



Good Business Partners: STG-BEIKIRCH and Ersä

STG-BEIKIRCH-Location in Lemgo.

Innovative in Industrial Electronics

As a system partner of the ESSMANN Group, STG-Beikirch, the specialist for both facades- and building automation as well as industrial electronics, is considered to be amongst the leading manufacturers of smoke- and heat extraction solutions for roofs and facades. The company, based in Lemgo, has equipped more than 1000 facilities worldwide with intelligent technologies

for the automation of windows and for fire protection – not only an important contribution to building safety, but also to optimizing the operating costs of the facilities. Since there are no compromises allowed in the area of safety, STG-BEIKIRCH produces, since 2015, its industrial electronic products increasingly on equipment from the system supplier Ersä.

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published in
EPP 10/2016
in Germany



The through-hole line with the Ersa POWERFLOW N₂ full tunnel wave soldering system in the STG-BEIKIRCH production.

Just about 200 employees work at STG-BEIKIRCH in Lemgo, an old Hanse town. The industrial electronics division, with its staff of 90 employees, produces electronic assemblies for in-house use as well as for external customers. The boards used in-house are for numerous products of the ESSMANN GROUP. The majority of them are installed in the control units of motors or in control cabinets, such as for the automatic control of skylight domes or of facades.

An innovation from the house of STG-BEIKIRCH is the module center MZ3 for integration into facility automation, with which architects and designers for facades receive state-of-the-art control technology for smoke- and heat removal systems as well as for the ventilation technology. With the configuration software integrated in the MZ3, it is possible to assign (drag-and-drop) the required drives, a user interface elements, or sensors and signals to individual areas. This allows for full project planning with a compact control cabinet, including future expansions and adjustments.

1.5 MILLION BOARDS IN DIFFERENT BATCH SIZES

The MZ3 is only one part, even though an important one, of the substantial product portfolio of STG-BEIKIRCH. On its 2000 m² production area, STG-BEIKIRCH generated sales in 2015 of 30.7 Million €. With 600 different products, it produces 1.5 million assemblies in different batch sizes, starting as low as 5 right up to 500 000 boards. Following the corporate motto "We take care of everything", the range of services offered by STG-BEIKIRCH includes preliminary consultation, product development, the build of product samples, and surface mount and through-hole components placement right up to the assembly of finished modules. This for all products called for on a building envelope!

A further important element is the product testing area, where six development engineers quickly and flexibly react to a customer's demand and develop and build any required test system. At the heart of STG-BEIKIRCH is the development of hard- and software for building automation, which is being handled by nine engineers. An in-house EMC cabin for taking measurements during the

Infobox

STG-BEIKIRCH
Industrieelektronik
+ Sicherheitstechnik
GmbH & Co. KG

Established
1988

Location
Lemgo

Employees
200

Sales 2015
30,7 Mio. Euro

Production Area
2.000 m²

Industries
Control Technology,
Medical Technology,
Safety/Security Technology,
Drive Technology,
LED-Technology,
Industrial Electronic
Consulting, Development,
Test Technology,
Prototype Building,
SMD- and THT-Assembly,
Modules Preassembly,
Potting Technology

○ Turntables are used to enter the pallets into the production line.



○ product development stage is also available. It is probably the comprehensive and deep understanding of the hard- and software aspects which has made the successful growth of STG-BEIKIRCH over the last years possible.

STG-BEIKIRCH'S EQUIPMENT RANGE GROWS WITH ERSA SOLDERING SYSTEM

STG-BEIKIRCH's electronic manufacturing department, created in 1999 by the merger of STG Sicherheitstechnik GmbH and the Beikirch Industrieelektronik GmbH (Minden), was always equipped with machinews suitable for the tasks required. But the rapid development taking place in electronic manufacturing and the fact, that there were signs of the company reaching its production capacity, convinced the corporation that it had to make a move.

Production manager Rainer Spanier reacted in good time and established in 2013 at the SMT Hybrid Packaging Exhibition, the trade show for system integration held in Nürnberg, the first contact with system supplier Ersa. "We naturally were aware of Ersa and its product range well before that time. The first con-

crete interest in Ersa came 5 or 6 years ago, when it became clear to us that, as an EMS provider, we had to offer a selective soldering process to our customers – with the increase in mixed technology THT/SMT, wave soldering was no longer a fully viable process", says Rainer Spanier. The attention of STG-BEIKIRCH quickly turned to Ersa, the leader in the technology of selective soldering. Now the question was how to ensure that the selective soldering system could be adequately loaded to operate economically.

