

The efficient and reliable ventilation solution grew RadiPac for RadiPac at Semikron – over the New Year.



COMPANY
Semikron

LOCATION
Nuremberg, Germany

Happy New Ventilation

To enable electronics specialist Semikron to start 2020 with an efficient ventilation system, installation engineering company Kratschmayer put in long hours over New Year – and retrofitted a ventilation system in three days.

FFor many people, the time over New Year is a period of calm. For a change, this also applied to the production department of Semikron at the end of 2019. Magnus Stöckl, Head of Supply Technology at Semikron, explains: “Normally we work 365 days a year in three shifts, making it difficult to shut down production for a longer time.” But at the end of December 2019, the time came. And the reason for this: The Nuremberg-based specialist for power electronics wanted to modernize the 20-year-old ventilation system for the six-story main production building. “This period was the only possibility in the year,” says Stöckl. “We couldn’t change over while operations were ongoing, as production needs to have clearly defined climatic conditions.”

The most important parameters are temperature and relative humidity – the latter must be at a constant 45 percent, with a tolerance of just three percent. It is only within this narrow framework that the production staff at Semikron can produce the sensitive electronics parts that are exported to the entire world. Stöckl explains: “Special solder pastes and fitting processes in particular are very sus-

ceptible to excessive humidity or temperatures – then they soon no longer behave as they should.”

More reliability, less energy consumption

Stöckl wanted to achieve three things by retrofitting the ventilation system: “It was especially important for us to have greater reliability in the future rather than using a single large fan, like we had installed until then. We also wanted to reduce energy consumption and install a central dehumidification system in the plant. Until that point, this had happened decentrally on four of the six floors.” Semikron approached ebm-papst when looking for the right partner for the retrofit. The two companies already knew each other, as products from Semikron are also used in production at ebm-papst. The fan specialist referred Semikron to the company Kratschmayer. In the fall of 2019, the three parties jointly organized an on-site inspection. “We first established the basic principles before we decided to find the right fans for the installation situation and the required pressure and



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—
HEAD OF SUPPLY TECHNOLOGY
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air flow,” recalls Thomas Häberle, Head of the Ventilation Technology department at Kratschmayer and responsible for the project at Semikron.

Axel Resch, ebm-papst Area Manager for Nuremberg, helped find the right fans. “We use both our personal expertise and our own ‘Fanscout’ software, which contains all of our products and experience from many hundreds of projects. This enables us to quickly come up with a useful, customized selection.” In the case of Kratschmayer, the fitting solution was a FanGrid operating with nine efficient RadiPac fans on the intake and exhaust sides respectively. This design enables demand-based control with a high level of redundancy and was a proposal that Semikron also approved of.

Detailed planning for all eventualities

Once the project was clear to everyone, Thomas Häberle made a second on-site appointment to discuss the project’s detailed planning. “Over New Year, you can’t even get a replacement cordless screwdriver,” he says grinning. “That’s why planning is absolutely essential here.” Kratschmayer therefore had all the materials needed delivered to the headquarters in Waldenburg two weeks before the actual retrofit. Häberle also took care of personnel planning well in advance: “Of course it’s something out of the ordinary to work over New Year. But thanks to the long preparation period, we were able to conclude agreements with all employees for this task. The team was also really motivated because it was an exciting project where you could see the

results fast.”

The experts from Kratschmayer took the materials for the retrofit to Semikron shortly before Christmas. The employees heaved the fans and the metal plates for the FanGrid frame and other materials onto the roof using a truck-mounted crane. Once everything was set up in Nuremberg for them to install their “gift,” the team first went home to enjoy the festivities. After a few days with their families, they then got down to work. Item one on the agenda on December 27, 2019: removing the old AC fan. With combined muscle power and an overhead traveling crane, Kratschmayer’s employees took the device out of its housing, making room for the much smaller, efficient fans from ebm-papst.

Detailed adaptation on site

“We had of course measured the entire system in advance,” says Häberle. “But we still knew that we would make the exact adjustments to the FanGrid frame on site to ensure that everything really fitted precisely.” In the two days that followed, bit-by-bit the team built the FanGrids on the intake and exhaust side, fitted the fans, and wired them up to the power supply, control cabinet, and control system. “It

paid off that we had a precise schedule,” says Häberle. “Everything went just as we expected, so we were able to complete the upgrade on time.”

When Semikron’s employees started the year on January 1, the team from Kratschmayer had long since gone, but the ventilation system was already reliably supplying the entire production building again: Happy New Ventilation!

Energy savings of 122,000 kilowatt hours per year

Magnus Stöckl feels that the fact that he cannot say very much about the operation of the new ventilation system is a good sign: “We have not heard anything about the system since the retrofit. And that is always positive. What’s more, our time requirements were met exactly, meaning that our production department could start up again without delay.” Semikron also achieved the three goals of the retrofit. Each of the nine fans on both the intake and exhaust sides ensure high reliability and energy consumption dropped by twelve percent. And the decentralized dehumidification system fitted as part of the retrofit now creates climatic conditions throughout the building in which the most sensitive of electronic components can feel at home. ●



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Planning the retrofit included precise on-site adaptation of the FanGrid.

