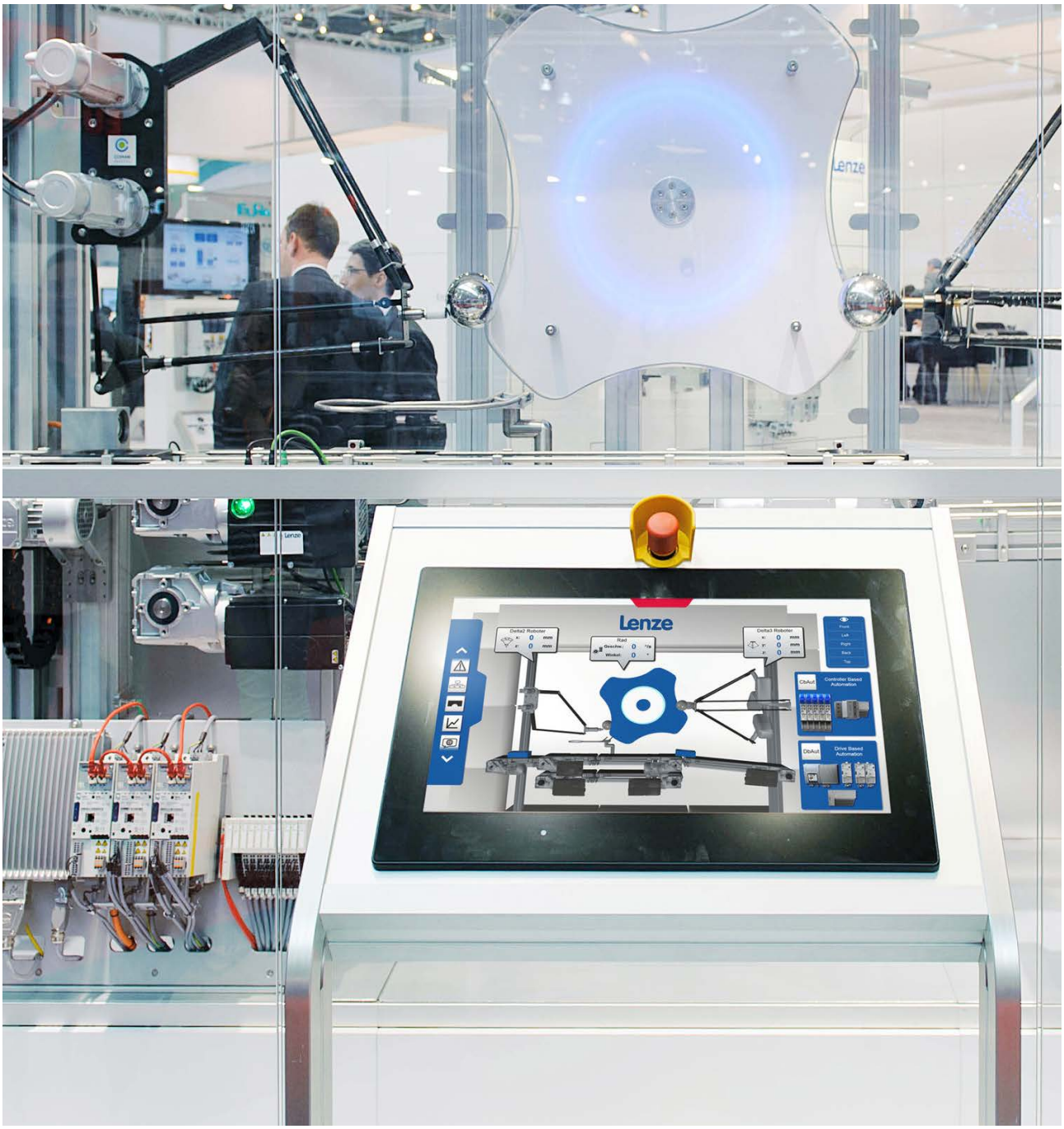
EASY Engineering Tools



As easy as that.

Lenze

We support your engineering.

The right tool for every task.

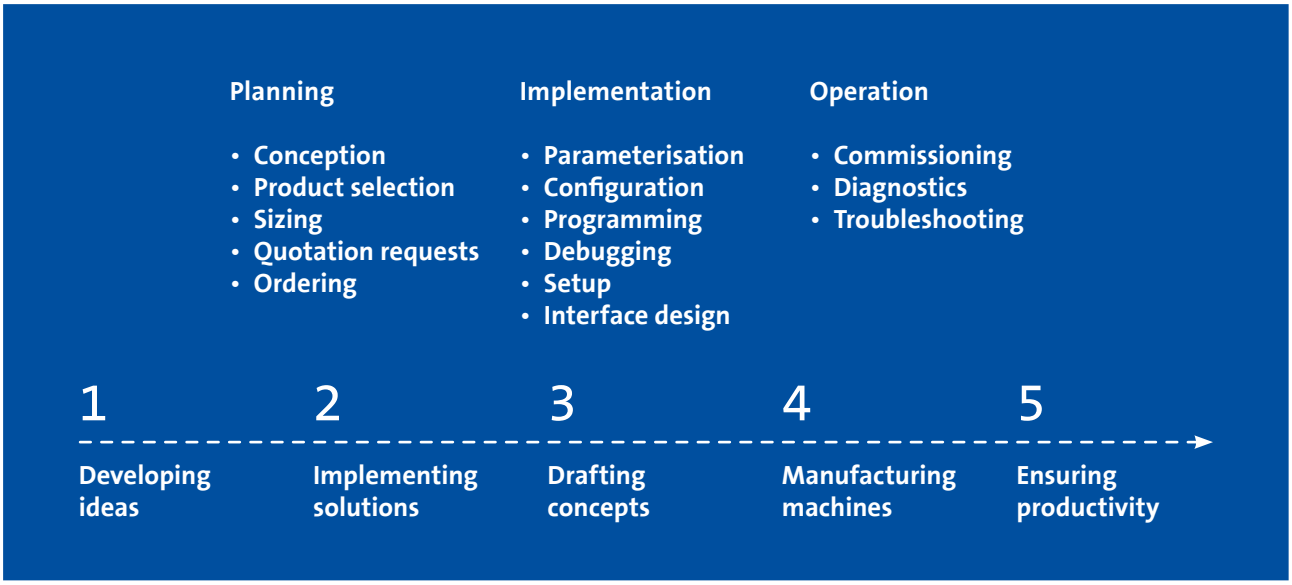
You want to plan, build or commission machines? Set up or carry out diagnostics on existing machines? Regardless of whether these applications are simple or require maximum precision and dynamics: You can select the tools that are right for you and make your engineering faster and easier.

