

THE TECHNOLOGY AND PEOPLE AT LEINE & LINDE

No. 1 2014

Impulse

**900
PREMIUM**

**Next generation
encoder**

Page 8

PERFECT PRECISION

at Gruvön paper mill

Page 6

Development

**SUITABLE FOR LARGE
HOLLOW SHAFTS**

Page 3

Assignment

**THE PANAMA CANAL'S
NEW LOCK GATES**

Page 5

Communication

**FAST AND PRECISE
WITH ETHERCAT**

Page 10

An inspiring journey

IT IS INEVITABLE that many anecdotes will circulate in a company that has been around for almost 50 years. Perhaps not all are exactly true, but that doesn't really matter. At Leine & Linde, we have the story of an employee who had to go to the post office but came back with the parcel, as his need to satisfy his thirst meant he didn't have enough money left for the postage. We also have the story of the company's first salesman, who during the 1980s set out into the big wide world to sell encoders and was a little embarrassed to have to borrow money from the consulate in order to get home again.

DURING MY TIME at Leine & Linde, I have undoubtedly contributed to a few stories; after all, we all make mistakes. When we launch ourselves into something new, it is in the hope that we will get by and in an industry with so many competitors, there is very little margin for error. As I near the end of my career, I can happily say that we have managed to avoid most pitfalls. On the contrary, we are today a thriving company with a strong presence in most markets of interest to us around the world.

IF SOMEONE had asked me 20 years ago what I would be doing today, my answer would undoubtedly have been something very different from CEO of Leine & Linde. Yet I am very grateful that my career path has led me to where I am today. It has been an inspiring journey, one that has given me the opportunity to meet and work with many wonderful people. I would like to thank our customers, employees and everyone else who has made it possible for Leine & Linde to develop into the respected global supplier of encoders that it is today.

I WILL ALWAYS cherish the confidence and belief you have shown in me and our company over these past years as I fill my day with other interests.

Thank you for my time here.
And pleasant reading!

Strängnäs, September 2014
Björn Zetterlund
CEO, Leine & Linde



VALUES FOR THE CLASSIFICATION OF RELIABLE SYSTEMS

TO MARKET a machine or safety component within the EU, the product must comply with the European Machinery Directive 2006/42/EC. The Machinery Directive's fundamental requirements concerning reliability are aimed at reducing the possible risks which can arise during the operation of machinery, leading to dangerous situations for the operator or others within the risk area.

To demonstrate that a component or system complies with the Machinery Directive, an appropriate harmonised standard or harmonised product standard must be followed. One of these standards, EN ISO 13849-1 (derived from EN 954-1), is used to classify a system's risk reduction level. The levels are specified using Performance Levels (PL), with five different levels: PL a-e, where PL e is the highest degree of risk reduction.

As regards the classification of electrical, electronic or programmable electronic control systems, EN IEC 62061 is followed. According to the standard, systems built up from sub-systems in accordance with IEC 61508 are certified and categorised with a Safety Integrity Level (SIL) at level 1, 2, 3 or 4.

When Leine & Linde's encoders are used as a component in a reliable system, the encoder's reliability value is needed in order to compute the system's classification in accordance with PL or SIL. The values for MTTFd (mean time to a dangerous failure) and PFHd (probability of dangerous failure per hour) are therefore available for Leine & Linde's encoder ranges. ■



The making of an encoder

Go behind the scenes at Leine & Linde's ultra-modern plant in Strängnäs. There is a film on YouTube which will give you an insight into the manufacture of robust encoders, covering everything from optics and electronics to the finished product. You can find it here:

www.youtube.com/LeineLinde. ■



SMART ENCODERS FOR LARGE SHAFTS

The next generation of wind farms requires new methods for speed feedback. Leine & Linde meets this need with the 2000 series of encoders, which are suitable for large hollow shafts.

WITHIN THE WIND POWER INDUSTRY, continual development is under way to increase the power output of wind turbines, while at the same time reducing the weight of structures. This may seem contradictory, but it is made possible by using various technologies. In recent years, the number of components has been cut and the overall length of the machinery has been reduced. This has been made possible thanks to recently developed generators.

