

NEWS

J. SCHNEIDER ELEKTROTECHNIK NEWSLETTER NO. 32 | DECEMBER 2021

EDITORIAL

Dear Readers of the Schneider Newsletter,

Almost two years of the pandemic are now behind us. Two years in which social distancing with social restrictions, keeping our distance and strict hygiene rules have had a significant impact on our lives. Two years in which our working world has also changed: office workplaces, meetings and trade fairs, for example, have been replaced by working from home, video conferences and digital events. Many things have become possible which would have seemed unimaginable only two years ago. This has changed the way we think and work and opened up new possibilities and opportunities. Corona has shown us that we are capable of tackling major challenges and finding solutions.

Meanwhile, rising raw material prices and material shortages present us with new tasks every day. This is compounded by the shortage of skilled workers we have to deal with. But we are certain that we will also find solutions for this together with you, our customers and suppliers.

With application examples and reports, we inform you about our products and services from the areas of transformers, uninterruptible power supplies, high-voltage and plasma power supplies, and our electrical drives service center.

In November we were looking forward to our first personal meeting with you. But just half an week before the SPS should open the doors, it was cancelled because of rising Corona incidences. Nevertheless we are presenting news from Schneider in this issue of Schneider-News.

We hope you enjoy reading and look forward to seeing you.

Bettina Schneider

Rolf Anti

TRANSFORMERS

CUSTOMISED MAINS SIMULATORS FROM J. SCHNEIDER ELEKTROTECHNIK

Exports in mechanical and plant engineering are regarded as the engine of the German economy. Machines and plants “Made in Germany” are in use around the world. However, as the supply networks around the world operate with different voltages and frequencies, adaptations to the respective network conditions are necessary. In principle, this is solved with specially-designed transformers and power supplies. J. Schneider also offers a wide range of serial products and customised solutions depending on the area of application.

Since final testing of the machines and systems in the factory must be carried out under “real conditions”, additional testing equipment is necessary. It is used to test the products with the respective voltages or frequencies prior to delivery.

J. Schneider Elektrotechnik also has many years of experience in this segment of “multifunctional power supplies”. In close consultation with customers, test field power supplies are developed and built in Offenburg that can generate a variety of mains voltages as well as the corresponding mains frequency. The basis of each such unit is formed by a grid converter, which is configured into a complete unit in conjunction with the necessary filter units and matching and isolating transformers.



Mains simulator for a test bench for final testing of pumps for the international market (output of 7.5 kVA / 50-60 Hz / 360-480 V 3Ph)

The Offenburg-based transformer specialist has a wide product range of winding materials that are suitable for this purpose. In close cooperation with the converter supplier, J. Schneider develops a system that meets the customer's requirements. A system with natural cooling or very compact systems with liquid-cooled converters and winding materials is possible here. Customer orientation is just as important in the selection of components as it is in the scope of services to be provided: this ranges from the design of the customised system to commissioning on site. Since the test facilities can be realised in the power range from 1.5 kVA up to several MVA, systems for testing small machine tools are just as possible as systems for testing entire production lines.

NO SUPPLY PROBLEMS FOR DC UPS SYSTEMS FROM J. SCHNEIDER



We are currently able to deliver all DC UPS systems within the planned delivery time and are working hard to ensure that this continues in the future. Long-term planning and the ensuing procurement of components means that we are currently able to manufacture and deliver in regular operation.

MAXIMUM SAFETY AND ENERGY EFFICIENCY FOR DATA CENTERS

Data centers contain a large number of IT components with which data and processes are stored and processed. In order to avoid failures and data loss, the design of data centers ensures that the individual IT components are supplied without interruption and that the functionality of the IT is guaranteed at all times, for example through the use of UPS systems and standby power systems as well as multiple feeds and redundant power paths.

Monitoring systems that record the transparency of the electrical energy flows are also indispensable to prevent energy bottlenecks at the system-relevant components. They monitor the electrical high availability preventively and report exceedances.

But they not only play a central role for the security and availability of the data center. Only with a suitable EnMS (energy management system) is effective use and planning of the existing infrastructure possible. This is a very important aspect, especially since users today focus on the security and availability of the data center, energy efficiency and thus competitiveness in terms of costs.

A guideline for the introduction, implementation and optimization of an EnMS is provided by DIN EN ISO 50001,

which supports companies and organizations in achieving continuous improvement in energy management, energy efficiency and energy savings.

Combinations of an EnMS from Janitza electronics and power supplies from J. Schneider Elektrotechnik can be optimally used for this purpose.

The UMG measuring devices from Janitza electronics monitor the high availability of the system, which is defined in the EN 50160, EN 61000-2-4, IEEE 519 and ITIC (CBEMA) standards. Thus, they are responsible for residual current / CEP (central earthing point) monitoring as well as timely detection of excessive harmonics, flicker, voltage dips, transients, voltage fluctuations, asymmetries, frequency fluctuations etc., which they record and report to the higher-ranking office.