EASY Product Finder – for finding the right products

The EASY Product Finder (EPF) is the online tool for searching, configuring, requesting quotations and ordering Lenze products. The EPF presents you with all the important information about our product range. This includes, for example, CAD data and product-relevant torque-speed characteristics. Basic sizing makes it easy to calculate applications and develop initial ideas for the machine solution.

Drive Solution Designer – for sizing drive solutions

Application-oriented drive sizing is the be-all and end-all for the development of a goal-oriented machine concept. Create, optimise and document drive solutions with the Drive Solution Designer (DSD). The DSD considers energy efficiency separately for each application. As a result, the tool uncovers potential savings for you during the development of the machine concept.



PLC Designer – for programming the controller

The PLC Designer is the tool for program creation and commissioning of products with PLC functionality on the basis of CODESYS V3. Logic & motion is programmed in accordance with the IEC 61131-3 standard. PLCopen certified components for motion control and coordinated motion make it easy to implement even extensive PLC projects. A graphical cam editor for cam profiles, debuggers and monitoring functions provides you with support.

EASY UI Designer – for machine visualisation

The EASY UI Designer is your tool for easily creating modern user interfaces for our v800 industrial PC series. The software offers comprehensive functions and an efficient graphical editor for designing individual user interface concepts for mechanical and plant engineering. Create your own templates for a personalised application and move the focus to the user – with intuitive and user-friendly machine operation.

EASY Starter – for parameterisation and operation

The EASY Starter supports service technicians with the commissioning and maintenance of your machines thanks to easy-to-use diagnostic and parameterisation dialogs. As an option, the tool facilitates online diagnostics and troubleshooting without the danger of inadvertent changes to the application.
The EASY Starter provides all the functions required for safe machine operation. The basic functions of the EASY Starter can be used to load finished applications, update device firmware and adjust parameters in context-guided interfaces.

EASY Product Finder

Product selection and more

The EASY Product Finder (EPF) supports designers and purchasers in selecting and procuring Lenze drive and automation products.

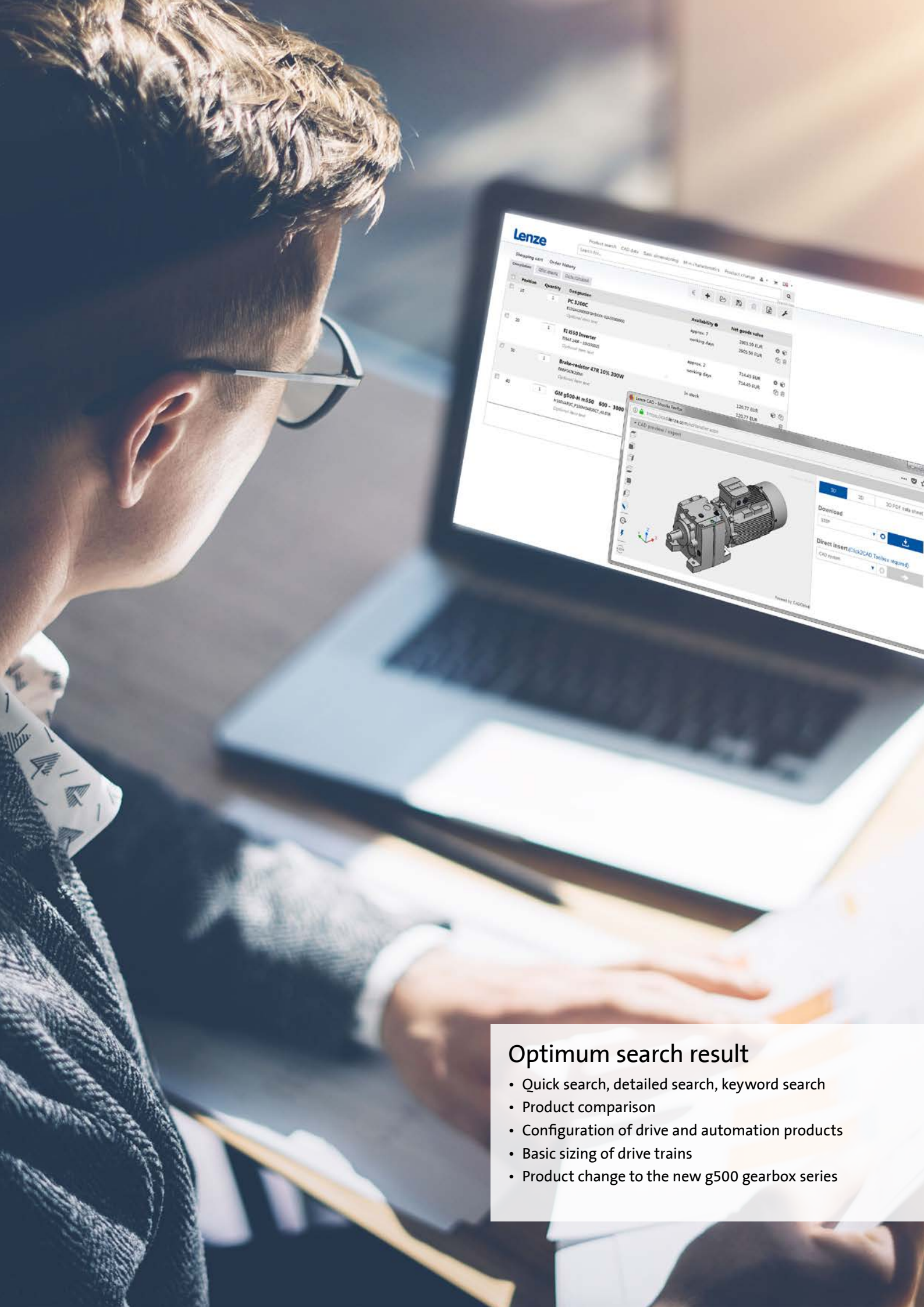
- Clear display of all products
- Quickly find the right products with the various search functions.
- The EPF searches our product database for you using performance data or specific properties in order to present you with the right product.
- Central management via the shopping cart

Your personal login provides the following options:
- Search for products by material number
- Determine prices and availability
- Place orders directly
- View order history

Comprehensive products such as geared motors can be adapted simply and to suit your machine requirements. Your product selection is added to the shopping cart and can be printed out as a results list. Therefore a price inquiry is possible with a just few mouse clicks. You will receive all necessary information in no time.

The basic sizing of the EPF allows you to develop an initial draft for a drive solution consisting of a geared motor and inverter.
It is easy to create a drive solution in just a few steps using basic applications such as travelling/conveying, lifting or rotating.

Flexible access from anywhere:
https://Productfinder.Lenze.com



Optimum search result

- Quick search, detailed search, keyword search
- Product comparison
- Configuration of drive and automation products
- Basic sizing of drive trains
- Product change to the new g500 gearbox series

Product search

The EPF supports you in your search for the right products with intuitive search functions.

