

LUST | **LTI** | INNOVATION

www.lt-i.com

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FORCE

From a physical point of view force can only either drive or shape.
But there is a force that can do both: the force of innovation.

Force

LUST is changing its global identity. For almost 40 years the name LUST has been a byword on the market for innovation, reliable partnership and quality. It is a name which has enjoyed a high degree of recognition and an outstanding image. We are proud of that heritage. Our business has been changing dramatically in recent years however. The original single company known as Lust Antriebstechnik GmbH has grown into a major Group of companies with an increasingly international reach. We are now adjusting to that new reality: LUST is becoming LTi. We have decided to introduce a new name and logo for our drive and automation businesses. Both are structured in such a way that they promise to become firmly established on the global market, and will open the way to the future growth which is our aim. Our new holding company structure, featuring the umbrella brand LTi (Lust Technology international), along with the transition of management responsibility to the second generation, will give new impetus to our further international development. With this assurance we will be able to strengthen our presence worldwide, using the new LTi brand. Our underlying corporate strategy remains however as it always has been, founded on the penetration and servicing of application-specific market segments. We have been implementing that strategy with great success in recent years, in segments such as medical technology, pumps and compressors for critical media; and not least in the regenerative energies segment. We are going to be expanding our operations in the regenerative energies segment to encompass photovoltaic energy and utilization of waste heat in bio-oil and bio-gas plants and solar power plants. The Productronics market segment is also becoming an ever stronger point of focus in our activities. For myself as the founder of the company, I see the change of name in rational terms as being the right way to go, and indeed as a key step in the ongoing development of the group, even though I struggled long and hard with the decision on an emotional level. The important factor, however, is that all the positive things which the market associates with LUST products will be preserved after the name change. I am quite sure that we will succeed just as well in this undertaking as we have in accomplishing the transition to the next generation in our business. As planned, and step by step, my son Wolfgang has been taking the reins more and more in recent years, and it is he, indeed, who is the driving force behind our targeted conquest of global markets.




Karl-Heinz Lust



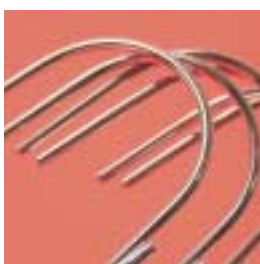
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From tensile strength to muscle man



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Innovations need a driving force



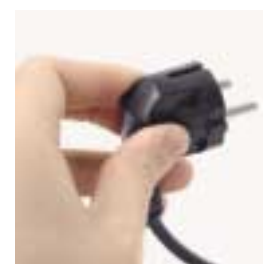
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Innovation

Growth

Internationalism

We have high goals and a new name.

The international demand for our products in the field of drive and automation solutions continues to increase. At the same time we are forming new partnerships across the world. We want to recognise this. With a new name. And an even more international orientation for our company.

Lust Antriebstechnik is renamed as LTI DRIVES!

LUST | **LTI** | DRIVES

Strength denotes a physical or spiritual basis for particular activities (muscular strength; strength training). In the second meaning – performing an activity yourself (exerting strength; breaking down under pressure) the everyday idea of force comes close to the technical physical concept.



MUSCLE MAN

Popeye's legendary vegetable. The high iron content in spinach is however just as mythical and arose probably from a misplaced decimal point. You're better off eating chocolate – the iron content is significantly higher!



facts

FORCE OF LAW

In 2005 913,377 persons were sentenced in courts of law in Germany.



TENSILE STRENGTH

The average thickness of a human hair is a mere 0.12 mm. Each person has approx. 100,000–150,000 hairs, which combined offer a tensile strength of eight tonnes.



POWERFUL COWSLIP

Scientific name: *Primula veris*,
Primula officinalis

Healing effect: calming, cleansing the blood, staunching bleeding, reducing inflammation, diuretic, relieving cramps, releasing mucus, relieving pain



I N N O V A T I O N S N E E D A

driving force

The first sod in Lahnau was turned in 1971, since when our company has generated a succession of innovations. Some 700 employees develop and build state-of-the-art technologies, components, systems and solutions for automation in the industrial, medical and automobile segments. In all areas we create high-end technologies and provide solutions for technologically demanding applications, which are pre-requisites for the competitive success of our business.

