

Application report Electronic-Key-System EKS

Access only for authorized persons – Electronic-Key-System in production

When it comes to controlling access to individual assembly stations in production, there is hardly any way around an Electronic-Key-System. Ideally, it helps to maintain quality standards in production in addition to ensuring greater reliability.

According to Reiner Woltersdorf, he had his own personal epiphany while attending the SPS IPC Drives trade show at the end of 2011. He had the Electronic-Key-System EKS from Euchner demonstrated to him for the first time in Nuremberg. “It was exactly what I was looking for,” he remembers. Woltersdorf is a maintenance planner in the field of electrical engineering at BSH Bosch und Siemens Hausgeräte GmbH, Nauen plant, and has spent years on developing solutions for smooth production. He now had the task of improving the reliability of the 200-meter-long assembly line.

BSH Bosch und Siemens Hausgeräte GmbH is Europe’s largest household appliance manufacturer and one of the world’s leading company groups in the industry. This joint venture was established in 1967, and it achieved a sales volume of around 9.8 billion euro last year. BSH now operates 42 factories in thirteen countries in Europe, USA, Latin America and Asia, employing more than 46,000 people. About 500 of them ensure that around 600,000 washing machines – comprising around 350 different front-loader versions – leave the assembly line at the Nauen plant each year. 2/3 of the premium machines are exported – together with a promise of quality backed by the Bosch

and Siemens brands. “We spare no effort to this end,” emphasizes Woltersdorf. Prior to the introduction of the EKS, the assembly stations at BSH were equipped with a simple access control system that involved password input on a touch panel. Operating it was relatively time-consuming and entailed the risk of double use of passwords and therefore the risk of not being able to retrace modifications and interventions in the processes, Woltersdorf illustrated. Once the company had initially equipped ten to twelve assembly stations with the EKS and subjected them to comprehensive testing, it soon became clear that these risks have now been eliminated.

Easy to use in all applications

The EKS is an easy-to-use system, essentially consisting of an Electronic-Key and a matching Electronic-Key adapter. The particular advantage of the EKS is that





the Electronic-Key is held in the Electronic-Key adapter while operating or maintenance personnel work on the machine. Various device versions are available, permitting almost universal use thanks to the different interfaces. All devices are very compact. Non-contact data transmission allows the Electronic-Key adapter to be used in harsh industrial surroundings. The Electronic-Key takes the form of a robust tag. It incorporates a memory chip and a transponder. The Electronic-Key adapter is a read/write system with integrated interface electronics. It can be connected to a PLC or control system. This permits very fast log-in without a password, even for systems without a keyboard. At BSH, the application is programmed to permit system access only as long as the Electronic-Key is located in the Electronic-Key adapter. Then when the Electronic-Key is removed, access to specific functions on the system is automatically inhibited.

“By installing the EKS, we met all demands that production placed on a modern access management system,” explains Reiner Woltersdorf.

These demands include:

- ▶ Clear responsibility, as the Electronic-Key is individually allocated to one person
- ▶ Fast enabling of machine or process functions
- ▶ Flexible allocation and modification of specific levels of access rights
- ▶ Traceable recording of operating access and changes to the process parameters possible
- ▶ Electronic-Key suitable as an electronic signature
- ▶ Electronic-Key management using the software Electronic-Key-Manager EKM
- ▶ Higher plant reliability and lower production costs

Around 40 to 50 devices are now in use at BSH, and Woltersdorf emphasizes that all of them are working flawlessly. The maintenance manager is especially pleased with the flexibly adaptable EKM software. It can be used to define each employee’s conditions or parameters for enabling access to the assembly cell. It will also be possible to connect to the plant data acquisition system in future in order to record assembly progress, for example.

BSH is also exemplary in its handling of data privacy protection: In agreement with the works council, the EKS was set up so that every employee can see what information about him or her is collected and possibly stored upon log-in. This is certainly one of the reasons why the system was very well accepted by the workforce.