

**Straight to
the heart of
innovation.**

1

Developing ideas

Are you looking to build the best machine possible? Do you already have some initial ideas? Then let's get these down on paper, starting with small, detailed, yet innovative steps and work our way to a completely new machine. Working together, we will develop an intelligent and sustainable concept that is perfectly aligned with your specific requirements.

2

Drafting concepts

We welcome the challenges of your machine tasks. We will support you with our comprehensive expertise and provide you with valuable concepts to make your machine innovations a reality. We take a holistic view of each motion and control function and develop consistent, end-to-end drive and automation solutions for you – keeping everything as easy as possible and only as extensive as necessary.

Lenze makes many things easy for you.

We are motivated and committed to working with you to create the best possible solution that sets your ideas in motion – regardless of whether you are looking to optimize an existing machine or develop a new one. We strive to make things easy and seek perfection therein. This is ingrained in our thinking, in our service and in every detail of our products. It's as easy as that!

3

Implementing solutions

Our easy formula for satisfied customers is to establish an active partnership with fast decision making processes and an individually tailored proposal. It's as easy as that. We have been applying this principle for many years to meet the ever more specialized customer requirements in the field of machine engineering.

4

Manufacturing machines

Functional diversity in perfect harmony: as one of the few full-range providers in the market, we can provide you with precisely those products that you actually need for any machine task – no more and no less. Our L-force product portfolio, a consistent platform for implementing drive and automation tasks, is invaluable in this regard.

5

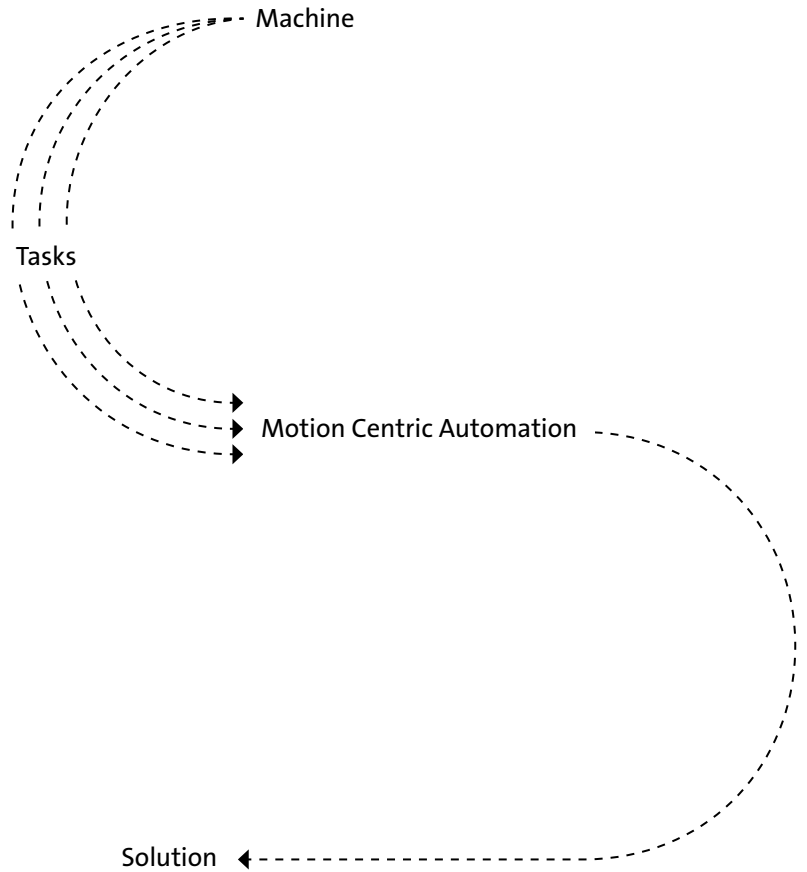
Ensuring productivity

Productivity, reliability and new peak performance on a daily basis – these are our key success factors for your machine. After delivery, we offer you proactive service concepts to ensure continued safe operation. The primary focus here is on technical support, based on the excellent application expertise of our highly-skilled and knowledgeable after-sales team.

Freedom
in machine
building.

We work in partnership with you to create the foundations for your own specific customer-oriented solutions. We are one of the few providers in the market who work with you throughout the development process of your machine – from the initial ideas through after-sales, from the control system to the drive shaft. This is what we call “Motion Centric Automation”.