How do developers do that; how does a company do that - these are the questions. Where can the ideas for permanent innovation come from? Some force must be at work to drive the management and designers on to continuous development of new solutions: the force of innovation!







FORCE OF INNOVATION – STRENGTH FOR NEW EXPLORATIONS:

Force of innovation, workforce, economic forces, brake force,... many forces play their part in commercial life. They make the difference between success and failure. But what is “force” in its truest sense? We encounter force in many forms, from drives to the centripetal

“A force accelerates a body or deforms it.”

effect. A force can have many origins: we experience the force of gravity, frictional force, centrifugal force, magnetic force, electrical force, muscular force, electro-motive force etc. A force allows us to accelerate things, brake them, lift them, turn them, pull them, deform them etc.

A force has many faces, but in the last analysis the effects of force can be reduced to two variables – and engineers and physicists understand them well: a force accelerates a body or deforms it.

THREE EQUATIONS CREATE AN ENTIRE WORLD

Today it's part of the 5th year physics curriculum, but it's the result of countless observations and formidable thinking power over the years. Archimedes introduced

the technical concept of force, Galileo picked it up and in 1678 Isaac Newton formulated the “Laws of Motion” that we all are taught. Now we do him the honour of measuring force in “Newtons” and his definition is still today the basis of classical mechanics.

Newton's laws are a fantastic toolbox for engineers and physicists, from which the formulae for solving every problem in classical mechanics are derived. Without this exact concept of force we could not calculate the static forces in a building or design an efficient motor.

THE INNOVATIONS ENGINE DOESN'T RUN ON THIN AIR

If three equations are enough to create an entire world, what happens when many people get together and try to research something new? If we're unlucky, nothing happens at all. We certainly know that rigid structures can stifle every idea in infancy. If however we open the gates and motivate scientists, inventors, designers, employees, then no further barriers stand in the way of discovering ideas.

At LTi the gates stand wide open for the discovery of ideas. The management demands and promotes innovative power, creativity and motivation from its employees, who continually work towards innovation. Only when technical talent, full of ideas, is combined with bold entrepreneurial spirit can innovation take shape and create products and services to which customers respond with enthusiasm.

PARTNERS AND CUSTOMERS GIVE A NEW IMPETUS

LTi innovations have for many years extended to more than pure technology; increasingly it is strengths such as flexibility in collaborative customer projects and modern logistics concepts that make for success.

The use of powerful tools for hardware and software development is thus as self-evident for LTi as readiness and capability to work on projects together with customers and end users to work out the optimum solutions, irrespective of whether we are dealing with standard components or individual tailor-made solutions.

LTi actively applies itself to identifying new technologies and processes in national and international R&D projects, which can be further developed and optimised – so that also in future we can offer innovative performance and leading-edge technology. ■

More gigabytes from nano-power:

MR sensors play their part

THIS YEAR'S NOBEL PRIZE FOR PHYSICS was awarded to the German Peter Grünberg and the Frenchman Albert Fert. The award was announced by the Royal Swedish Academy of Sciences on October 9th in Stockholm. The two physicians received the highest honour their profession bestows for their discovery of a magnetic effect which opens up the prospect of hard disk drives with enormous storage capacities.

The effect – known as Giant Magneto-Resistance, or GMR – is deployed by the Sensitec corporation in the manufacture of highly robust, high-precision sensors for the measurement of angles and travel distances, as are nowadays used in large numbers in industrial automation for example.

Sensitec GmbH has longstanding links to the Nobel Prize winner Professor Dr. Grünberg, and has been pleased to welcome him as a guest at almost all Sensitec Symposia.



← Sensitec Chief Executive Karl-Heinz Lust (left) in conversation with Prof. Dr. Peter Grünberg (right), discoverer of the GMR effect.