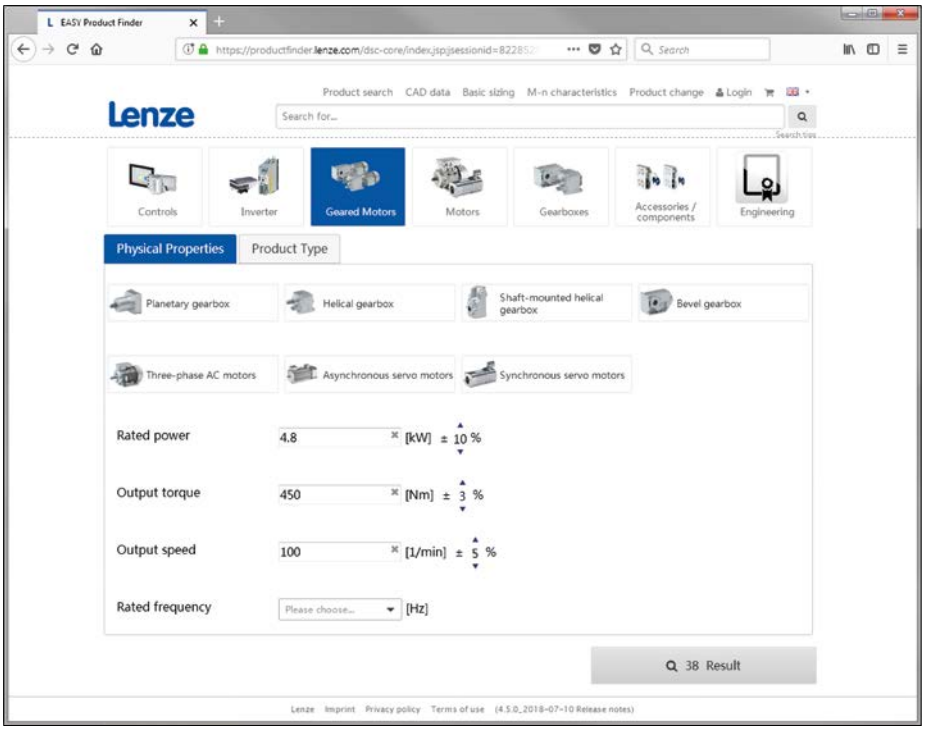
- The quick search provides a targeted entry based on the most important search criteria.
- Search criteria, product properties or type designations can be entered directly and linked via the keyword search.
- Further useful search criteria in the detailed search help to refine the result or to enable other search entries.
- Product suggestions from the results list can be compared based on their properties.
- Additional options can be defined subsequently in the product configuration for products with many variants, such as geared motors.

Shopping cart

The shopping cart is the central location for storing your selected products and for carrying out all further steps in the procurement process.
Shopping carts can be stored locally, divided and merged when they are loaded.

Storage of the product selection:
- Product search
- Product configuration
- Basic sizing
- Sizing from the DSD
- Material number (login)
- Order history (login)

Shopping cart functions for the further procurement process:
- View/log product data
- Modify product configuration
- Generate CAD data
- Make request for quotation
- Determine prices and availability (login)
- Order products directly (login)



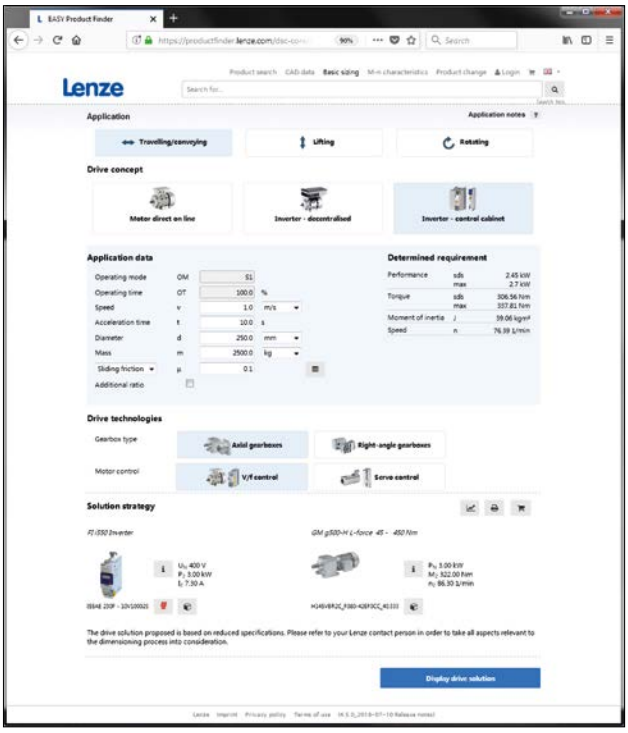
Basic sizing

In addition to the pure product search in the EASY Product Finder, the basic sizing offers you the opportunity to easily come up with a "first" draft of a drive solution for a geared motor with an inverter.

The tool comes to a solution quickly and efficiently in just a few steps using basic applications such as travelling/conveying, lifting or rotating.

1. Select application
2. Select drive concept
3. Enter the application data
4. Select drive technologies
5. Find drive solution

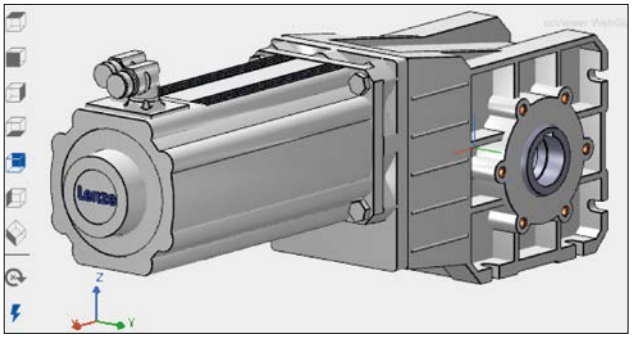
Including M-n characteristics, CAD and ePLAN data. The solution can be logged and transferred directly to the shopping cart.



CAD data

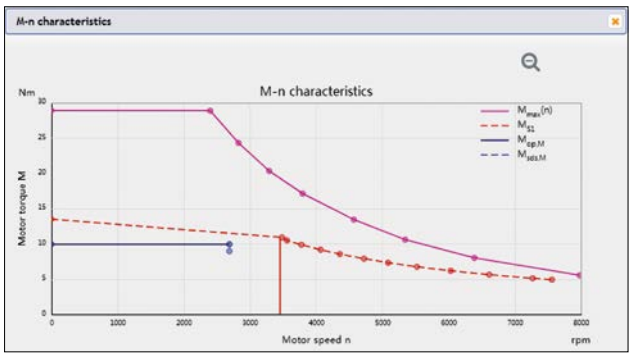
- Search for and find CAD data in a targeted manner
- Retrieve a product directly from the shopping cart

Available in all common 2D and 3D formats, including 3D PDF.