And you can rely on our sales and engineering experts to get everything right first time. These experts are highly skilled in exploring your machine concepts and are capable of understanding even the finest of details. Working together, we ensure that your innovations are realized and carried all the way to market maturity. This is what characterizes Lenze as an innovative company and provides you with the necessary freedom to implement your ideas.



Making
engineering
distinctly
easier.

All of our services are freely scalable. You simply select the scope of services you require for your specific project. Our sales and application engineers are on hand at all times to provide you with individual product and application support. Whether you require support in selecting drive components or for the actual engineering, we can work together with you to develop the optimum solution for your machine's requirements.

For example we can advise and support you in:

- Planning your machine concept, developing the automation topology, system integration and safety engineering
- Planning and implementing software applications, all the way up to creating circuit diagrams and networks
- Creating prototypes, setting up and testing switchgear, commissioning and optimizing the automation and drive concept in your machine or training your operators

As a reliable partner, we accompany and support you from the initial design phase of the machine, through development, all the way up to commissioning and complete project management. This approach not only saves you valuable engineering resources and costs, it also significantly reduces the load on your planning and design department.



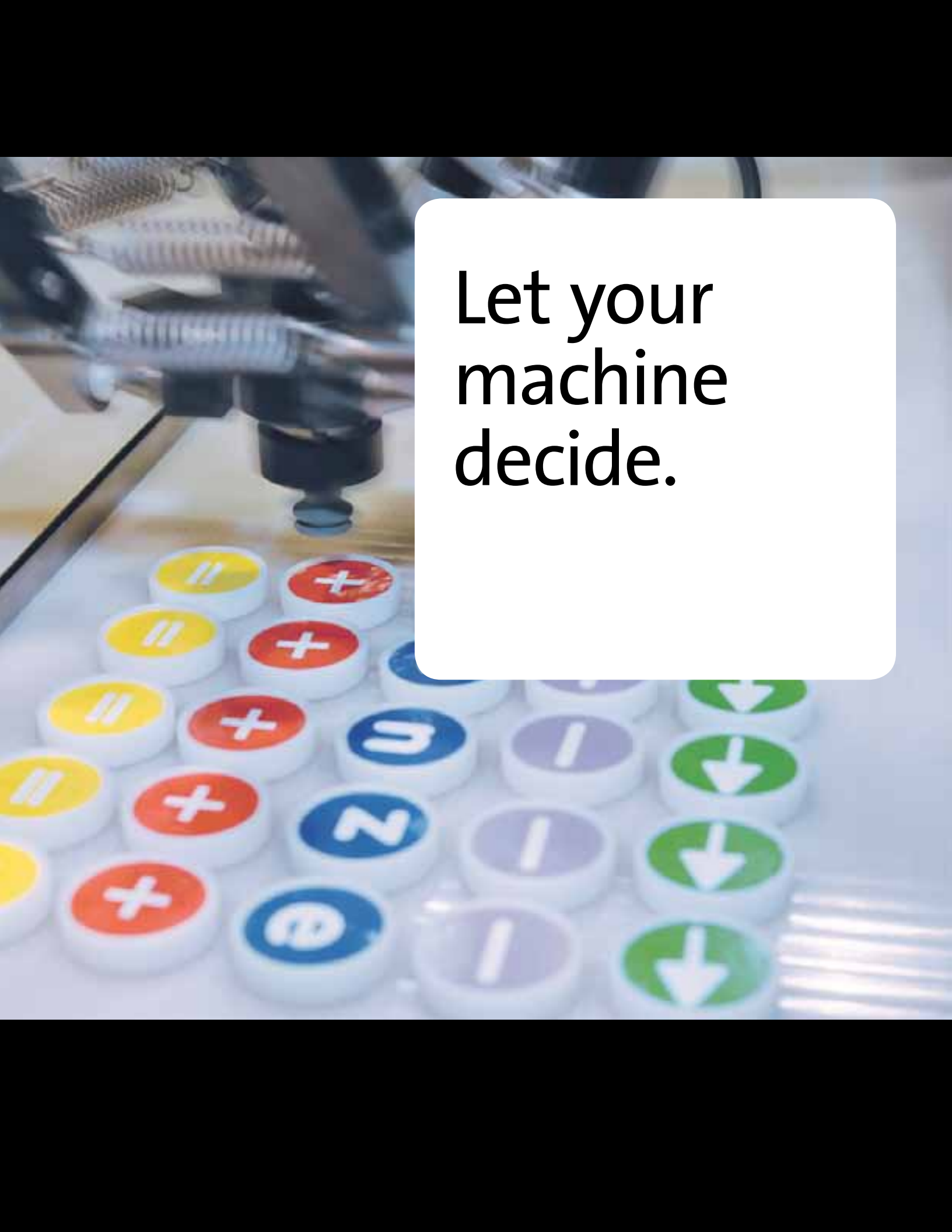
Requirement



Concept Development



Implementation

A close-up photograph of a robotic hand, likely a gripper, holding a small, light blue cylindrical component. The hand is positioned above a keyboard with various colored keys: yellow keys with double vertical bars, red keys with a plus sign, blue keys with letters 'n', 'z', and 'e', purple keys with a vertical bar, and green keys with a downward-pointing arrow. The background is slightly blurred, showing the mechanical parts of the robotic hand.

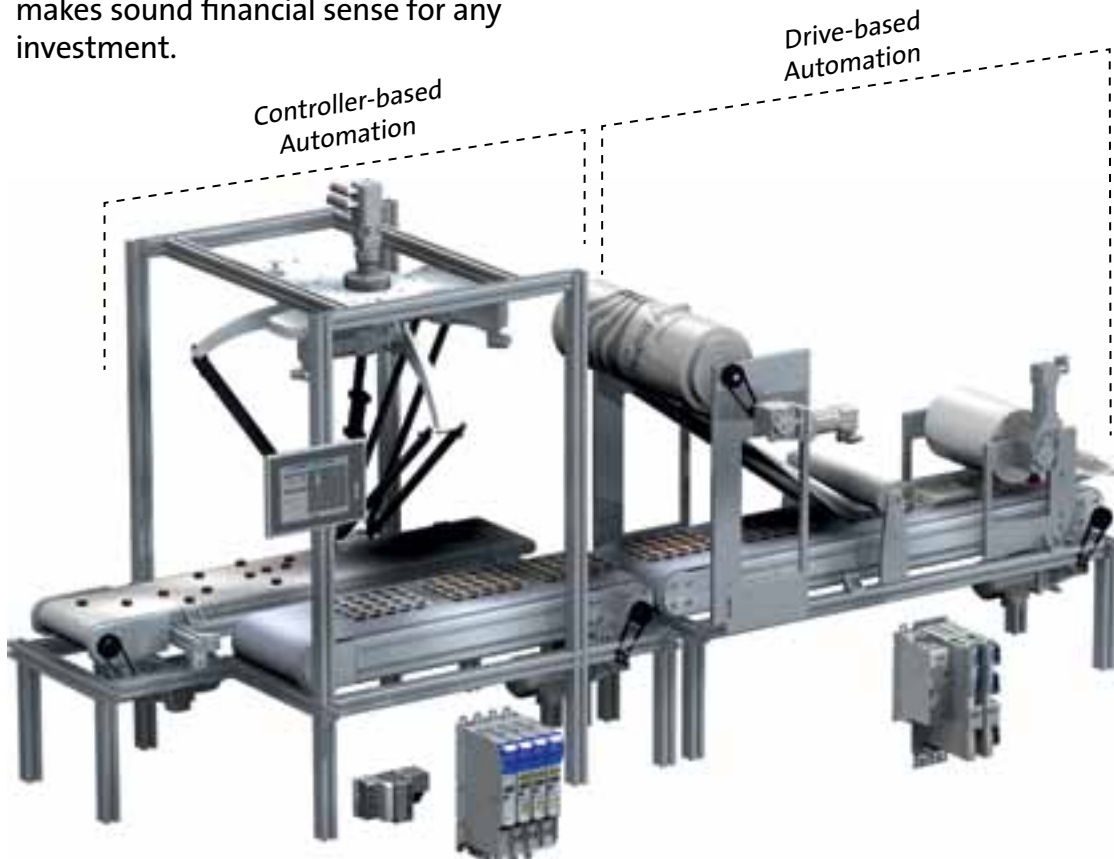
Let your
machine
decide.