Sensitec congratulates Professor Dr. Grünberg most warmly on his outstanding achievement, and wishes him every continued success in the future. (ja) ■

Forces need control:

LUST servocontrollers – right on the wire

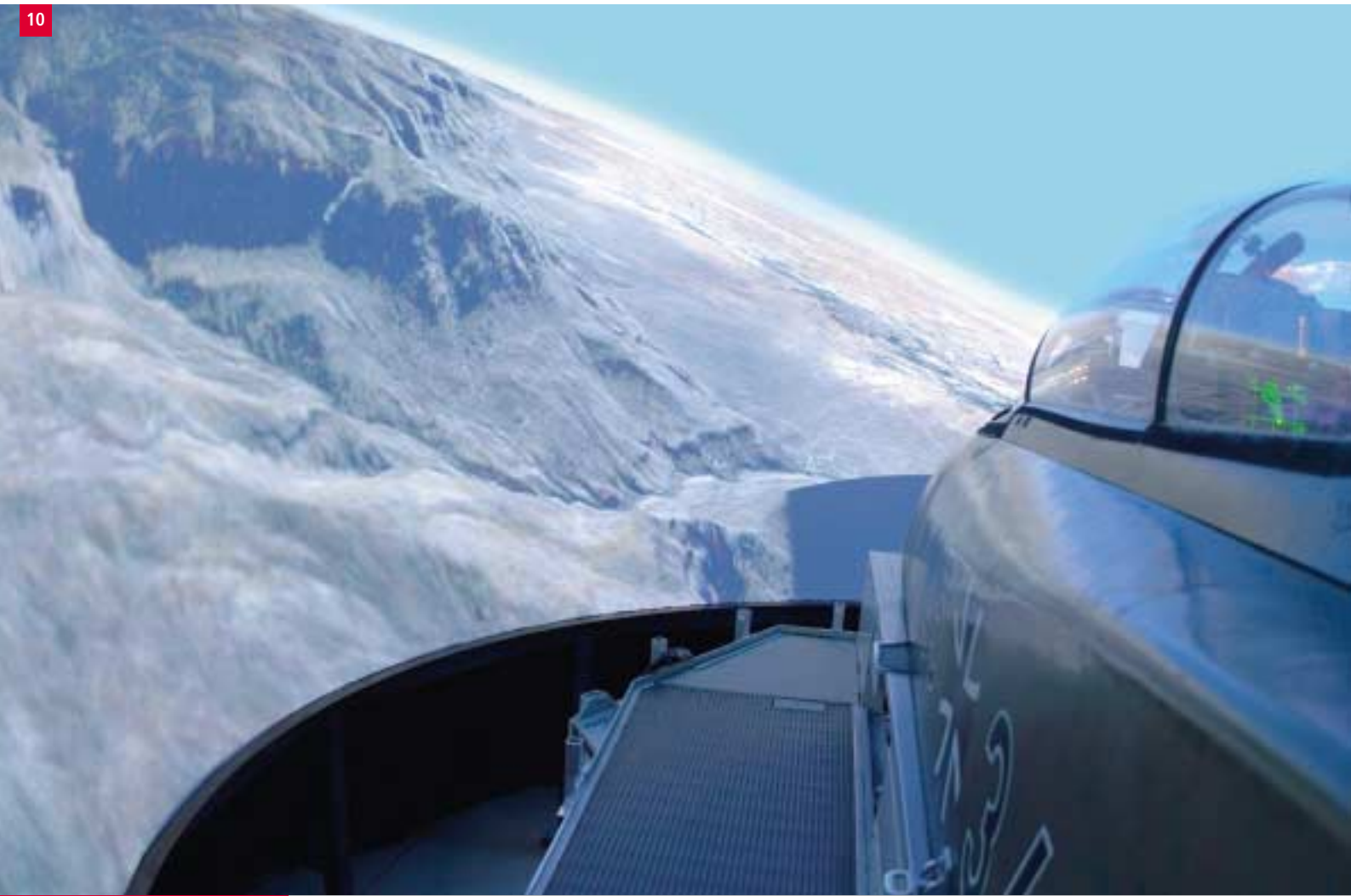
THE MANUFACTURE OF WIRE CLIPS is a highly involved and time-consuming process. A programmable wire clip bending machine has been developed for the purpose in China which is able to process thicker wire in diameters from 6 to 13 mm.

Circular and angular shapes are positioned at a maximum speed of 95 metres per minute and rotated through 1,450°/sec by the CDE3000 servocontrollers. This demands precise, dynamic positioning by the servocontrollers.

The target position is transmitted to the servocontrollers from a PLC over the CANopen bus system – the rest is handled by the drive. It positions precisely, compensating for the process-related mechanical slip by evaluating a second encoder system (TTL). The drives signal back the status over CANopen to the PLC, which holds the data records covering all clip shapes and enables them to be retrieved at the press of a button, with no lengthy setup times.