M-n characteristics

Determine and log torque-speed characteristics of motor/inverter combinations.



Drive Solution Designer

Plan and test drive solutions

A mechatronic system analysis is extremely important for a machine concept. Designers can quickly and easily determine the right drive sizing with the Drive Solution Designer (DSD).

The DSD contains well-founded and proven knowledge on drive applications and electro-mechanical drive components. This knowledge is made available to you interactively. Both simple and complex applications are defined by their individual process data and specific speed curves. The mechanical and electrical drive structure can be individually adapted to the requirements of your machine. The drive components are tested for both the physical requirements as well as the feasible combinations.

All parties involved in the planning process have a shared view of the development of the drive solution. Alternatives can be developed with different solution concepts, drive technologies, products or utilisation in the application to achieve the optimum drive solution.

The energy performance certificate transparently illustrates the energy balance of the calculated drive solution. A detailed technical protocol summarises the design results.

The DSD is equipped with an interface to the EASY Product Finder (EPF), thereby combining the advantages of the EPF with those of the DSD.

The highlights of the DSD include optimum ease of operation for quick and simple drive sizing, analysis and testing of the entire drive system and the creation of alternative drive solutions.

Optimum result

- Shared view of the development of the drive solution
- Create alternatives with different solution concepts and drive technologies
- Transparent energy balance
- Comparison of all solutions
- Detailed technical protocol

User groups

- Design engineers in the planning phase
- Project engineers in the development and commissioning phase
- Service personnel for checking field problems

Applications

- Comprehensive applications such as linear and rotary drives, winding drives, wheel drives, hoist drives and synchronised drives, belt conveyors and pumps
- Process parameters with solution knowledge
- Description of standardised operating modes
- Freely definable motion sequences using convenient editor
- Import of an M/n load characteristic
- Check lists for collecting the application parameters

Mains, ambients

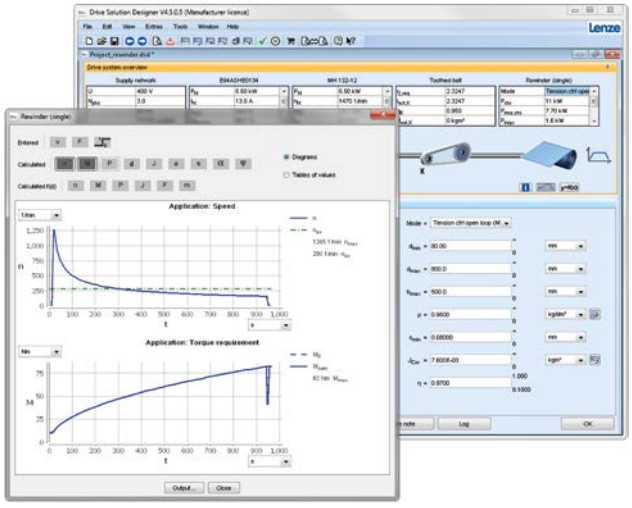
- Network configurations and voltages
- AC mains and DC multi-axis grouping
- Ambient conditions

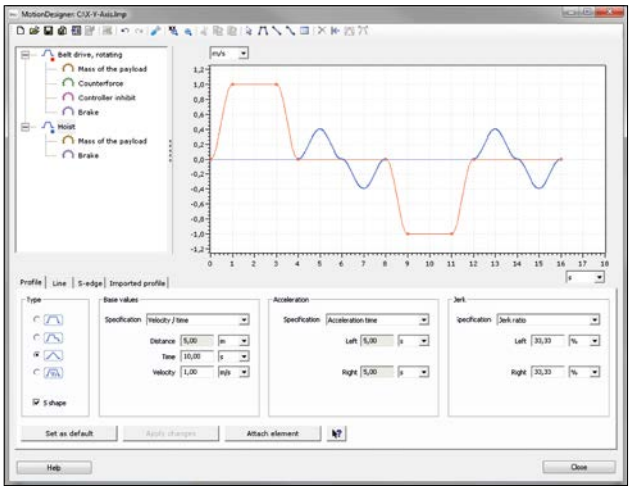
Drive systems

- Motor on inverter with different control processes
- Mechanical built-on accessories (brakes, encoders)
- With or without gearboxes
- With or without additional drive element
- Single and multi-axis systems
- Regenerative power supply modules
- Brake resistors
- Component combinability
- System integration and product knowledge
- Sizing of application motors

Tests/scenarios

- Limit loads (electrical/mechanical)
- Utilisations, reserves, mains load
- System tests, e.g. by considering the M-n characteristic of the drive system up to field weakening
- Possible combinations
- Losses and energy efficiency
- Coordinated motion sequences