New speed reading method

As a supplier of encoders for speed feedback, technological development also impacts on Leine & Linde. Encoders are traditionally fitted at the rear end of the generator shaft. With the new technology, the encoder is now fitted on the main shaft between the generator and the rotor blade instead. This part of the shaft is very coarse compared with a traditional encoder, as it supports the entire structure, including the generator and the rotor blades. Shaft diameters of up to 1m are common. It is a heavy structure which rests on the shaft. Leine & Linde's solution to the problem is a completely new type of encoder. It consists of a large metal ring which is attached to the turbine shaft and rotates with it, as well as a separate pick-up device mounted immediately adjacent to the ring.

"There are a number of benefits to be gained from placing the speed sensor directly on the main shaft. It gives designers greater freedom during the design phase. It also avoids extra mechanical parts such as adapter shafts and flanges," says Per-Johan Ahlström, Product Manager at Leine & Linde.

The ring itself has magnetic north and south poles placed along its

outer diameter. The pick-up device scans these poles and converts the alternations between the poles into electrical pulses. The signal which it emits is therefore identical to a classic optical encoder.

No moving parts

The solution of using a separate pick-up device means there are no moving parts in the encoder.

"As there are no ball bearings or other contact surfaces, it will be immune to mechanical wear. The mechanical lifetime will therefore essentially be unlimited. And it will of course be ideal for application in heavy industry, where machinery is normally subjected to substantial stresses," explains Per-Johan Ahlström.

Measuring the speed directly on the main shaft also has functional benefits.

"It means you will know the actual speed of the machinery with certainty, even if the gearbox or generator should fail," says Per-Johan Ahlström.

All technology is situated in the separate pick-up device, so it is relatively easy to produce customised solutions

to the ring itself. The technology imposes no limits as regards the size that is used.

In addition to the wind power industry, other industries have also given the 2000 series a warm welcome. Process industry is often looking for rings that are smaller than the enormous structures used in wind turbines. Leine & Linde are therefore expanding their standard range with dimensions for 100 to 310 mm shafts. The scanning frequency is also upgraded to 100 kHz in order to cover most relevant applications within heavy industry.

Intelligent design

The location of the ring around a shaft, half-way between other components in the machine, means that it may be difficult to access and install. The ring has therefore been designed in two or more segments, which are each threaded into a separate hole in the shaft and screwed together. This makes it possible to fit the ring after the generator has been fitted, so facilitating the manufacture

of the machine and making servicing easier. Both transport and storage are of course made easier too. ■

NEW PRODUCT

Per-Johan Ahlström shows off Leine & Linde's 2000 encoder and associated pick-up device.



NEW FUNCTIONALITIES



DRIVE-CLiQ now in the 600 series

As long ago as 2012, Leine & Linde introduced the Siemens Sinamics communication interface for drive systems, DRIVE-CLiQ, in the 900 series. The interface is now also being introduced into the inductive 600 series in order to meet demand for applications that require a robust Ø58 mm encoder. DRIVE-CLiQ's Ethernet-based protocol is used to connect together components such as frequency converters, motors and encoders in a simple way. Leine & Linde offers many different mechanical versions of encoder with DRIVE-CLiQ. ■



Programmable speed monitor offers flexibility

Leine & Linde's integrated speed monitor now has added functionality with programmable levels. The speed monitor is a supplement to incremental encoders and is used in applications where secure speed feedback is critical in order to protect motors and machinery from failure, for example. The encoder signal is supplemented with up to four relay outputs which open in the event of overspeed and one relay which opens in the event of a functional error.

As the criteria speed can vary for different applications, the programming option offers considerable flexibility – a standard device can be supplied for different applications and programmed with the unique levels that apply to each installation. The functionality is now available integrated in Leine & Linde's 800 and 1000 series encoders, and as a separate gateway to which an arbitrary incremental encoder can be connected.

Programming is carried out via USB and PC software. Up to four separate relay outputs can be programmed with different speeds. ■



PROFINET in Gateway

Leine & Linde is now offering the PROFINET interface in a gateway solution for its EnDat encoders. The gateway concept has a number of advantages in the unlikely event of an EnDat encoder failing. In such an event, it will be possible to change the encoder without any need to break the PROFINET bus. As small, robust EnDat encoders are used, the solution is also suitable for use in demanding environments with high ambient temperatures. The gateway is compatible with all Leine & Linde singleturn and multiturn EnDat encoders. ■

ALL ABOUT YOUR ENCODER IN THE PRODUCT FINDER

LEINE & LINDE'S PRODUCT FINDER contains easy-to-find datasheets, 3D models and other material relating to your pulse encoder. You can search on article number or find the right encoder by choosing between a number of technical criteria. This year, the product finder has been further improved with customised filter options according to function and clearer search results. The download page for installation instructions, software manuals and product brochures has also been updated to make it easier to find material in different languages.

