Press release

Hamelin/Nuremberg, Germany, 26. November 2019

IT meets OT: The new generation of controllers from Lenze caters for the growing demands of Industry 4.0

Scalability, openness and computing power in abundance – Lenze Controllers set new standards

More flexible, intelligent machines mean greater complexity – and thus greater controller performance demands. Lenze caters for this trend with its new cabinet controllers. This new generation of controllers stretches the limits of what is technically feasible.

Lenze has made inroads into a new performance class for controllers with the c500 series. As a supplement to the current c300 and 3200 C models, the tried-and-tested motion control technologies from Lenze can now be used in extremely complex projects as well. They thus compete with solutions for which only industrial PCs were good enough up to now.

The goal the machine automation specialist seeks is high: OEMs should no longer have to worry about whether the controller can provide enough computing power for complex tasks. The c500 series offers an abundance of computing power.

Higher class processor as a basis

The heart of the c500 series is Intel's most powerful CPU currently available for highly compact designs. These processors redefine the upper performance limits for controllers. This means that the new controller series can easily keep pace with the rapidly increasing requirements for general controller tasks and motion applications made by Industry 4.0.

For OEMs, this equates to various advantages: for example, more complex projects for which no sufficiently powerful controllers had been available up to now do not necessarily have to use an industrial PC, which entails more programming and connectivity work. Instead, the machine builder can use their know-how in a familiar environment and also make use of the intelligent standard software modules of the Lenze FAST Application Software Toolbox. Existing programmes and programme modules in accordance with IEC 61131-3 can continue to be used.

One example is the evolution of printing machines: they place extremely high demands on timing when it comes to synchronising numerous axes, and they also require maximum precision. This is no problem for the new generation of controllers – it always delivers sufficient performance, even for existing applications which continue to grow as part of Industry 4.0 and require extra computing power.

PC and PLC combined

The c750 model blurs the edges between programmable logic controllers and industrial PCs. This controller covers applications in which Windows applications are mandatory. The OpenSystem architecture that Lenze enables with this model splits the computing power between two independent operating systems. The real-time Linux is responsible for control tasks while the open Windows 10 IoT Enterprise is available for customised software applications.

Each of these systems runs on a physical processor core that can split into two virtual cores and therefore process two tasks in parallel. This is made possible by the virtualisation at the processor level that is integrated in the CPU and that allows a direct assignment of the available resources, not just the processor cores but also the main memory and interfaces.

Some of the most common Windows applications include database applications such as configuration management and data evaluations, in part with the help of AI and machine learning. Image analysis routines for bar code readers and 2D/3D scanners or vision applications, not forgetting teaching applications to easily teach robots, rely on Windows. Data exchange with the

cloud is also becoming increasingly relevant. The c750 cabinet controller can pre-process all of the data and condense them to make them cloud-compatible.

IT meets OT

Lenze has developed gateways and the cloud-based X4 platform for web services so that machines in a smart factory can be integrated into the cloud. This is an integrated, complete solution that is ready for immediate use and can be got up and running with no specific previous knowledge.

It allows the easy and safe connection of the new generation of controllers from Lenze to web services. This allows you to keep an eye on machine data and states from any web-enabled device.

Conclusion

Users' demands for modular machines and systems with greater flexibility usually mean higher software requirements in practice. This means that projects often come up against the limits of what controllers can do. Lenze offers a powerful solution for this kind of project with the c550 controller. Some automation applications also require a Windows environment. The c750 hereby offers an alternative to an additional PC by combining its function together with the controller in a compact form factor. The new controllers significantly exceed the performance limits of programmable logic controllers – and thus the threshold for a switch to PC technology. Lenze thus lets its partners continue to use PLC-based modules and components in more complex projects and also reduce the expenditure and space requirements in control cabinets.

About Lenze

Lenze is a leading automation company for the machine-building industry and a specialist in Motion Centric Automation. As a systems supplier with solutions competence, Lenze works for and with its customers to create high-quality mechatronic products and packages, powerful systems consisting of hardware and software for machine automation, as well as digitalisation services in areas such as big data management, cloud or mobile solutions, and software for the Internet of Things (IoT).

Lenze employs 3,969 employees worldwide and is represented in more than 60 countries. Lenze's growth strategy will see the company continuing to invest strongly in the areas relating to Industry 4.0 in the coming years – with the aim of increasing sales revenue and profitability.

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