With our automation systems, we always offer you a tailor-made, holistic approach for your machine – from the control system to the drive shaft. The individual system elements are optimally matched to one another and thereby meet the highest quality and efficiency standards in every respect.

We offer you automation systems for both central (controller-based) and decentralized (drive-based) motion control from a single source. Here, we place great emphasis on the use of market standards, such as EtherCAT, CoDeSys V3 and PLCopen, thereby simplifying integration into higher-level line topologies through standard interfaces. This ensures your independence and prevents you from relying on any single standard – which makes sound financial sense for any investment.

No matter whether controller-based automation, drive-based automation or both – we guarantee end-to-end support for your individual drive concept by:

- Calculating all necessary drive axes, including description of the respective machine task and selection of the drive technology
- Providing you with a mechanical and electrical drive concept, together with accompanying calculation of the drive mechanics
- Providing you with solutions for saving and distributing energy (DC-bus operation) to ensure efficient energy usage
- Providing you with global expertise that secures conditions for international approval and reliable operation of your machines



For central motion control: Controller-based automation.

The best way to implement powerful, central motion control for sophisticated machines is with our controller-based automation system. The controllers 3200 C and p500 offer the ideal prerequisites for this.

Motion control commands are forwarded to the Servo-Inverters i700 via the standardized EtherCAT realtime bus. Centrally managed, these inverters can drive all motors in your machine module.

The I/O-System 1000 combines impressive performance with extremely compact dimensions. An integrated backplane bus makes it possible for modules from the system to be directly side-mounted to the controller.

For an open visualization concept, we offer the uniform end-to-end VisiWinNET® visualization software and the EL100 range of high-performance HMIs for operation and monitoring.

The complete system is rounded off by our motors and gearboxes. From standard three-phase AC motors to highly dynamic synchronous servo motors, available without gearbox or combined with a standard industrial gearbox.



1 Controller 3200 C and p500: control and visualization functions in one compact unit.

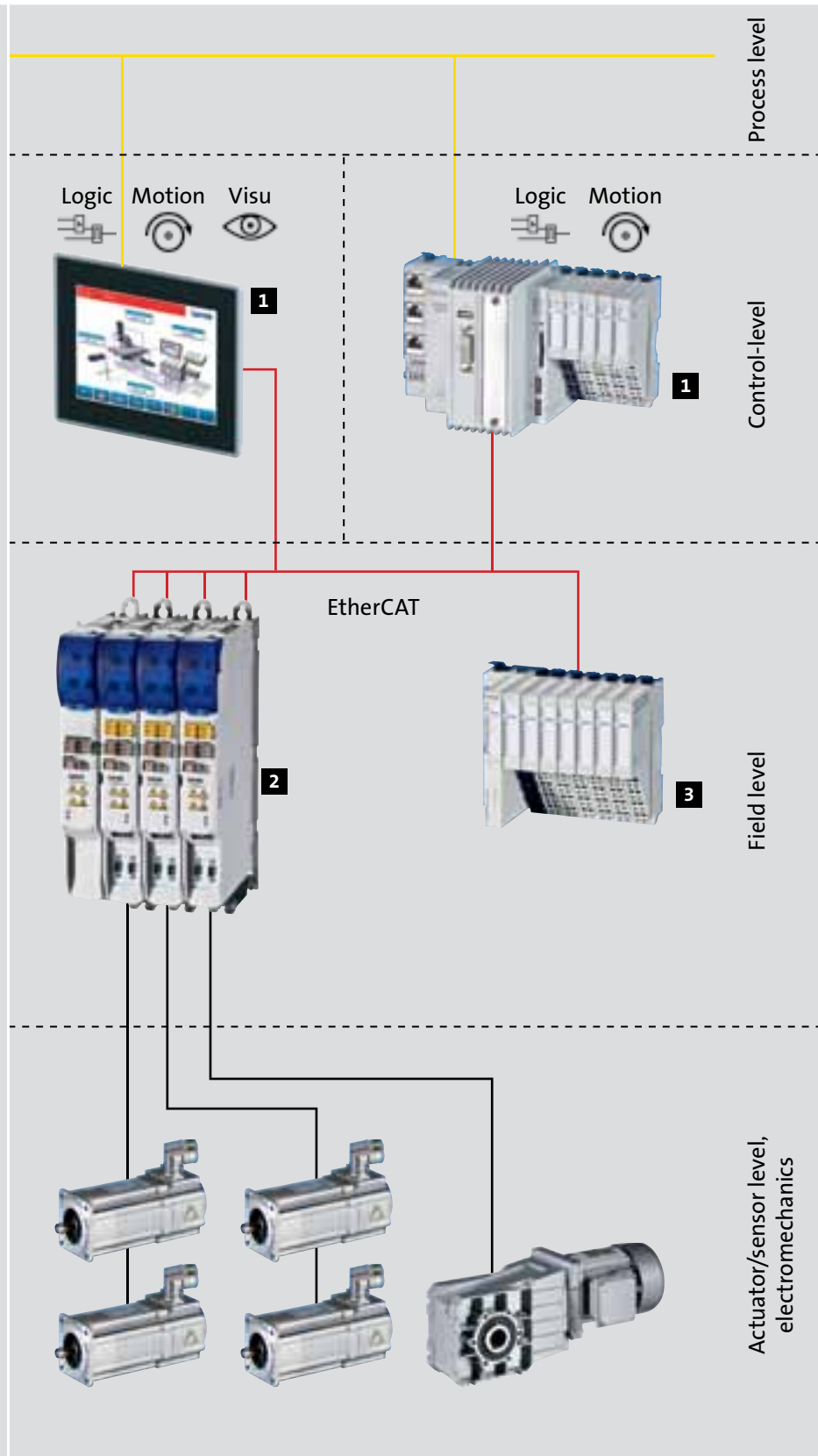
These controllers combine logic (PLC), motion and visualization in a single device. Thanks to its modern Intel Atom Processor®, extremely precise control can be implemented in even the tightest of spaces – for the best possible production results. The controllers provide the same functionality in different designs: 3200 C as a cabinet version – p500 as a panel version.