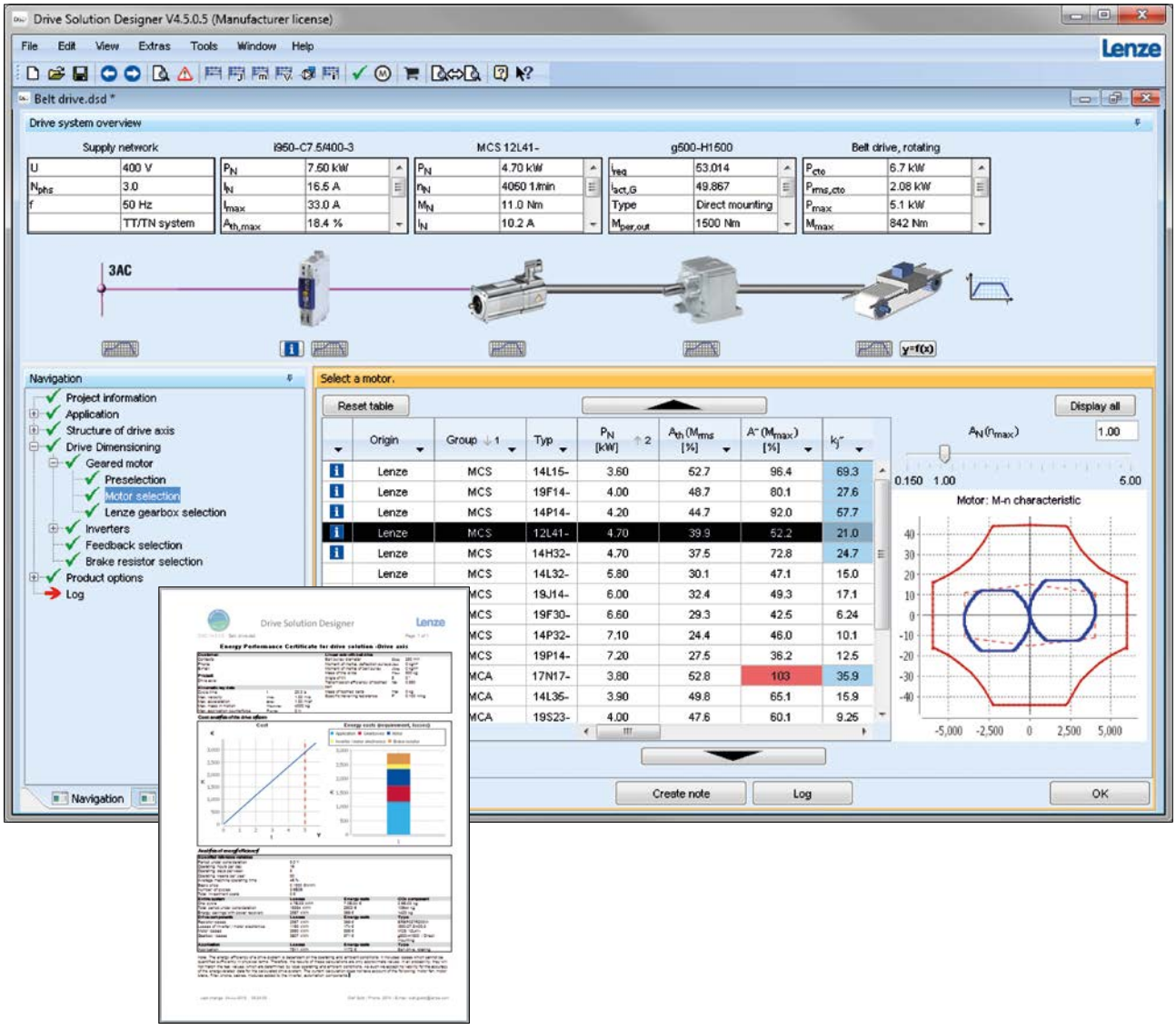


Useful functions

- Drive Solution Energy Performance Certificate
  - Transparency for the application and the entire drive system
  - Energy requirements, energy costs, CO2 emissions, optimisation potential, amortisation
- Application tuner: immediate comparison of solutions with different operation of the application
- Solution documentation through adaptable protocols (short and detailed protocol, commissioning protocol)

Features

- Optimum ease of operation for fast, simple and professional drive sizing
- Optional selection of the product options
- Consideration and check of the entire drive system
- Providing alternatives with comparison
- Various host computers and tables of values
- Available in different languages
- Metric and imperial units
- Online help with operating and sizing tips
- Comprehensive web links to further information sources



PLC Designer

Program creation and commissioning

The PLC Designer is the tool for your program creation and commissioning of our PLC products. The PLC products are programmed in accordance with the IEC 61131-3 standard.

The PLC Designer offers you all the functions you need for convenient engineering of controller-based solutions. In addition, we offer you comprehensive support in the realisation of your projects through our application engineers in every project phase.

The software is based on CODESYS V3 and is intended for project engineers of mechanical engineering companies. The PLC Designer functionalities include an extensive library of function blocks for a wide range of tasks. The PLC Designer can be used in combination with the EASY Starter for straightforward commissioning.

Highlights

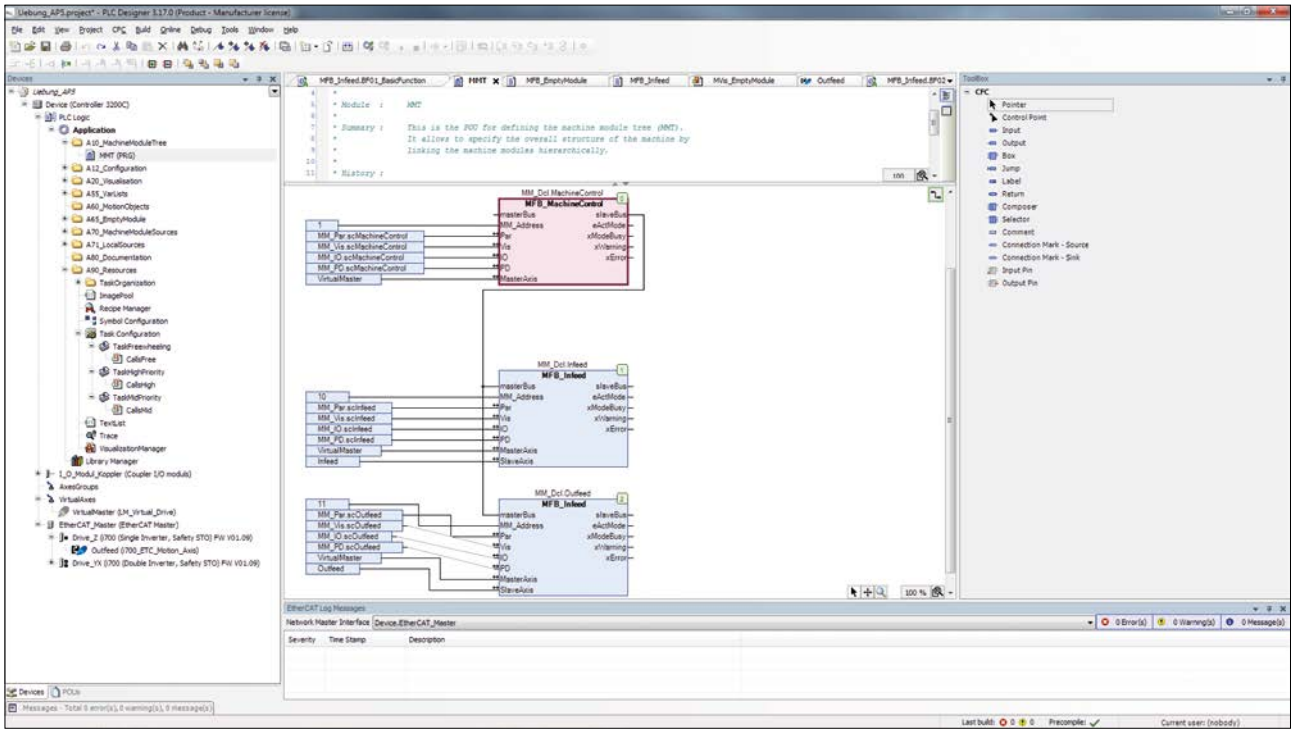
- Function blocks according to PLCopen part 1 + 2
- Graphical cam editor with import and export function
- Integrated visualisation for easy process visualisation
- All important information at a glance during the commissioning process
- Visualisation of trends and process data

PLC functionality in line with IEC 61131-3

- Instruction list (IL)
- Ladder diagram (LD)
- Function block diagram (FBD)
- Structured text (ST)
- Sequential function chart (SFC)
- Continuous function chart editor (CFC)