In conjunction with LUST, the customer has been able to optimise the machine, improve its cost-effectiveness and cut setup times. The machine is now in mass production. (sl) (jc) ■



Into the air with LTi DRIVES

FLIGHT SIMULATORS FOR TRAINING PURPOSES

Just a few years ago, flight simulators were simple moving platforms with a pilot's seat. The platforms changed position with the aid of a joystick control, in a similar way to an aircraft. In order to produce a genuine sensation of flight and so enable visually realistic flight simulation, video cameras were scanned across a terrain model or runway. The camera transmitted the pictures of the plotted runway or terrain into the cockpit.

In the age of high-powered computer systems, the imaging process has been taken over by the computer. It has become possible to build professional flight simulators which no longer differ, in terms of visual experience, from an actual aircraft. This provides the pilot with the sense of sitting in an actual aircraft, and the simulated all-round visibility enables realistic flying exercises to be carried out. As part of that detailed simulator realism, all

the voltages normally supplied by the aircraft's turbines must be provided by separate generators.

To date this has been accomplished by large-scale transformers, with complex systems of cables – sometimes more than 100 metres in length – carrying the required voltages into the simulator interior. With such an installation scenario the required 400 Hz frequency led to

major electromagnetic interference problems. The flexible hose lines carrying the cable had to be checked at regular intervals. The high level of servicing commitment, the volume, weight and heat loss of the transformers resulted in new developments being undertaken.

THE LATEST DEVELOPMENT IN THIS FIELD IS THE FULL FLIGHT SIMULATOR.

In this model, the required frequencies and voltages are generated directly in the simulator. With the aid of the CDA, HF and a downstream sine filter, a constant 400 Hz and the various onboard voltages are supplied. The special modulation of the CDA and the current-adjusted voltage levels mean the various voltages are kept constant even under fluctuating load. The short cabling reduces electromagnetic interference to a minimum.

In contrast to the external transformer, which is subject to no motion at all, the inverter and the sine filter make all the motions of the simulator. To ensure this can be handled smoothly, extensive testing was carried out over a number of months, during which the CDA had to prove its stability in normal flight operations and in the course of which multiple G-forces were often encountered. Having passed the test phase, the first full flight simulators are now in operation, and are producing top-class results.

Based on their compact size, their outstanding EMC performance, the cascaded amperage of the individual modules and – not least – their low price, these flight simulators deliver many new benefits in terms of servicing and commissioning.

Our customer is a highly respected company operating in the development, manufacture and servicing of simulation systems and unified communications systems.

Having passed the test phase, the first full flight simulators are now in operation, and are producing top-class results.

Alongside the German Military and NATO procurement agencies, Defence Ministries of various European nations and airlines, it also serves leading industrial corporations in well over 20 countries. The company has for many years guaranteed the quality of its products and services in accordance with international standards.

(bk) ■

*With the kind consent of CAE Electronics GmbH,
52222 Stolberg, Germany, www.cae.de*

► Real flight sensation in the Full Flight Simulator.



CDB3000 produces KMF stainless steel motors

MACHINERY IN THE FOOD INDUSTRY

is cleaned several times a day. In order to fulfil the stringent hygiene requirements, this cleaning is carried out with concentrated caustic solution. No coating is able to withstand such treatment over a period of time. For that reason, food machinery is mostly made of stainless steel. Where motors are installed in hygiene zones, the use of stainless steel motors is the best option.

Netherlands-based Electro ABI – a longstanding partner of Lust Antriebstechnik GmbH – has been producing electric motors and gearing under the brand name KMF for the last 50 years. For hygiene applications it has developed stainless steel motors with extremely high IP68 protection. The motors are currently available in power outputs up to 1.5 kW.

Demand for these stainless steel motors has risen sharply, resulting in the need for further automation of the motor production process. To that end, ABI has constructed a production plant for the drilling and assembly stages of the operation.



← The rotor of the KMF motor is pressed into the stainless steel casing by the CDB3000 positioning inverter and radially drilled.

Photo: Electro ABI bv

The plant features three linear axes and an indexing table driven by four CDB32.004 positioning inverters from LUST. All drives are equipped with a pulse encoder, and are connected over CANopen to the control system.

