problem is in the encoder. More likely, wear has caused some imbalance in the motor, which can be detected and resolved before any damage occurs.

"Condition monitoring is very useful for efficient maintenance," Udo Handschuh says, but he points out that the paper mill will never implement a technical solution just because it is new or trendy. "I base development decisions on whether the concept will create actual, practical value in the application. I think I'm the type of innovator that is also a realist."

"I really appreciate discussing technical solutions with Ahlstrom-Munksjö Paper," says Klaus Korger from Leine & Linde. "They truly understand how our encoders can prevent problems, and we have a great exchange of ideas." ■

The production environment is rough on motors and components, but a green LED on the encoder shows when all is as it should.

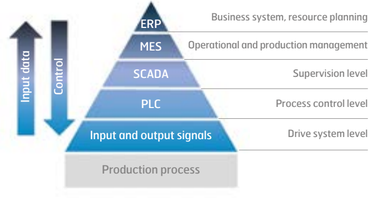
ADS can do more!

An encoder is especially well suited for condition monitoring because of it having a strategic position on a rotating shaft, often on a motor that is subjected to heavy loads or tough environmental stress. In these kinds of situations, the durability of both components and motors is a very important factor for good financial performance.

This is why Leine & Linde developed the advanced ADS Classic diagnostics system as early as 2000, which enabled any internal functional faults in an encoder to be discovered before causing a stop in production. These early warnings proved to be useful in drawing conclusions about the causes behind problems.

ADS Online – several sensors in one

With the next generation, ADS Online, Leine & Linde expanded encoder functionality. The encoder with ADS Online reads off a number of environmental parameters concerning its application, such as vibration, rotation speed,frequency, temperature and power supply. Operational and environmental parameters can be analysed in software or in the user's own system so that problems can be avoided and downtime minimised.



The information gathered by Leine & Linde's diagnostics system can be used in systems on several different levels at a company.

Industry 4.0 on the component level

More data is what people generally want today. Leine & Linde's ADS solutions are based on Industry 4.0 from the component level and up. The encoder provides feedback in its drive system, but the information gathered by Leine & Linde's diagnostics system can also be used on other levels in the company. ADS Online can, for example, give systems access to the article numbers for the encoders that need to be replaced so that ordering can be automated. Data concerning supply voltage, rotation direction and time in motion for various encoder applications can be important parameters in systems for process and resource management, production planning and maintenance follow-up. ■

CONDITION MONITORING

Lars-Albert Ahlström is looking forward to an even faster development process with a broad and robust product portfolio.

FASTER PROCESSES AND NEW PRODUCTS

The product portfolio has been broadened each year, but this is not the only change that has occurred at Leine & Linde. New products' journey from idea to finished delivery has become more streamlined.

LARS-ALBERT AHLSTRÖM, head of development, is back at Leine & Linde about fifteen years after his latest employment at the company. At the beginning of the 2000s, he was a recent engineering graduate and held several positions at the company in production, quality control and project management. He later moved on, gaining additional experience working in leading positions at, for example, Anytec Marine, Saab Bofors and ASSA Abloy before returning to head the development department.

Better flow

"We shall be just as good at delivery precision in development projects as we are when it comes to products," was his spontaneous response when asked about the department's goals.

It may not sound all that difficult, but it has to be kept in mind that Leine & Linde's product delivery precision – with the right product, right quality and right time – has never been lower than 95 percent. The development department will therefore focus on results and schedules. The right products will be introduced with faster processes.

"The products have to be there when the market needs them, and there are primarily three things that must interact for us to accomplish this," says Lars-Albert Ahlström. "We've developed our organisation, our work process and our facilities so that they are completely in line with one another. Project flows, from idea to finished delivery of new products, will be better than ever."

Smart organisation

Leine & Linde's organisation has grown and consequently expanded with dedicated project manager roles to ensure close collaboration between different departments on each project. The project manager better manages and follows up time through predefined mileposts, as well as giving the specialists the space to continue being specialists.

"I'd like to emphasise that our project focus does not mean that employees will miss out on knowledge of new technologies," says Lars-Albert Ahlström. "Here we have an exchange with Heidenhain, which is the group's parent company. This gives us access to a large system company's research and engineering capacity for the benefit of both our own company and our customers."

Development process with customer focus

Development is conducted throughout the company in a well-established process.

"It begins with an analysis of customers' needs," Lars-Albert Ahlström says. "The company's product managers work closely with our sales reps, who have a substantial contact surface with our markets. The needs that we have the best potential for resolving in a competitive manner are defined in the product council, and in this way, we make sure that we develop the right products from the start.