They started to look to their own products, to see whether they could be converted to the new process. While a number of products could be found, it was realized that often the distances between the SMT components and the through-hole pins were too small. This posed a challenge, even for the most experienced soldering specialists. Of the four suppliers on the vendor list, only Ersa saw itself in the position to positively state: Yes, we can do that!

Thus, a number of soldering trials with different boards were undertaken, at Ersa as well as at the other suppliers. "Ersa was the only supplier that could handle the tasks, and, as the result, the



In its electronic manufacturing, STG-BEIKIRCH relies on the RFID technology, which allows for traceability, solder program selection and return of the pallet to the corresponding workstation.

purchase order was issued for a selective soldering system type ECOSELECT 1 with two solder bath. Installation took place in May 2015, and the process accompaniment provided by an Ersa application engineer was extremely helpful", remarks Rainer Spanier while looking back at their first purchase from Ersa.

AT THE START OF THE YEAR, A NEW WAVE SOLDERING SYSTEM ARRIVES

But it should not be the last, since even before the negotiations regarding the selective soldering system, STG-BEIKIRCH and Ersa had been in discussions about a wave soldering system. The annual shut-down in Lemgo at the turn of the year 2015/2016 was used to install a new wave soldering system from Ersa, a full tunnel system with nitrogen inertion. This was desperately needed since the old system from another supplier was technologically very much outdated and at the end of its load capacity, unable to meet the required throughput. "

The full-tunnel wave soldering system POWERFLOW N₂ is just the system we had been looking for, and the soldering

trials performed served to convince us", says production manager Rainer Spanier. For handling the boards on the infeed- and return conveyors, special solutions had to be developed. To technically realize the project, engineers from both companies' combined their knowledge to come up with very creative solutions. And since traceability was demanded by the market, it was, for STG-BEIKIRCH, a mandatory requirement which was executed - in close cooperation between both companies - with RFID tags.



Selective Soldering Machine Ersa Ecoselct 1

During production on the full tunnel soldering system POWERFLOW N₂, the data is generated with which it is possible to retrace the production parameters under which the boards have been processed, and in which batch is was manufactured including all process data. This way the finished article achieves a high degree of transparency – from the parameters of the components, the test results of the components and the boards' right up to the production data of the wave soldering system.

"STG-BEIKIRCH and Ersa have complemented each other extremely well in this project: The designers from Lemgo have written custom software tailored exactly to meet their demands, software, that is now running on their Ersa soldering system", says Ersa's Ulrich Dosch, the Sales Engineer looking after STG-BEIKIRCH. The highest standards are applied in the safety industry, and STG-BEIKIRCH's product range in this sector is rather large.

For example, boards for emergency release buttons need to be of white RAL color, both before and after soldering. This can be achieved only by an efficient and homogeneous preheating process, which has to be quick and at low temperature, as otherwise the board would go yellow (discolor). Other boards, again, need to be soldered at higher temperatures, and there a powerful preheat system is called for. For these diametrically opposed requirements, as well as for everything in between, Ersa could supply the perfect solution. In the end, STG-BEIKIRCH settled on a virtually fully equipped POWERFLOW system, making sure that all present and also any future demands could be met.

A forward looking decision, when considering that STG-BEIKIRCH is continuously increasing its international business. "The relationship, build up slowly over a number of years, has very much intensified during the last year– especially when the subject turns to technology. As a technician, I very much appreciate the fact that discussions with Ersa take place on a technical level. There is a profound understanding for the subject and the required pro-

cesses, from which both side generously benefit, as is demonstrated by the solutions installed in our facility.

From Ersa we receive what we require: excellent products, excellent advice!" says Rainer Spanier. Automating the building envelope may be a niche market, but it functions very well – so well, that the next project for the two business partners is already on the horizon. ■

For board assembly, six work stations with order visualization are installed before the wave soldering system Ersa POWERFLOW N₂.



Experts discussing: Frank Engelmann, Technical Support, Field Service Industrial Electronics (left), Production Manager Rainer Spanier (right), both STG-BEIKIRCH, and Ulrich Dosch, Ersa Sales Engineer.

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