Welcome to www.leinelinde.com. ■



HISTORIC ENGINEERING IN A LARGE FORMAT

No less than 4,500 tonnes is moved with perfect precision every five minutes, without any interruption. Leine & Linde's encoders safeguard the operation of the lock gates in the new Panama Canal.

IT HAS BEEN designated one of the modern wonders of the world. Few structures have been as important as the Panama Canal either. Although the construction project was enveloped by enormous problems and cost the lives of around 27,500 workers, the canal is today an impressive monument to human endeavour and innovation.

When the 82km-long waterway between the Pacific Ocean and the Atlantic Ocean was opened, ships were at last able to avoid the dangerous waters around Cape Horn and the sailing time between New York and San Francisco could be halved. Ever since the canal opened in 1920, it has been one of the world's most heavily used canals and sees around 14,000 passages a year.

However, for many of today's gigantic cargo vessels, even the Panama Canal is just too narrow. Since 2007, a massive project to expand the canal has therefore been under way. Nearly seven billion US dollars will be invested in the development project, which is being constructed alongside the existing canal. Around 6,000 people are working on site to complete the new route. The opening ceremony is scheduled for 2015. The canal will then enable the passage of vessels up to 1,200-feet long and 160-feet wide, which is 25% longer and almost 40% wider compared with the current situation. These enormous vessels can carry up to 12,600 containers,



representing a doubling of existing capacity.

16 new lock gates

The most prestigious assignment above all others in this historic project is the responsibility of Italian Cimolai and Cimolai Technology SpA, which is supplying the 16 new lock gates for the canal and their drive mechanisms. Each gate measures 60 metres, with a height of 30 metres and a width of 10 metres. The 4,500 tonne gates must be opened in less than five minutes, hundreds of times a week. The reliability of the lock gates is one of Cimolai Technology's biggest challenges. Any failure would force the entire canal to close, with the inevitable disastrous consequences that would entail.

Total reliability

The solutions were found in new technology and components which offered total reliability. For Cimolai Technology's specialists, it was

natural to work with Leine & Linde, a company which they knew would be able to deliver what was needed. Key components in the new lock gates' drive system are robust encoders from Leine & Linde.

The gate winches are powered by motors with feedback from Leine & Linde's model 861 incremental encoders. This model is a big seller, with decades of proven reliability among motor and generator manufacturers around the world.

To control the position of the lock gates, absolute encoders are mounted on the drum winch's low speed shaft. Leine & Linde's Extreme 1000 series, adapted for the most demanding and critical applications, was chosen for this application. With its exceptional durability and reliability in extreme environments, it will be key to the reliability of the canal once its enormous capacity increase has been realised. And a natural continuation of the history of the Panama Canal as a piece of engineering art. ■

THE PANAMA CANAL

Ever since the 1920s, the artificial waterway between the Atlantic Ocean and the Pacific Ocean has been one of the world's most heavily used canals.

At Cimolai Technology's factory in Carmignano del Brenta, Italy, they are preparing the complete drive mechanisms that will be used to open and close the lock gates.



FLUTING FACTORY AT THE FOREFRONT

BillerudKorsnäs' Gruvön paper mill produces world-leading packaging materials. Speed is monitored using Leine & Lindes encoders and the ADS Online diagnostics system.

Fredrik Gustafsson of BillerudKorsnäs and Håkan Karlsson of Leine & Linde stand in front of paper machine 6.

SWEDISH FORESTS and production processes, combining tradition and innovation – that is the formula for creating world-leading packaging materials.

At Gruvön by the shore of Lake Vänern in Grums, all the characteristics of BillerudKorsnäs pulp and paper mill are brought together. The plant has led the development of packaging paper for many decades. For example, in the early 1970s, Gruvön's PM4 was the first paper machine anywhere in the world to be controlled by a process computer.

Being in the lead has paid off too. BillerudKorsnäs' virgin fibre-based fluting – the folded middle layer in corrugated cardboard – is the leader thanks to its strength and is used in corrugated cardboard applications worldwide, primarily within the food industry. In addition to corrugated raw materials, such as fluting and liners, the plant at Gruvön produces craft paper, sack paper, liquid packaging board, cup stock and virgin pulp. The plant's production capacity is 685,000 tonnes per year.