"But we don't just manufacture a product, we define what will be practically possible to adapt by analysing various possible variants in the product key. As soon as the product is created, it is also prepared for efficient future production."

One thing that differentiates today's Leine & Linde in comparison with the company 20 years ago is that it now has a significantly broader product portfolio to maintain.

The company has a major responsibility

"Leine & Linde's undertaking includes making products backward-compatible so that there is always an encoder solution that works for existing customers," says Lars-Albert Ahlström. "It's therefore important that new solutions have the right capabilities for mechanical adaptations, couplings and communications interfaces."

Facilities for close collaboration

New facilities are currently being constructed to provide more space for even more efficient product development. The company will have a development lab that is twice as large as today and improve capabilities for conducting internal tests. With the new vibration equipment that includes climate chambers, both products and subsystems can be subjected to function and durability testing in tough ambient environments at an early stage.

The electronics lab is also expanding, in compliance with the size requirements stipulated for facilities where certification testing is conducted.

"This means that we can further strengthen our expertise in testing and certification so that we know how our products can satisfy all the requirements with extreme durability," explains Karin Colldén, development engineer with responsibility for ATEX.

An effective organisation – where marketing, development and production not only work closely together in theory, but also physically and share interest in results in the same process – increases the flow of new projects. In other words, a lot is going on. ■

Development engineer Karin Colldén (to the right in the photo) likes when tests can be carried out at an early stage.

Upcoming trade fairs

- **China Wind Power** in Beijing, China has the theme "Making energy transition happen". Leine & Linde supplies several products to the wind power sector and the group's sales company in China distributes all solutions from the sister company Leine Linde Systems. Meet the company at booth W1-C03, 17–19 October.
- **Paperex** in New Delhi, India is the world's largest trade fair for the paper industry. Leine & Linde will be exhibiting new products that simplify maintenance and reduce the risk of production stops. Hall 7, booth 7B03, 1–4 November.
- **SPS/IPC Drives** in Nuremberg, Germany focuses on electrical automation technology. The trade fair covers everything from components to complete systems and integrated automation solutions, with special focus on the digital transformation underway now that IT is increasingly included in automation. Leine & Linde participates annually and shows how encoder solutions are contributing to intelligent production. Hall 4A, booth 4A-351, 28–30 November.

Major interest at OTC 2017

OTC, Offshore Technology Conference in Houston, Texas is the world's largest meeting place for the oil and gas industry with more than 2300 exhibitors. Leine & Linde participated with a booth just inside entrance D in the NRG Center.

"It's important for us to be out and establishing contacts," says Vahid Ghaderi, who is Leine & Linde's head of business development in the oil, gas and offshore sector. "We have a broad assortment of encoder solutions for explosive and harsh environments, and can deliver all over the world."

He emphasises the uniqueness of Leine & Linde's rotary encoder for explosive environments in it being available for purchase with integrated diagnostics for condition monitoring. Leine & Linde's products are distributed in North America via Heidenhain, *www.heidenhain.us*. ■

The funnest job in the world

With its short delivery times, express orders and high rate of production, you can almost physically take the pulse of Leine & Linde's production. Despite this – or perhaps because of this – production manager Joakim Danielsson claims to have the funnest job in the world.

WITH ANNUAL production of hundreds of thousands of encoders and the capability to create a finished product in 48 hours or less, production must be free of disturbances and the equipment has to be in good working order.