2 Servo-Inverters i700: adds a dynamic to multi-axis applications.

The Servo-Inverters i700 are characterized by their compact and highly flexible design. Dual axes keep the drive size to a minimum, while dynamic motor control makes the units suitable for use in a wide range of applications. Drive integration, commissioning and maintenance are substantially simplified thanks to the installation concept and easy engineering.

3 I/O-System 1000: a wide range of functions in a compact design.

The I/O-System 1000 is very slim and offers space for 8 connection points. With a total area of just 0.5 in. (12.5 mm), these units are ideally suited for use on conventional DIN rails. Thanks to its easily recognizable status LEDs, the labeling and diagnostics concept is very easy to understand and use. The highest speed requirements are also fulfilled for realtime-based architectures.



For decentralized motion control: Drive-based automation.

With compact machines and machine modules, decentralized motion control allows the load on the machine control system to be dramatically reduced or even eliminated altogether.

The Inverter Drives 8400 and 9400 in particular are capable of taking over decentralized control responsibilities. And the I/O-System 1000 can be incorporated into the system to evaluate the control signals. An end-to-end network can also be established, for example using EtherCAT or CANopen. This includes the scalable visualization concept using the HMIs from the EL100 product range and VisiWinNET® software.

Our range of motors and gearboxes round out the components required for a complete decentralized automation system.



**1 Inverter Drives 8400 HighLine:
Helps you stay on top of the situation.**

The Inverter Drives 8400 HighLine is ideally suited to drive tasks with or without speed feedback. It has integrated positioning control and is capable of handling up to 15 target positions – including the accompanying travel profile.