Production

No finished consumer products are produced at Gruvön, but the entire process, from log to customised paper material on a roll, is handled in the various processes at the plant. BillerudKorsnäs' world-leading fluting, Billerud Flute®, uses birch, a type of wood with short fibres which produces a paper which can tolerate a high degree of compression. The logs are debarked and cut up into

chips, which are then boiled in a continuous Kamyr boiler. The chips are defibered to produce the correct quality. The paper pulp is then washed and diluted with water to form a pulp suspension, before it is ready for the paper machine.

Reliable speed feedback

The paper machines are the heart of the production process. Here, the suspension is formed into a paper web, which passes up, down, over and under 59 drying cylinders. The paper web travels at around 600 metres per minute and is pressed, dried and finally rolled up to a reel, which weighs 22 tonnes. The production process never stops.

Every 40 minutes, the machine switches to a new reel. On Gruvön's PM6 line is an 800 series Leine & Linde encoder, with ADS Online and ADS Classic diagnostics systems installed for speed feedback.

"Stoppages at a paper mill are a serious matter and very expensive, so it is incredibly important that the encoders are reliable. So far they have been rolling without any problems. We have not had any incidents that have been caused by the encoders," says Fredrik Gustafsson, Electrical and Automation Engineer at Central Maintenance.

Using the ADS diagnostics, Fredrik and his colleagues can continually monitor the operation of the encoders and check the status via LEDs and the signal cable. Detailed data concerning the status of the encoders is also sent for analysis via PC software, which shows the current situation and status trends clearly. The system will give a warning of incipient faults before they occur, which enables servicing to be carried out as and when required only and on planned occasions. In ADS Online, all communication between encoder and software takes place via an Ethernet interface.

Absolute encoders from Leine & Linde's 600 series are also used.

These encoders give position feedback to enable the positioning of the paper roll to be controlled.

"The line has a total of 15 encoders. High temperatures and vibrations are what cause the encoders the greatest wear here. The system works and maintenance has gone well," says Fredrik Gustafsson.

Eight production plants

It was in 2012 that Billerud acquired Korsnäs from Kinnevik and formed BillerudKorsnäs. The company now has eight production facilities, 4,300 employees and a turnover of SEK 20 billion. Around 850 people work at Gruvön, making BillerudKorsnäs one

of the county of Värmland's biggest private employers. Environmental commitment permeates the entire organisation.

The clean, strong new fibres are sourced from sustainable forestry – for every tree that is felled to make paper, Billerud-Korsnäs plants between two and four new ones. The paper manufacturing process uses large quantities of water, which is then treated and returned to the natural cycle. As BillerudKorsnäs' materials are manufactured from new fibre, the finished products are also an important part of the cycle for recycled paper. ■

"STOPPAGES ARE A SERIOUS MATTER"

Tip!

UPGRADE MODULE FOR ADS ONLINE

If you have a standard 850, 861 or 862 encoder model, you can now upgrade it with diagnostics. Leine & Linde have developed a module which enables you to swap the back cover on your existing encoder for a back cover with inbuilt diagnostics. Encoders with ADS Classic can also be upgraded to ADS Online in order to gain access to vibration data, for example. With this solution, you gain diagnostics without having to pay for a completely new encoder.





The next-generation encoder has arrived

Robust, reliable and flexible. With the new 900 series, Leine & Linde has developed a user-friendly encoder for the future.

LEINE & LINDE'S ENCODERS are renowned for their reliability in demanding environments. With the launch of the Premium 900 series, a step further is being taken in the development process. Decades of experience in applications within heavy industry have resulted in an encoder which offers the latest in movement control.

Machinery is becoming ever-more advanced, and complex movement patterns need to be monitored in order to give complete control over processes. The 900 series meets this need using absolute scanning, which enables high-resolution position feedback.

Compact and robust

The compact inductive scanning process has made it possible to introduce durable

bearings and add more advanced functionality, without increasing the overall size of the encoder. The inductive scanning method can cope with vibration and shocks.

The inductive 900 series is very flexible as regards mechanical configuration and communication interfaces. The encoder is available with a wide variety of shaft dimensions – hollow shaft or solid shaft – as well as electrical connection options – contact, cable or terminal connection. The series supports interfaces such as SSI, EnDat, PROFIBUS, DRIVE-CLiQ and EtherCAT. The flexibility also makes it possible to combine the above interfaces with incremental signals from the same encoder.