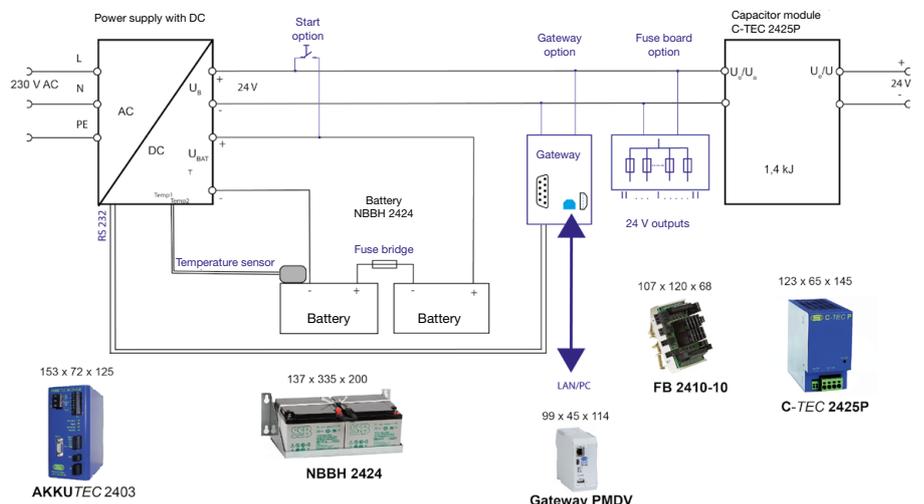
The power supplies from J. Schneider increase the safety of the system by reliably supplying the UMG measuring devices with energy. They bridge voltage failures and short-term interruptions that can occur, for example, when switching from A-supply to B-supply and vice versa. The buffer power supply units of the AC C-TEC series from Offenburg are particularly suitable for short-term buffering; an extension of the buffer time is easily possible using capacitor extension modules. By using long-life ultra-

capacitors as a buffer medium, they can be used in a wide temperature range (-40...60 °C).



HYBRID UPS TO DIN VDE AR 4110

Much longer buffer times can be achieved with lead-acid batteries than with ultracapacitors, for example. However, lead batteries may age much faster than ultracapacitors. Read more:



Schematic design of a DC UPS hybrid with batteries and ultracaps
 $U_N = 230 \text{ V AC}$ $U_{OUT} = 24 \text{ V DC}$

HIGH-TECH POWER SUPPLY FOR WAFER PRODUCTION

Electronic processes are not possible without so-called “wafers:” as a carrier material for electronic components, they are used, for example, for power transmission in wind turbines, frequency converters in motors, power supply in high-speed trains or other applications in micro-electronics, photovoltaics or microsystems technology.

They are manufactured in high-precision processes from silicon and other substances, so-called dopants. The reliability and compatibility of the power supply plays a decisive role in wafer quality during production. J. Schneider Elektrotechnik develops high-voltage power supplies specifically for use in wafer production according to customer requirements. Only recently, two components for two 2.5 MHz oscillators were developed for the Danish wafer producer Topsil Globalwafers A/S and built in Offenburg. The J. Schneider high-voltage power supply provides a power of 120 kW with an output voltage of -10 kV. The very good process stability is ensured by the patented ARC current limitation, which limits the output current in the case of an arc to a maximum of five times the nominal current. The configurable arc management allows further settings such as arc delay, arc injection time, arc pause time, arc threshold and arc detection via current, voltage or dU/dt. Digital control of voltage, current and power ensures fast settlements and thus increases process stability. Each of the two systems, both of which are integrated in a control cabinet, consists of three high-voltage modules and the associated safety and communication elements. The compactness and reliability of the systems, as well as experience and expertise in the field of high-voltage power supplies, ultimately tipped the scales in favor of Offenburg receiving the contract. Commissioning of the system at the customer’s site and after-sales support on site in Denmark are also part of the J. Schneider range of services.



Development engineers Stefan Spiekermann and Walter Litterst, who were in charge of this system, in action at Topsil Globalwafers S/A

ELECTRICAL DRIVES SERVICE CENTER

NEW DRIVE SOLUTION WITH IMPROVED ENERGY EFFICIENCY

The basis for selecting the optimum drive concept is the comparison of overhauling the existing drive and installing a new drive solution.

Here, the old concept for driving an agitator consisted of a gearbox-coupling combination with a separate Ex special motor. But the gearbox had to be replaced due to wear and high noise generation. After a detailed on-site assessment, we advised the customer to convert to a complete Ex geared motor unit.

In this unit, the Ex motor with the coupling is mounted directly on the gearbox. Since there is no longer any height offset between the gearbox and the drive motor, one possible source of error is eliminated. Time-consuming alignment between gearbox/coupling and drive motor is no longer necessary. A three-phase Ex gear motor suitable for inverter operation is integrated in the new unit. It corresponds with the best energy efficiency

class IE 3. Compared to the old drive solution, power consumption with this motor is reduced by approx. 3.5%. Thus, the company saves 14,381 kWh/year by converting a single drive unit – a clear cost advantage with constantly rising energy costs. Added to this is the saving in CO₂ emissions of approx. 8,628 kg.