Simply master the complex

- Library collection with standardised FAST technology modules
- Different versions of the same library can be used



Distributed applications

- Several control systems in one project
- Separation of functioning and hardware
- Several applications on one hardware device

Reuse

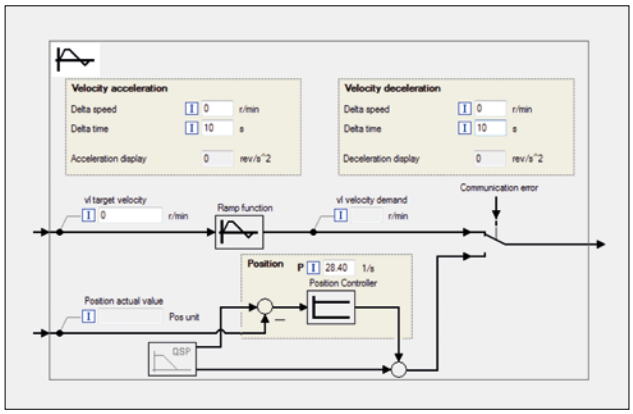
- Object-oriented programming
- Conditional code generation – facilitates the creation of scalable programs through the use of pre-processor instructions

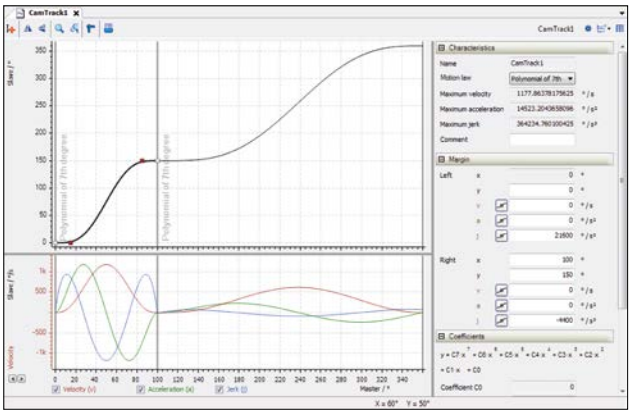
Parameterisation dialog

All diagnostic and parameterisation dialogs of the EASY Starter are also available in the PLC Designer

Graphical cam editor

Easily define even complex motion control. Including cam tracks as well as import and export of data point tables





EASY UI Designer

Visualisation at the expert level without programming knowledge

An intuitive interface design supports simple and error-free operation in complex situations. The EASY UI Designer provides you with tried and tested innovations from the field of graphic design and modern user interface designs.

You can easily create optimised, individual operating concepts for different user groups using examples and the supplied control objects. The operating elements can be adapted dynamically by the operator during runtime.
The customised machine visualisation and user interface satisfy the requirements for user-oriented operation and provide an optimum user experience.
A high-performance graphical editor supports your project planning and simplifies the interface design by means of drag and drop.

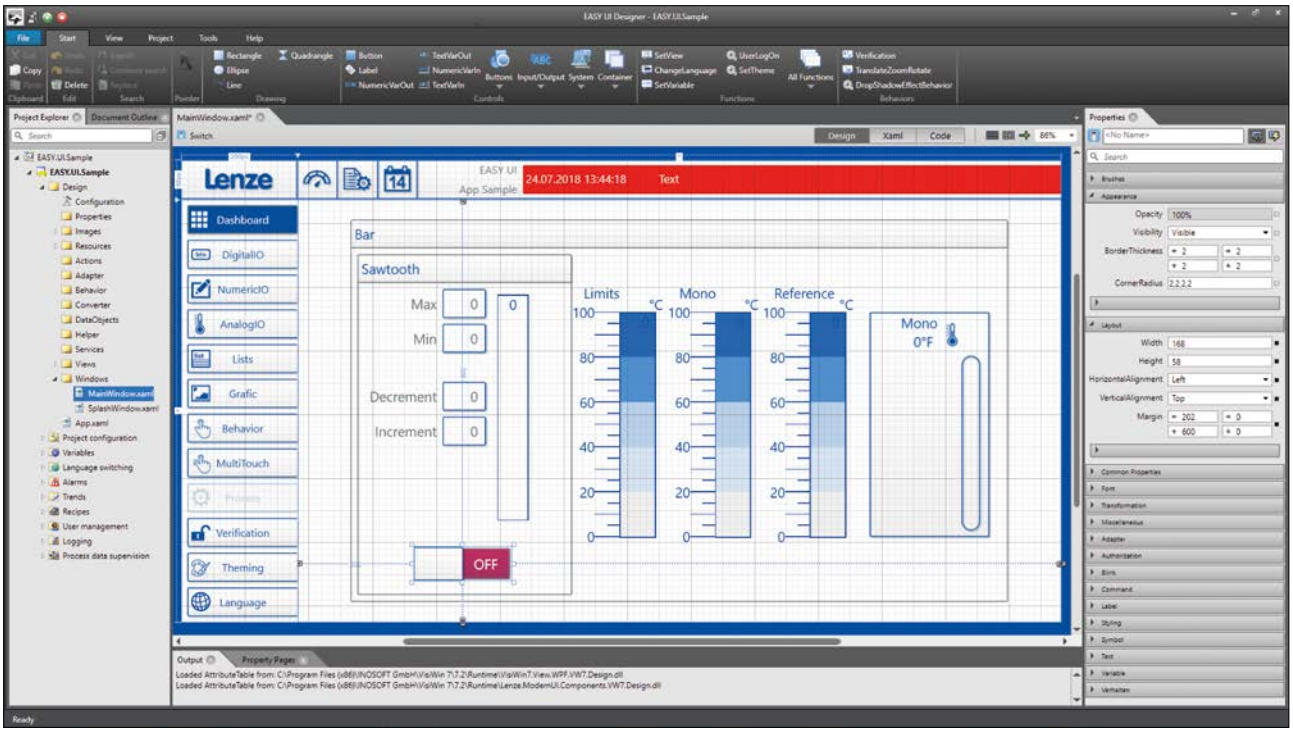
The EASY UI Designer can be used to design an online editable dashboard with predefined widgets as well as multi-touch gestures.

The EASY UI Designer is based on an open system approach: Advanced non-standard operating elements can be developed collectively.