The 900 series encoders have been designed for use in tough applications, where robustness, reliability and long life are key. ■



Check out the full details of the 900 Premium

For more information about Leine & Linde's 900 series, visit www.leinelinde.com. There, you will be able to order or download a comprehensive product brochure.



DOUBLE-CERTIFIED ENCODERS FOR EXPLOSIVE ENVIRONMENTS

LEINE & LINDE'S ENCODERS rarely operate in benign environments. Within the chemical, oil and gas industries, they are often surrounded by explosive gases. In other industries, dust particles from flour or sawdust may for example be present, leading to an explosion hazard. For these so-called 'Ex' environments, demanding requirements are imposed concerning electrical appliances through a comprehensive set of regulations. There are two important certification systems, in particular, within the Ex field – the European ATEX directive and the international standard IECEx. It must be possible to use an ATEX-certified product throughout the EU. Certification in accordance with IECEx enables products to be used in countries affiliated to the IECEx system.

In the 600 series, Leine & Linde is now launching its first absolute encoder certified in accordance with

both ATEX and IECEx for Ex d applications. The encoder is flameproof and can be used in zones 1/21, which defines gas and dust environments where the atmosphere may temporarily be explosive during normal operation.

Copes with extreme stresses

The 600 series Ex d-certified encoders have been developed for demanding environments. Key to the encoder's ability to cope with temperature changes, shocks and vibrations are the ball bearings.

"In order to guarantee market-leading lifetime, we have used the same ball bearings as we use in our successful heavy duty encoders. This gives the Ex d-certified encoder the same ability to cope with the substantial stresses that exist in marine and oil & gas applications, for example," says Linda Carnbo, Product Manager at Leine & Linde.

Leine & Linde's Ex-d absolute encoders are available in temperature classes T6, T5 and T4. Thanks to the use of stainless and acid-resistant steel, the encoder is resistant to all normal and point corrosion. It also fulfils enclosure classes IP66 and IP67, indicating that the encoder is both dust- and water-tight in accordance with IEC 60529.

Flexibility

In the 600 series, inductive scanning is used for position determination, which is insensitive to knocks and dirt. The maximum resolution is 31-bit, 19-bit singleturn resolution combined with 12-bit multiturn resolution.

Despite the strict certification, Leine & Linde are able to offer a wide range as regards both mechanical configuration and communication interfaces. Ex d-certified encoders are available with a hollow or solid shaft

Good news for the oil and gas market. Leine & Linde is now launching its first absolute encoder certified in accordance with both ATEX and IECEx.



in a variety of sizes and can be connected via interfaces such as PROFIBUS, PROFINET, DeviceNet, CANopen and SSI.

"This, combined with the double certification, makes our 600 series encoders a very flexible and reliable alternative for a wide variety applications. Even in the most demanding of environments," says Linda Carnbo. ■



Linda Carnbo,
Product Manager
at Leine & Linde.

COMMUNICATION WITH MICROSECOND PRECISION

Fast, stable and flexible communication with industrial Ethernet protocol. Leine & Linde are introducing high-performance EtherCAT in two of their inductive encoders.

TODAY, Ethernet is in use virtually everywhere. It is cost-effective and offers common physical interfaces and high speed. Industrial communication protocols such as PROFIBUS and CANopen are increasingly switching to Ethernet-based solutions. Compared with TCP/IP, which we are familiar with from the office and the internet, industrial Ethernet protocols have a modified layer for MAC access, which gives low delay and predictable response times. Ethernet also makes it possible to have both an adaptable network topology and a flexible number of nodes in the system.

Leine & Linde have had encoders with PROFINET in their range for many years. In the 600 and 900 series, a competing industrial Ethernet protocol with high performance is now also being introduced, EtherCAT.

Fast and precise

EtherCAT's functional principle can be likened to a train, where data can be loaded and unloaded at each station (network device) while the train is passing the station at full speed. The train never stops and always sticks to its timetable. It returns to the same station with a precision of less than one microsecond. The time between two delivery times is called the 'cycle time' and for EtherCAT can be set to as little as a few tenths of a microsecond. In order to deliver new data each time the train passes, speed at each station is also necessary. Between two delivery times, a connected position sensor must, for example, read the current position, process the value according to the chosen configuration and compute a speed value.