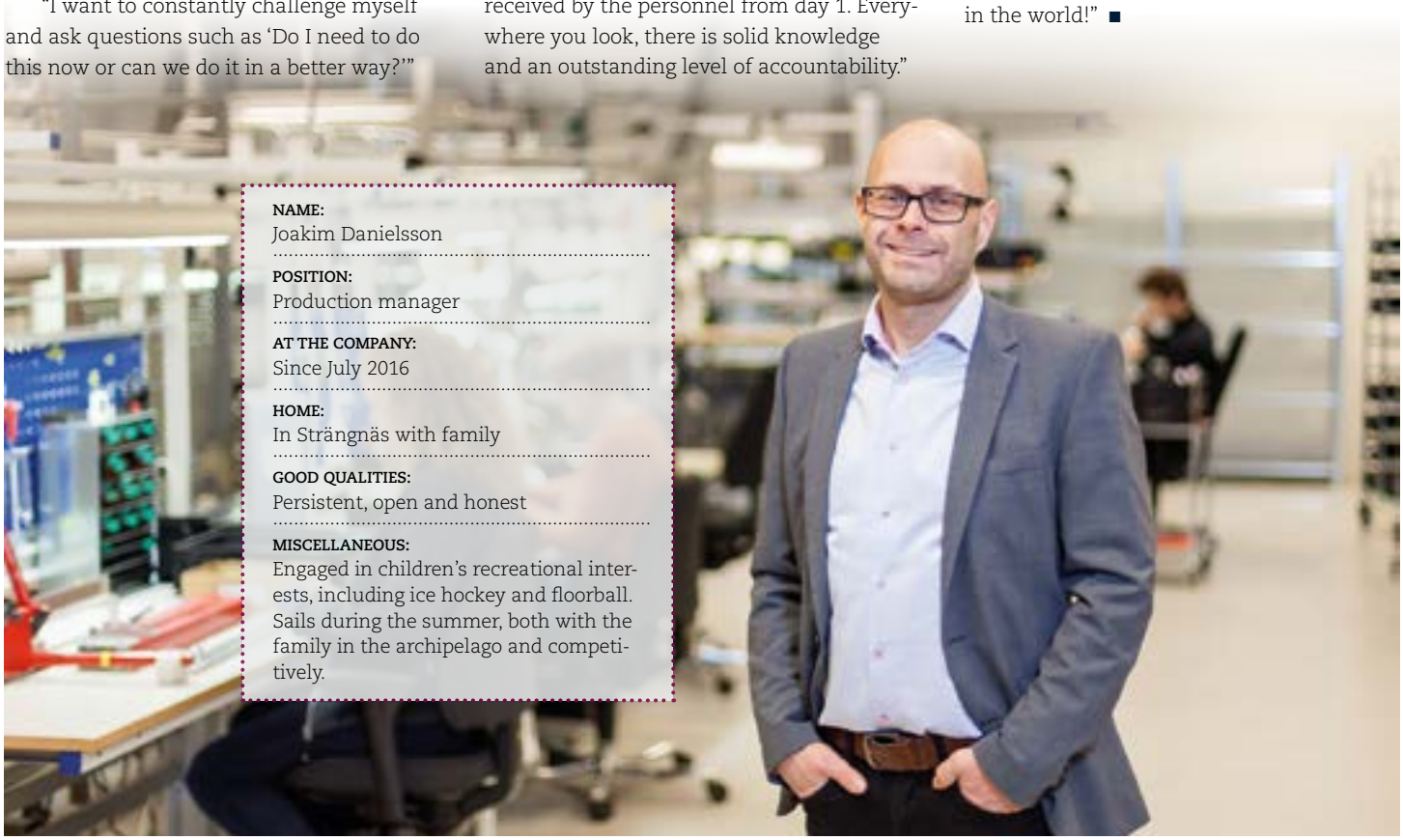
"I want to constantly challenge myself and ask questions such as 'Do I need to do this now or can we do it in a better way?'" says production manager Joakim Danielsson. "If something has gone wrong, how can we avoid a reoccurrence? Everything we do must be with the customer in mind. This is the basis for creating value and it permeates the entire organisation."

Joakim Danielsson came to Leine & Linde with experience from companies such as AstraZeneca, Saab and Bombardier, where he had worked with development, production and operational development. He replaced Per Andréason as the production manager, when Andréason moved on to his current position as the CEO.

"Something I've learned over the years is that cooperation and communication are a common denominator for success," Danielsson says, and emphasises that the company has both. "I was extremely well received by the personnel from day 1. Everywhere you look, there is solid knowledge and an outstanding level of accountability."

Leine & Linde's strength is in adapting and developing products and systems for its customers. This is naturally seen in production, with its flexible layout and organisation that can be adapted as needed. It is the production manager who also has the ultimate responsibility for the company's facilities. They must be constantly adapted to operational needs and demands, and kept up-to-date in order to continue delivering products with the highest quality.

"What's exciting about Leine & Linde is the enormous potential we have," says Joakim Danielsson. "Exciting products and several new system solutions and customer projects, along with the personnel's experience and expertise, as well as facilities with good prerequisites for growth – all these things add up to me having the funnest job in the world!" ■



NAME:
Joakim Danielsson

POSITION:
Production manager

AT THE COMPANY:
Since July 2016

HOME:
In Strängnäs with family

GOOD QUALITIES:
Persistent, open and honest

MISCELLANEOUS:
Engaged in children's recreational interests, including ice hockey and floorball. Sails during the summer, both with the family in the archipelago and competitively.

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