All positions and torques for the different motor dimensions are stored in the control. These values are transmitted over CANopen to the CDB3000. Format conversion to a different motor type is effected simply at the press of a button on the operator control panel. The CDB3000 additionally actuates a frequency inverter via its analog output to set the different rotation speeds of the drilling units.

The LUST CDB3000 makes it possible to deploy low-cost three-phase AC motors for functions which would previously have required the use of servomotors. As the CDB3000 conforms to the CANopen Profile DSP402, the link to the CANopen master was quickly established.

We are very confident that the new production plant featuring the CDB3000 drives from LUST will produce many thousands of stainless steel motors over the coming years.

For more information on stainless steel motors or about this machine go to: www.abi.nl.

(cvv) ■



A milling machine attracting all the superlatives

USERS DEMAND THAT new machine tools deliver cost cutting and time saving in the production process. Consequently, machine speed is a key factor alongside the required levels of precision. In order to meet both requirements at the same time, the control, drive and mechanical construction components must form an optimally attuned interworking system.

An outstanding example of a successful mechatronic machine design is the five-axis milling machine from METROM GmbH. The company owns the worldwide patent for this parallel-kinematics milling machine, which is capable of machining a workpiece from five sides simultaneously without having to reposition it. Whereas the commonly used existing serial five-axis machines always require additional axes to be moved, with parallel kinematics only the main spindle is moved. This enables very high acceleration rates and machining speeds. As a further plus, the parallel structure offers an exceptional degree of rigidity even over long travel ranges. Applications extend from mould and model construction in foundries and the production of complicated specialist parts for the aeronautical industry to milled sculptures.

In its search for suitable partners for this machine, particularly in view of the extraordinary demands it placed, METROM opted for the integrated control and drive solution offered by andron GmbH in collaboration with Lust Antriebstechnik GmbH. In this solution package, the high-end andronic 2060 CNC control and the ServoOne drive controllers form a single unit, developed specially to meet the highest dynamic requirements in machine tool manufacture. The transformation unit built into the control converts Cartesian coordinates into axis lengths, enabling users to write and run their own milling programs just as for a 'normal' milling machine. Communication between the control and the drive in this application is routed over the SERCOS field bus, which permits minimum cycle times of 125 μ s.

In the field of closed-loop control technology the ServoOne is able to reveal the full extent of its strengths. High dynamism and synchronism are demanded for the five axes used in the parallel-kinematics machine as well as for the two gantry axes and the indexing table. The five hollow-shaft synchronous motors can be operated with no absolute value encoder thanks to the intelligent software solution installed in them. The parallel-kinematics move the milling spindle, for which an asynchronous

machine with a large field-weakening range was used. On the large indexing table onto which the workpiece is clamped a state controller with active vibration damping was deployed, thereby greatly increasing the dynamics.