ETHERCAT IN A WIDE RANGE

EtherCAT is being introduced into Leine & Linde's 600 and 900 series inductive encoders, in both solid and hollow shaft versions, which makes the interface available in encoder sizes Ø58 mm and Ø100 mm. Thanks to optimisation of the electronics, the interface can also cope with the shortest cycle times, resulting in a broad range of applications in everything from process industry to steelworks and wind farms.

Leine & Linde has optimised the electronics in the new encoders with an EtherCAT interface in order to handle even the shortest cycle times.

Simple configuration

In traditional fieldbus devices with PROFIBUS, for example, the user has to set the address for each device on the bus. With Ethernet-based solutions, this is handled by the system. The user need only connect the device and configure it via the accompanying XML file.

Leine & Linde's encoders with an EtherCAT interface have powerful electronics and, in addition to the traditional position value, can deliver speed and acceleration values with great precision and speed. This also enables direct feedback for fast control systems via EtherCAT.

CANopen-compatible

The functionality of devices connected to EtherCAT is determined by CANopen profiles and is continuing to be developed within CAN-in-Automation. This means that users with experience of CANopen will quickly feel at home. ■



HOT OFF THE PRESS

New sales office opens in Brazil

Leine & Linde's new sales office in São Paulo has opened its doors, with plenty of specialist expertise in place. Sales manager Paulo Mêndola has over 20 years' experience within the automation and electrical components sectors. Over the years, he has been involved in the development of automation solutions for a wide variety of applications in the encoder market. Together with Douglas Jorge Barreto, Administrative Manager, Paulo Mêndola is now responsible for all sales activities in Brazil.

The country's economy is rapidly expanding and has seen many years of positive development within industries such as mining, steel, paper, energy, wind power, cranes and shipping. For Leine & Linde, it was logical to establish a local sales office.

"Speaking the same language and having a local presence is a major advantage in improving accessibility and support for our customers. We are really looking forward to strengthening Leine & Linde's position in Brazil," says Paulo Mêndola.

Contact

Paulo Mêndola, Sales Manager
Mobile: +55-19-9909-5769
Email: p.mendola@leinelinde.com.br

Leine & Linde Brasil Ltda
Av. José Rocha Bonfi m nº 214, Room 217 of Chicago bloc, Praça Capital Cond. 13080-650 Sta Genebra, Campinas, São Paulo, Brazil.
Telephone: +55-19-3367-5657
Fax: +55-19-3367-5658 ■



Paulo Mêndola



Douglas J. Barreto



Francesc Comas

Merger boosts presence in Spain and Portugal

After a ten-year partnership with local distributor Valltecnic Electrónica S.L., Leine & Linde's products are well-established in the Spanish market. The company's operations have now been merged to form a Leine & Linde branch in Spain.

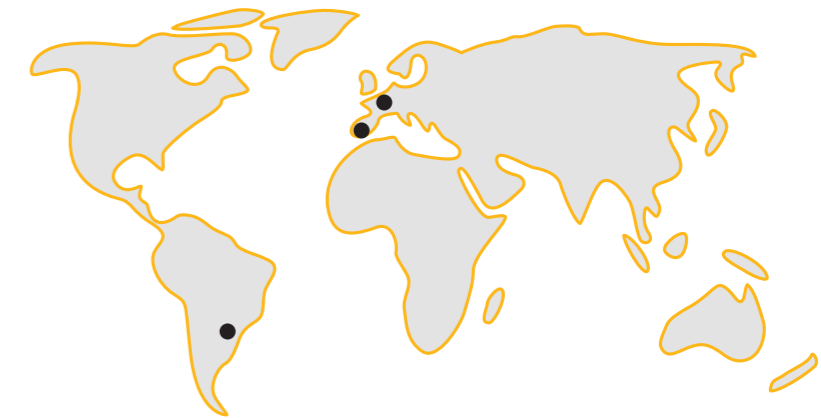
The country has a relatively large and expansive industry within areas such as cranes, marine engines, paper, wind power and steel. With a stronger local presence, Leine & Linde will be able to meet the demand for know-how, new technology, service and quality.

"We are looking to expand in the Spanish and Portuguese markets by listening to our customers' wishes and supplying them with custom solutions from our wide range of products," says Sales Manager Francesc Comas.