Highlights

- Optimum user experience for the machine visualisation and operation
- Efficient graphical editor for user interface design via drag and drop
- Online editable, user-specific dashboard with predefined widgets
- Multi-touch gestures

EASY UI Designer



Features

- Supported series: v800
- Vector-based visualisation
- Online editable, user-specific dashboard with predefined widgets, such as donut, gauge, trend, bar graph, actual value display
- Can be extended for individual customer requirements by adding controls, templates, styles, property filters, project types, etc.
- Quicker and easier operation with advanced technologies that support multi-touch gestures
- Comprehensive template library
  - Customisable view & project templates
  - Customisable layout
  - The ability to create your own templates
- Advanced communication error handling, e.g. through optical feedback of the controls

Process communication

- OPC UA
- Optional connections to 3rd party control systems
- Variable abstraction layer/switching between control systems

Language switch function

- All texts are created in Unicode
- Texts with dynamic components (variables)
- Switching of characters (Europe/Asia), units, symbols and colours
- Import and export tool for Excel

Alarm management

- Structuring and definition of alarm classes, alarm groups, user-defined display elements with filtering and sorting
- Different types of acknowledgement
- History with language switching

Recipe management

- Single recipes with variable values
- File and transfer operations triggered by PLC or user
- Transferable recipe files
- Integrated history
- Value editing directly on the user interface

Trend recording

- Recording for y-t and x-y diagrams
- Ring buffer in the memory or as a file
- Sequential archives for time periods (day, week, etc.) or for batch data
- Profile selection for runtime; arbitrary scaling and zoom

Logging

- Automatic recording of system, operating and user events
- FDA CFR 21 Part 11 compliant audit trail
- User's log

User management

- User administration at runtime
- Comprehensive settings regarding password and logging mechanism
- FDA CFR 21 Part 11 compliant access protection

EASY Starter

Commissioning and maintenance

By users for users. The EASY Starter supports you in the commissioning and maintenance of your machines. Easy to use parameterisation and diagnostic dialogs and a structured graphical user interface allow you to keep the necessary overview in every situation.

The EASY Starter has been designed specifically for the commissioning and maintenance of Lenze products. The tool enables online diagnostics and troubleshooting within this framework. No parameter modification is possible in the diagnostic mode, meaning that there is no danger of accidental application modification.

A user-friendly menu navigation featuring just a few buttons supports you in all machine adjustments.

The EASY Starter includes all functions that are of importance to you, such as the loading of finished applications onto the device, updating the device firmware or adjusting parameters in context-guided interfaces. The EASY Starter has the right user interface for a variety of applications.

Highlights

- Intuitive interface
- Support in the commissioning and maintenance of Lenze products
- Application-specific interfaces possible

Intuitive interface

- Interfaces optimised for different applications and users
- Concise menus with just a few buttons
- User guidance independent of the device
- Easy management of multiple devices
- The right parameter with just a few clicks
- Direct support for all device parameters and messages

Commissioning

- Parameterise inverters or controllers with dialog guidance
- Compare and document applications that have been created
- Perform engineering tasks with many inverters and controllers at the same time
- Use innovative near field communication (NFC) for parameterisation
- Parameterise safety functions

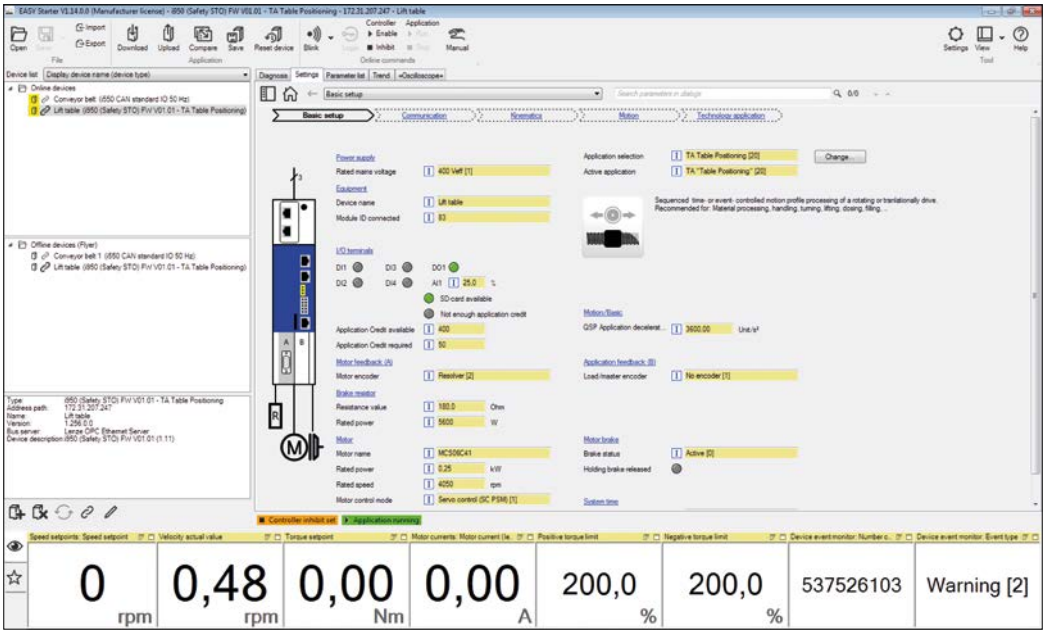
Maintenance

- Update the application
- Obtain a speedy diagnosis (incl. trend record)
- Update the firmware
- Perform engineering tasks with many inverters and controllers at the same time
- Use oscilloscope for the diagnosis and optimisation of fast processes (device-dependent)
- Carry out program-controlled updates of application and firmware (batch mode)
- Retrieve from external tools via tool calling interface (TCI)
- Gateway configurable for OPC-UA and MQTT

Application-specific interfaces

The EASY Starter can be used in operating modes specific to the application, giving each user an individually tailored interface to efficiently perform their task:

- EASY Starter
- EASY Starter/Online only
- EASY Starter/Online & Read only
- EASY Application Loader
- EASY Firmware Loader
- Smart Motor



EASY Starter

- The full range of functions of the EASY Starter for all users who want to diagnose and set up machines and drives.
- Management of offline and online devices

EASY Starter Online only

- Modifications of parameters directly in the connected device
- Communication via all existing Lenze OPC bus servers
- Easy selection of the communication path to the device
- Transfer to several devices possible

EASY Starter Online & Read only

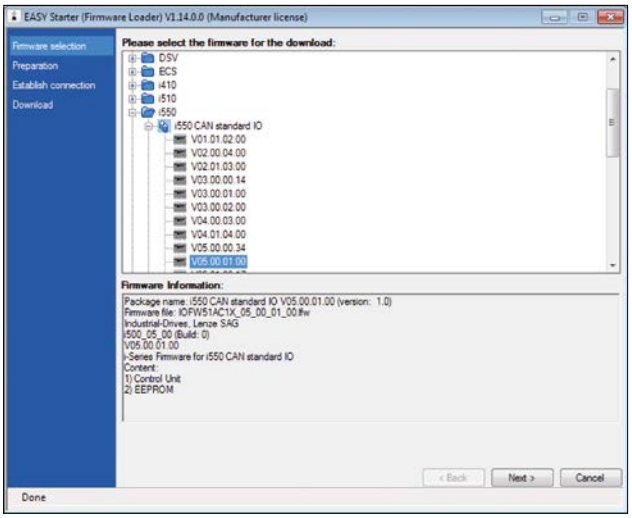
Simple online device diagnostics – without the danger of inadvertent changes to the application