Since the drive is located in an explosion-proof area, the motor had to be designed according to the latest ATEX guidelines. Here, too, our specialists from the Electrical Drives Service Center were able to provide the customer with comprehensive advice and size the drive unit in accordance with the complex, internationally applicable requirements (IEC 60079-1 and IEC 80079-1) for the use of geared motors, motors or drive electronics in potentially explosive applications. Sensors were also installed for permanent monitoring of the gear unit. This allows the customer to optimally plan maintenance and obtain information on the condition of the unit (Industry 4.0).

The comprehensive service provided by J. Schneider also included the dismantling of the existing gear unit, the overhaul and adaptation of the coupling as well as the installation of the new Ex geared motor, including the manufacture of the new steel structure.



IN-HOUSE INFO

START OF TRAINING 2021

On September 1, 2021, eight young people from the region started their training with us. These include four electronics technicians for machine and drive technology, two electronics technicians for devices and systems, one industrial clerk and one warehouse logistics specialist.

During their training, we teach our apprentices the theoretical specialist knowledge that they can also apply in practice at our company. In the company, they pass through various departments in all three business divisions. This makes their training comprehensive and varied and the trainees get to know our company and our products from the ground up. Through this combination of theory and practice, we establish a professional foundation for our trainees that prepares them in the best possible way for their future professional life. We wish them all much success and fun during their training.



J. SCHNEIDER ELEKTROTECHNIK HONORS LONG-STANDING EMPLOYEES

Normally, the company's Christmas party provides the festive setting for honoring long-serving employees at J. Schneider Elektrotechnik. As this was not possible last year due to the pandemic, Bettina Schneider, Managing Partner, and Rolf Anti, Managing Director, made up for the honors for the employee anniversaries in 2020 in a small celebration. The number of those honored was record-breaking: 45 employees were honored in 2020 for their many years of service. "Without their cooperation and loyalty and without their daily commitment, such a positive development of the company would not have been possible," Bettina Schneider and Rolf Anti emphasized at the ceremony.

Two of those honored were able to look back on 45 years of service last year. Bernhard May joined the Schneider family in 1975 after successfully completing his training as a high-voltage electrician and remained loyal to the company for 45 years until reaching retirement in 2020. Rainer Burgert also joined the company in 1975. He completed his apprenticeship at J. Schneider after which he initially worked as a skilled worker in production. Today, he works in the Purchasing Department, where he can draw on his previous technical knowledge.

The two employees who were honored for 40 years are also "home-grown": both Thomas Hug and Hartmut Heitz commenced their training at J. Schneider on September 1, 1980. Since then, both have put in countless hours in and for the company and have made a significant contribution to the success of the transformers division in which they work. "Thomas Hug has been responsible for technical development as Technical Manager in the transformer construction department for decades and is appreciated by customers and employees alike as a competent contact person," says Rolf Anti.

Bettina Schneider paid tribute in person to Hartmut Heitz, who is always approachable with his tireless commitment, whether for colleagues, trainees or as a member of the works council. In fact, he can be regarded as a good soul in all areas.

Here is a list of the employees who were honored:

10 years: Sven Meier, Silvia Neff, Sabine Fritsch, Bernd Hurst, Werner Kienzler, Silvio Wantschke, Nelli Steinhauer, Frank Sutter, Daniel Berger, Torben Spinner, Jens Feitsch, Stefan Braun, Ursula Buchholz, Marco Ziegler, Carlos Alberto Bischoff, Robert Berger and Silke Hurst

20 years: Stefan Roth, Frank Greitsch, Irmgard Klausmann, Joao Mengi, Sebastian Eschmann, Dennis, Bäschnitt, Klaus Schöner, Gerd Moser, Ludmilla Selzer and Jürgen Grüschock

25 years: Alexander Henschel, Björn Schellenbach, Timo Kart, Petra Zimmermann and Claus Vögele

30 years: Mathias Preuß, Slawomir Bidzinski, Martina Gasi

35 years: Roland Kerk, Paul Heck, Ulrich Herp, Matthias Vetter, Efrem Tzeggai, Joachim Kränzle

40 years: Hartmut Heitz, Thomas Hug

45 years: Bernhard May, Rainer Burgert



Senior Partner Karl Schneider, Managing Partner Bettina Schneider and Managing Director Rolf Anti with those employees honored for 45, 40, 35, 30, 25, 20 or 10 years of service

CONGRATULATIONS TO OUR MOST SUCCESSFUL TRAINEE!

Just how successful training at J. Schneider can ultimately be is demonstrated by our trainees every year in their final exams. This year, too, we can congratulate one of our apprentices on being the state and chamber winner. Florian Breger completed his 3½ year apprenticeship as an electronics technician for machine and drive technology at the top of his class in Baden-Württemberg. At the national competition, which took place in November, he achieved an excellent second place. We extend our warmest congratulations and wish him every success for his further career.



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