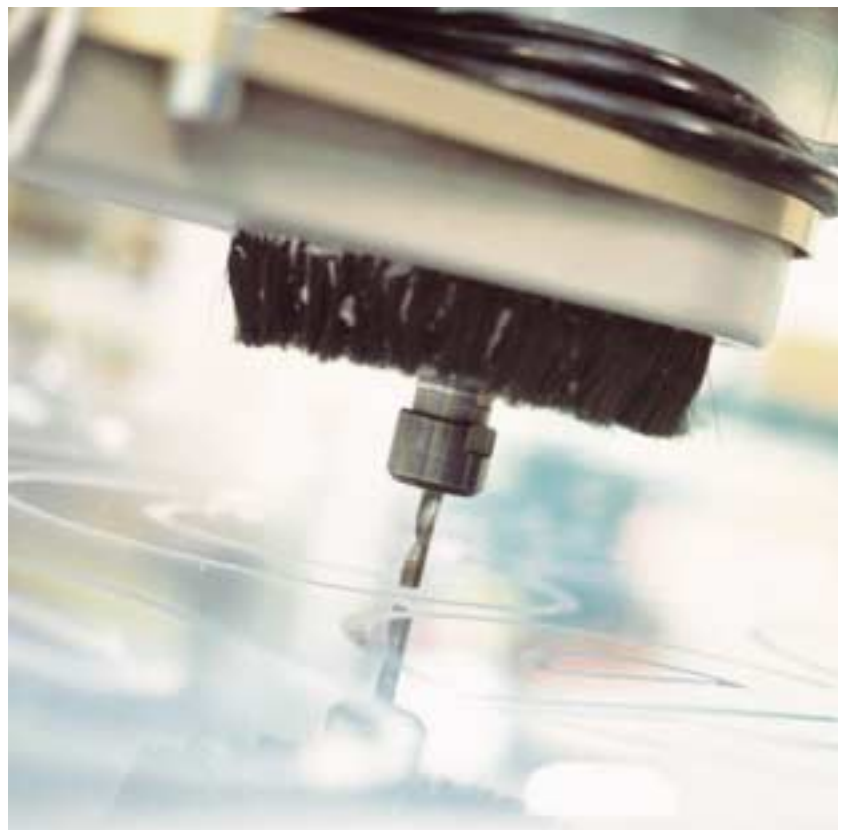
Bild: metrom GmbH

◀ Five-axis parallel-kinematics milling machine P-2000 (METROM GmbH)

Both andron and LUST provide METROM with a number of essential features in their software. The development of such specialist functionality is made possible by the extreme closeness of cooperation between the end customer and the control and drive manufacturers. The new machine concept provides METROM with a key competitive edge in the market segment, and as a result it has already shipped a number of machines to customers within just a short time. (sb) ■

With the kind assistance of andron GmbH, Wasserburg,

www.andron.de and METROM GmbH, Chemnitz, www.metrom.com



High-tech system solutions all from one source



↑ **Turbomolecular pump
MAG W 600 with integrated
converter**

THE MAG300/MAG600 PROJECT, undertaken jointly by LUST and Oerlikon Leybold Vacuum, represents an outstanding example of the enhancement of existing technologies and the successful marketing of complex mass-production mechatronic systems.

The project involved bringing together basic technologies from across the LUST Group in the fields of drive and magnetic bearing technology, motor construction, assembly and connection techniques, sensors and mechatronics to create and implement a high-performance system within an optimum time frame.

The project resulted in the development of a complete drive platform for turbomolecular pumps in collaboration with Oerlikon Leybold Vacuum within a very short space of time. Efforts were sharply focussed on fulfilling the high technical demands – including low system vibration – and on the aim of achieving global competi-

tiveness in terms of cost. LUST is supplying a five-axis active magnetic bearing-supported cartridge unit (bearings, motor, shaft, sensors, housing components). The MAG.DRIVE iS electronics unit (comprising the drive and bearing electronics) can be integrated directly into the pump or cabinet-mounted. The MAG.DRIVE S variant also offers a benchtop unit remote from the vacuum pump itself.

Thanks to the wide-ranging technology pool within the Group, LUST has been able to offer the customer an optimum solution base for this complex project. The amount of adjustment required was minimised, adjustment errors were avoided and as a result production stability was quickly and reliably established. (jm) ■

With the kind assistance of Oerlikon Leybold Vacuum GmbH, Cologne, www.oerlikon.com



The new CDS current sensors

Even more precise, even more dynamic, even smaller

THE POWER ELECTRONICS in state-of-the-art drive systems are becoming ever smaller and are subject to increasingly stringent demands in terms of cost-effectiveness. Demands with regard to current measurement are correspondingly high: even smaller, even more precise, even more cost-effective and even more dynamic sensors are called for. This trend is accompanied by an increased awareness of energy efficiency.

The new CDS4000 current sensor family meets all those requirements, while at the same time offering even more key benefits, providing development engineers with enhanced user-friendliness in development and delivering improved power electronics functionality and features.

The compensatory measurement method means extremely low offsets of less than 0.2 % are attained, and the temperature coefficient of 0.1 % is also very low. A particular highlight is the bandwidth of > 100 kHz at 1 dB or around 1 MHz at 3dB across the entire current range. That also means, for example, that the reaction time to pulse events is < 1 μ sec.