Contact

Francesc Comas, Sales Manager
Mobile: +34-647-41 19 13
Email: f.comas@leinelinde.es

Leine & Linde AB
Edificio La Plana, C/Pau Claris 18, 1ª4ª
08130 Sta Perpetua de la Mogoda, Barcelona, Spain.
Telephone: +34-93-574 23 02
Fax: +34-93-560 57 60 ■



Leine & Linde move to new address in Germany

In order to provide better service to the German-speaking market in Europe, Leine & Linde's German branch has undergone a number of changes. The office relocated to Hamburg on 1 April earlier this year. The office therefore has a new address and telephone number, but Andreas Frochte and Klaus Korger remain contact persons as before, with responsibility for the northern and southern regions respectively.

Contact

Northern Germany: Andreas Frochte
Mobile: +49-151-15545497
Email: a.frochte@leinelinde.de

Southern Germany: Klaus Korger
Mobile: +49-171-3602887
Email: k.korger@leinelinde.de

Leine & Linde AB
Am Sandtorkai 50
DE-20457 Hamburg, Germany.
Telephone: +49-(0)40-3176758-60
Fax: +49-(0)40-3176758-65 ■



Andreas Frochte



Klaus Korger

Meet Leine & Linde at SPS IPC Drives

On 25 November, the doors will open to **SPS IPC Drives 2014** in Nuremberg, Europe's leading trade fair for electrical automation. With over a thousand exhibitors, the fair represents a unique opportunity to catch up on the latest products and trends in the market, but also a chance to meet people within the industry from around the world. Leine & Linde will of course be there with many exciting new developments. Visit Leine & Linde's **stand 351** in **hall A4** during the fair days on **25-27 November**.

For more information, visit www.mesago.de/en/SPS/home. ■

Quality throughout the chain

Tough evaluation and good collaboration. As a strategic buyer, Anna Dahl is a key player in Leine & Linde's procurement processes in order to face the increasingly tough competition.

ANNA DAHL works as a strategic buyer for Leine & Linde. She coordinates procurement with respect to the development department and ensures that Leine & Linde's demanding requirements concerning quality, environment and delivery reliability permeate not only the company's production processes but also the company's suppliers. Every supplier undergoes a thorough evaluation.

"I visit and evaluate new suppliers and review the company's structure, finances, production processes and controls concerning tools and equipment. Only once the supplier has been approved will prototypes be ordered," says Anna Dahl.

For certain critical components, delivery and quality are ensured on an ongoing basis with half-yearly evaluations. During these evaluations, the suppliers are assessed under a number of categories such as delivery precision, finance, quality, support, and quality and environmental certificates.

"If the supplier's rating is too low, an action plan will be required to get the supplier back to the right level again. If that doesn't help, it may even be appropriate to discontinue the collaboration," explains Anna Dahl.

Fast delivery

As the normal delivery time for Leine & Linde's encoders is ten days, suppliers must be able to meet demand very quickly.

"The customer must always receive their products on time." In new agreements, shorter lead-times are an aim. This often requires the supplier to maintain a back-up

store or other suitable logistical solutions, in order to fulfil an order from a customer.

As a strategic buyer at Leine & Linde, it helps to have a solid background. Anna Dahl is an engineering graduate specialising in mechanical engineering and industrial economics. She has previously worked as a production and materials planner, quality manager and strategic buyer within the automotive industry. Almost three years ago, she joined the procurement department at Leine & Linde, where she also works on process improvement, risk management and cost reduction.

"It is a happy and professional team. The collaboration is very important, both here within the company and with our suppliers. We have to keep a lot of balls in the air at once, work quickly and yet be very accurate at the same time. Improving and streamlining is a challenge which inspires me," says Anna Dahl. ■

NAME: Anna Dahl

POSITION: Strategic buyer

AGE: 33

LIVES: House in Eskilstuna, together with her partner and four-year old son.

MISCELLANEOUS: Anna Dahl likes to spend her spare time at home with her family. During the summer, you will often find her in her caravan or out in the garden hunting for Spanish snails.



Impulse is published by Leine & Linde. The aim is to provide information about our business and the rapid development of new products and systems.

If you know someone who would like to receive this magazine, please email info@leinelinde.se. You can also download the magazine on the website: www.leinelinde.com.

Leine & Linde AB, Box 8, SE-645 21 Strängnäs, Sweden. Street address: Olivehällsvägen 8. Telephone: +46-(0)152-265 00, fax: +46-(0)152-265 05, email: info@leinelinde.se, www.leinelinde.com.