**2 Inverter Drives 8400 TopLine:
Makes it easy to achieve high dynamic performance and accuracy.**

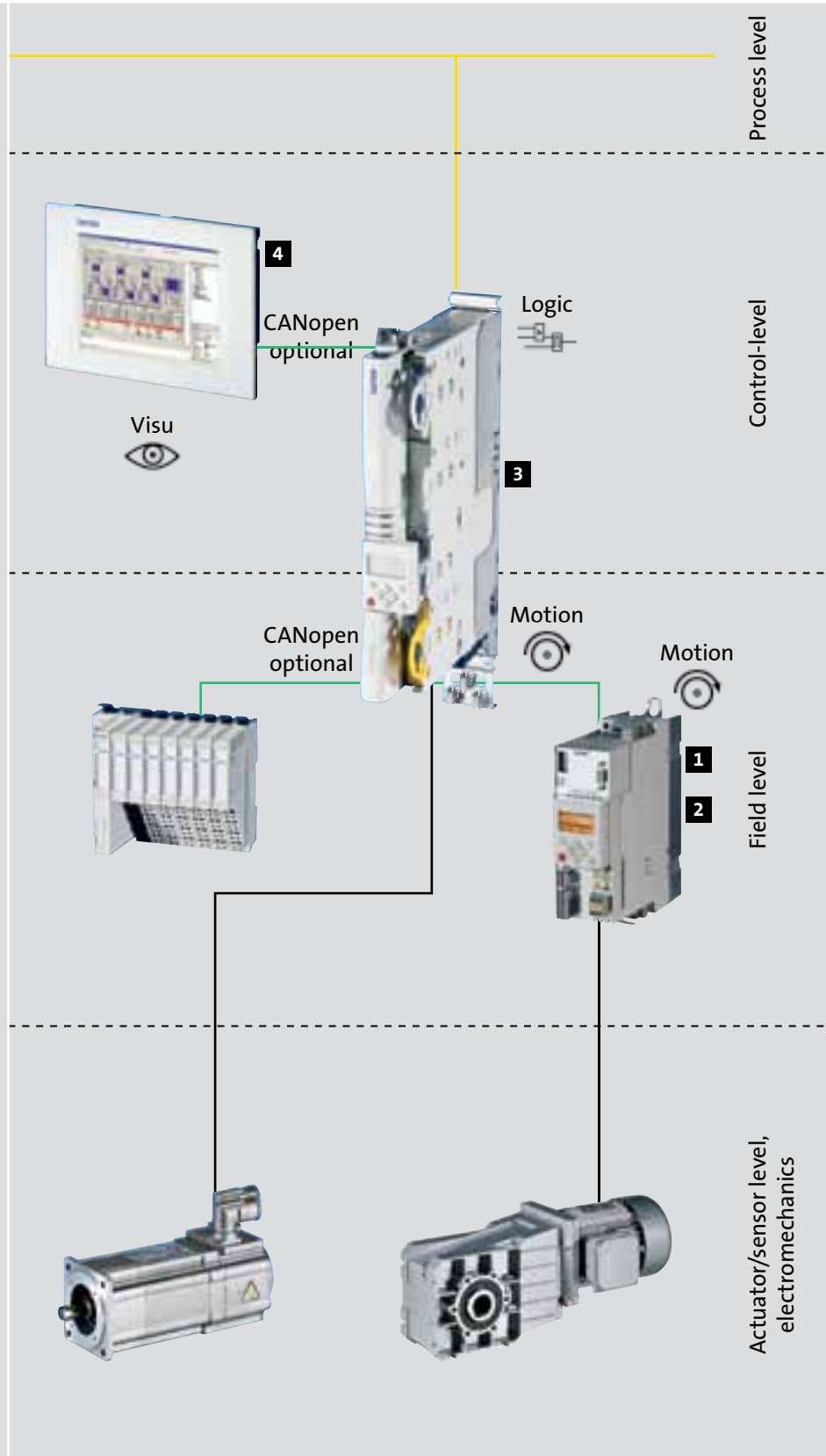
The Inverter Drives 8400 TopLine is the right inverter for positioning tasks that require high precision and feedback. As such, it is ideally suited to controlled, dynamic movements, such as flying saws or synchronized applications.

**3 Servo Drives 9400 HighLine:
Extremely versatile for demanding tasks.**

The Servo Drives 9400 is the right choice for high-precision and dynamic requirements – whether as positioning control, electronic cam or integrated servo PLC. In terms of communication and safety, the Servo Drives 9400 units offer a great deal of freedom for sophisticated and individual solutions directly in the drive.

**4 Human Machine Interface EL 100:
Functions in harmony with the operator**

Even in their basic version, the HMIs form powerful complete systems for operation and monitoring. Thanks to their use of Windows® CE, the compact touch panels have a flexible graphic user interface. Display sizes range from 3.5 in. (8.9 cm) to 10.4 in. (26.4 cm) for diverse applications.



We are excited to help get your ideas moving forward! Learn more about our approach, our way of thinking, our vision and how we can make things easier for you in the future. Please feel free to contact us directly or visit us at:

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Lenze.
com**

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