All this is made possible because the current sensors contain no iron and need no flux concentrators. A positive side-effect was that the intrinsic energy consumption of the sensors was further reduced by the deployment of 5V technology. A user-friendly feature, which also

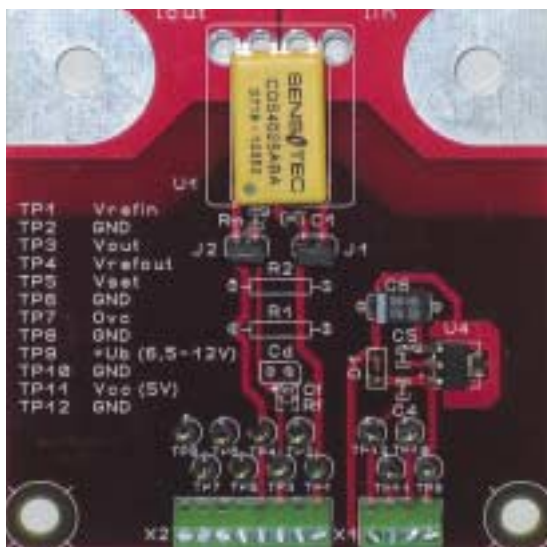


boosts accuracy, is that the internal reference voltage is also available externally, meaning multiple sensors can be operated on the same reference voltage. An already existing external reference voltage can also be applied.

In support of the customer's own safety philosophy, the development engineer can custom-configure the cut-out threshold for triggering of the current overload signal.

Following an extensive period of field trials, the new current sensor family is now available for production applications. The sensors are supplied in eight current ranges from 3 A to 150 A, with a current output signal available from 2 mA at nominal current up to three times the measuring range – that is, up to 6 mA. The size of the nominal currents from 3 A to 50 A is just 7.6x12.5x20.5 mm, and for 50 A to 150 A it is 9x19x24 mm.

To enable interested development engineers to test out all the advantages quickly and easily in their own circuits, a test board can be provided on request featuring a pre-mounted current sensor and all the signal inputs and outputs by way of terminals and measurement points. That's a really user-friendly feature, and makes it much easier to make the right decision. (ja) ■



↑ The CDS Demonstrator makes all the control and measurement signals of the current sensor easily accessible.

Production of solderable LED modules

THE PRODUCT RANGE of Lust Hybrid-Technik GmbH covers SMD component mounting and, most especially, thick-film (ceramic circuit board manufacture) and chip-on-board technology. Both technologies are deployed in the production of solderable LED modules. LEDs (light-emitting diodes) discharge large amounts of heat to their surroundings, and so require sound thermal contacting. Ceramic circuit boards meet that requirement.

The Al₂O₃ ceramic used – in a dark brown finish to attain the desired look – features a much higher thermal conductivity than FR4 circuit board base material. The ceramic is structured in a screen print process. Unenclosed LEDs are mounted on the carrier.

Thanks to the flexible layout, the number and dimensioning of the LED chips is variable. A module may contain up to four LEDs. The LEDs are contacted by gold wires (30 µm). Through-contacts connect the solder points on the rear to the LEDs.



To protect the diodes and the gold wire against ambient effects, they are passivated with transparent sealing compound. A ceramic ring inhibits running of the sealing material. The module's diameter is 6 mm, and its height 1.5 mm. (fh) ■

5 MW PITCH systems of LTI REEnergy

“Supply of the complete offshore wind farms with PITCH systems from LTI REEnergy.”

THE OFFSHORE ALPHA VENTUS wind farm off the North Sea Island of Borkum is the first German pilot project where 12 wind turbines are to be built by 2009. The wind park will be built on an area of 4 square kilometres and is to serve for the commercial utilisation of wind energy in the future. The test farm will be used to gain fundamental experience in the construction and operation of an offshore wind farm. For the first time, wind turbines with an output of 5 MW will be erected

45 kilometres offshore in a water depth of up to 30 metres at an average wind speed of 10 metres per second.

Alpha ventus will consist of six M5000 turbines of Multi-brid Entwicklungsgesellschaft mbH and probably six 5M turbines of REpower Systems AG.

The energy consortium Deutsche Offshore Testfeld- und Infrastruktur-Gesellschaft (DOTI) will support the project with a total investment of 180 million euros.



Photo: REpower-Systems AG

LTI REEnergy GmbH is a leading provider of complete systems for the electrical rotor blade control of wind and marine current turbines. With the construction of all 5 MW offshore prototypes, the company has successfully demonstrated its expertise in the area of offshore and multimegawatt turbine systems. The complete alpha ventus offshore wind farm will feature PITCH systems of LTI REEnergy. ■

Source: www.alpha-ventus.de

Italy: Jewellery manufacture with the servocontroller

OUR ITALIAN CUSTOMER manufactures machinery with which three-dimensional bodies can be created directly from a CAD file, eliminating the need for intermediate steps such as mould construction.