EASY Application Loader

- Easy-to-use assistant for service personnel of mechanical engineering companies and end customers
- Load the finished customer application into devices in just a few steps
- Batch control available for serial commissioning

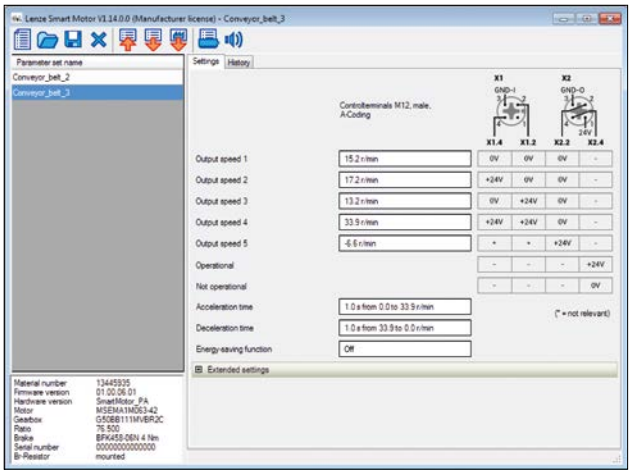
EASY Firmware Loader

- Easy-to-use assistant for service personnel of mechanical engineering companies and end customers
- Load firmware into devices in just a few steps
- Batch control available for serial commissioning

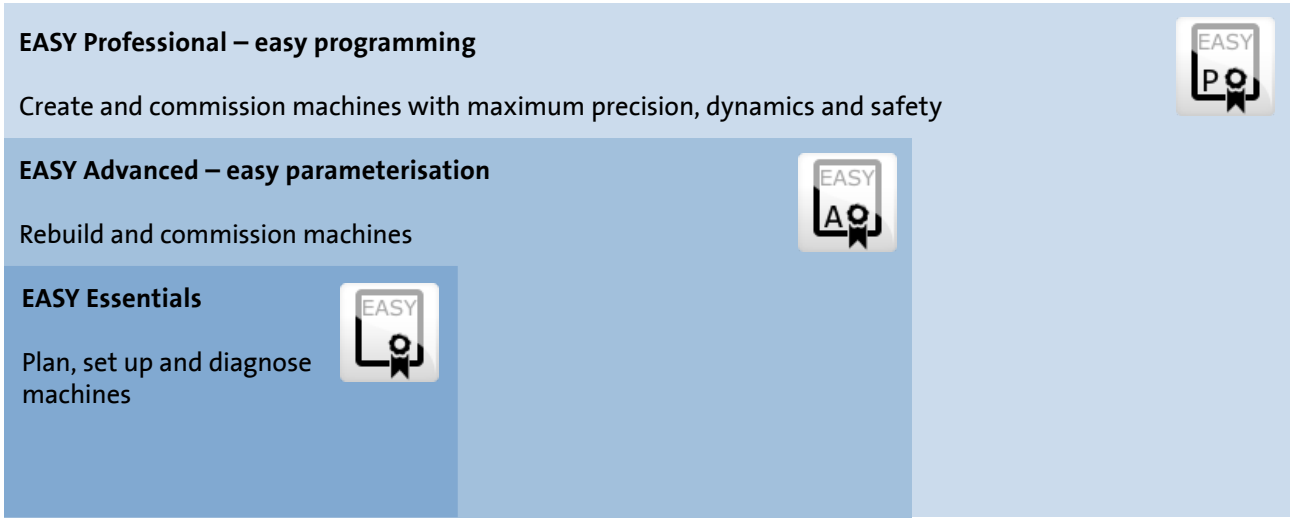


Lenze Smart Motor

- For service personnel of mechanical engineering companies and end customers who use the Lenze Smart Motor
- Easy-to-use PC tool for parameterising the Lenze Smart Motor
- Transfer to motor via USB-NFC adapter (not included in the scope of supply)



The right license for every user group



EASY Essentials (free of charge)

Everything you need in the planning phase of your machine: quickly and easily identify, design and assemble the right products. And when operating your machine, you can access all the parameters quickly and adjust them if necessary.

EASY Advanced (licence)

With additional functions for convenient commissioning and optimisation of the drive train, your possibilities are broadened. This allows you to configure machines more quickly. Become more confident about developing and commissioning your machine. With the EASY Advanced licence, you can adjust, analyse and optimise the drive for the application in question more precisely and efficiently.

EASY Professional (Licence)

Machine programming according to industrial standards: EASY Professional contains all the functions you need to plan and implement complex tasks to completely automate the machine.

Possible variants for all license levels:

- **Single:**
  Single user license for one workstation
- **Company:**
  Multi-user license for all workstations within a company
- **Buyout:**
  Multi-user license for all workstations within a company, sub-licensing to customers as part of machine supply permitted

Our engineering tools are available for download:
http://www.Lenze.com/de-de/download/software-downloads

○ EASY Essentials
● EASY Advanced
✚ EASY Professional

	Use case/function	EASY Product Finder	Drive Solution Designer	PLC Designer	EASY UI Designer	EASY Starter
Planning	Catalogue function: Find products, choose options, request a quotation	○				
	Basic sizing: Find the right products for the application	○				
	Exact sizing: Optimally size the drive train for the application		○			
	Carry out an energy efficiency analysis for the application with the entire drive train		○			
	Use engineering data (CAD, M-n characteristics and much more) of Lenze products	○	○			
	Size the drives for your own motors		✚			
Implementation	Parameterise inverters and controllers with dialog guidance			✚		○
	Use extensive application templates			✚		
	Process projects and applications offline			✚		●
	Compare and document applications that have been created			✚		●
	Perform engineering tasks with many inverters and controllers at the same time			✚		●
	Use innovative near field communication (NFC) for parameterisation					●
	Graphically configure inverters with the FB Editor for the particular tasks of your machine			✚		
	Program inverters or controllers for the machine tasks (logic and motion)			✚		
	Set up complex processes, e.g. electronic cams or coordinated movements			✚		
	Parameterise safety functions			✚		✚
	Create machine user interfaces				✚	
Operation	Update application			✚		○
	Speedy diagnostics (incl. trend record)			✚		○
	Update firmware					○
	Perform engineering tasks with many inverters and controllers at the same time			✚		●
	Oscilloscope for the diagnosis and optimisation of fast processes (device-dependent)			✚		●
	Carry out program-controlled updates of application and firmware (batch mode)					●
	Retrieve from external tools via tool calling interface (TCI)					●
	Gateway configurable for OPC-UA and MQTT					●

EASY Professional is available as a 30-day trial version with full functionality.

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