The operating range is 200x200x60 mm, and is suitable for rapid prototyping of jewellery and other small items. The 3D models are produced from a resin which is then set by a special laser light.

There are no restrictions in terms of geometry, because forming takes place position by position. As a result, no constraints are placed on creativity. Whether overhangs, recesses, micro-scale surfaces or complex shapes – anything is possible.

Each machine is equipped with two CDE3000 type servo-controllers and LUST LSH series servomotors. These drives position the X-Y lasers to an ultra-high degree of precision in a highly dynamic operation for each individual position.

This approach enables samples of jewellery and other small items to be produced quickly and precisely, and the savings on tooling costs deliver an additional benefit. (ab) ■



◀ **Jewellery is imaginative and individualistic.** The flexibility of CDE3000 servocontrollers enables limitless creativity in designing new jewellery collections.

First official market representation of LUST in Austria

AT THE LEADING INDUSTRIAL automation trade fair SMART AUTOMATION, held on October 3rd to 5th 2007 at the Designcenter in Linz, LUST for the first time presented itself on the Austrian market under its own name. The concept underlying this show is to promote business contacts as a motor to drive decision-making processes. Visitors to SMART AUTOMATION appreciate the opportunity it provides to gain an overview of trends in drive and automation engineering on a single day, without having to work their way through large numbers of halls.

LUST presented solutions featuring high-end drive technology solutions from its c-line DRIVES and ServoOne product lines: Synchronisation over bus systems such as EtherCAT and SERCOS; servomotors and linear motors; and water-cooled servo drives.

The LUST stand was run jointly with agent SSL. SSL is a full-package equipment supplier, and demonstrated its wide-ranging capabilities with a new feature at the show. From a touch panel, visitors were able to set in motion a

“Wheel of Fortune”, which was positioned by c-line DRIVES using a random generator in CANopen Interpolated Position Mode to hit on a winning segment every time.

The positive response from visitors to the show demonstrates that LUST is widely acknowledged as a provider of innovative drive solutions in Austria, and that prospects for future growth on the market are bright. (mw) ■



◀ **In 2007 LUST opened its own office in Austria.** At the SMART trade fair in Linz, LUST Austria presented high-tech drive solutions in its c-line DRIVES and ServoOne products.

books

ANTRIEBSLÖSUNGEN – MECHATRONIK FÜR PRODUKTION UND LOGISTIK (Drive Solutions – Mechatronics for Production and Logistics)

Edwin von Kiel (Hrsg.), Verlag Springer, Berlin
ISBN 3-540-7342-52

Highly automated factories have minimized the human labour involved in the production and supply of the goods essential to our daily lives. This book sets out how controlled drives in such factories and in the associated logistics systems ensure that products can be manufactured highly efficiently in large volumes and shipped to the consumer.

FUNKTIONALE SICHERHEIT – GRUNDZÜGE SICHERHEITSTECHNISCHER SYSTEME (Functional Safety – Fundamentals of Safety Engineering Systems)

Josef Börcsök, Verlag Praxis, ISBN 3-7785-2985-4

This book considers applicable standards, measures for identifying and reducing risk, the various safety levels, hardware and software components and relevant models, necessary mathematical methods and safety systems, and provides numerous practical examples.

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fair



FAIR

SPS/IPC/DRIVES
International Exhibition
and Conference for
Electric Automation
www.mesago.de/sps

DATE/LOCATION

27th to 29th November
2007
hall 4, stand 4-246
hall 4, stand 4-145
Nuernberg

EXHIBITOR

LTi DRIVES GmbH
Levitec GmbH



ewec 2008
European Wind Energy
Conference & Exhibition
www.ewec2008.info

31st March to 3rd April
2008
stand 7A334
Brussels

LTi REnergy GmbH



Hannover Messe
International Fair for Tech-
nology, Innovation and
Automation
www.hannovermesse.de

21st to 25th April 2008
hall 15, stand G07
hall 15, stand E06
Hannover

LTi DRIVES GmbH
Levitec GmbH



SENSOR + TEST 2008
International Exhibition for
Sensorics and Measuring
www.sensor-test.de

6th to 8th May 2008
hall 7, stand 248
Nuernberg

Sensitec GmbH