Drive PLC

Co-ordinating drives intelligently

Drive based automation – intelligent and modular

Lenze

Drive PLC | co-ordinating drives intelligently

The Drive PLC adds a freely programmable drive PLC to the 8200 vector frequency inverter.
This combination not only controls motion in your machine, but can now also perform central control tasks.
The system is programmed using the IEC 61131-3 compliant, international standard PLC programming languages.

What additional benefits does Drive PLC offers over a standard PLC?

▶ Cost-effective system with high basic functionality
▶ Slots for extension boards
▶ Can be mounted next to the 8200 vector
▶ Straightforward engineering using a special software library for simple integration of the 8200 vector into the PLC program
▶ The integrated system bus interface to the frequency inverter saves on control cables
▶ Pluggable modules enable easy integration into fieldbuses
▶ Gateway function to devices connected to the Drive PLC (CAN)

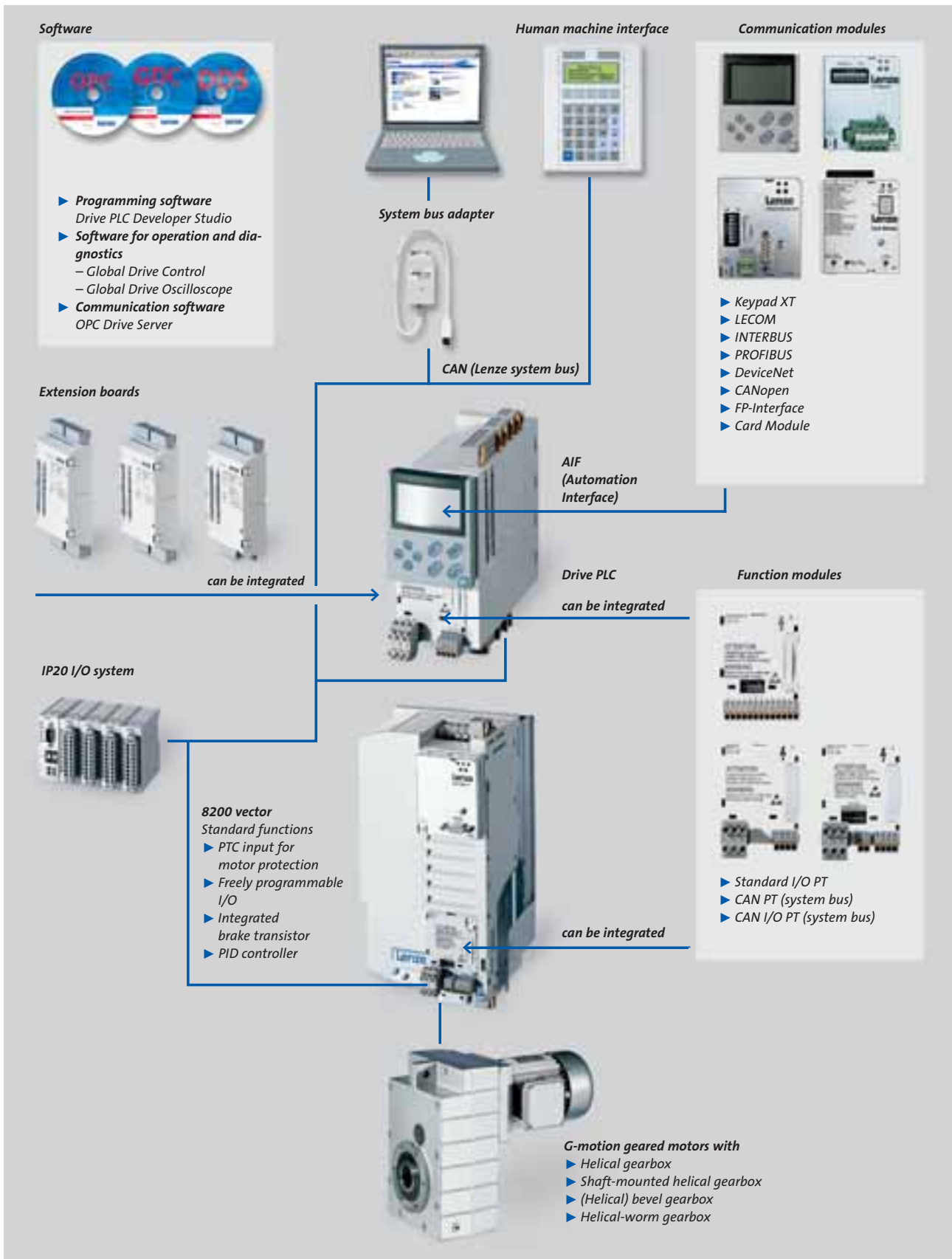## The system

Lenze offer a complete automation system for your application. Not only will you find that the electrical part of your machine is quick to configure thanks to the co-ordinated drive components and accessories, but the software which brings your machine to life is based on a combination of basic configurations and Lenze technology functions which have been compiled with a view to saving time.

Drive PLC

System overview | co-ordinated components

Software

► **Programming software**
Drive PLC Developer Studio
► **Software for operation and diagnostics**
  – Global Drive Control
  – Global Drive Oscilloscope
► **Communication software**
OPC Drive Server

Extension boards

Human machine interface

System bus adapter

CAN (Lenze system bus)

**AIF
(Automation
Interface)**

can be integrated

Drive PLC

can be integrated

IP20 I/O system

8200 vector
Standard functions
► PTC input for
  motor protection
► Freely programmable
  I/O
► Integrated
  brake transistor
► PID controller

can be integrated

Communication modules

► *Keypad XT*
► *LECOM*
► *INTERBUS*
► *PROFIBUS*
► *DeviceNet*
► *CANopen*
► *FP-Interface*
► *Card Module*

Function modules

► *Standard I/O PT*
► *CAN PT (system bus)*
► *CAN I/O PT (system bus)*

G-motion geared motors with
► *Helical gearbox*
► *Shaft-mounted helical gearbox*
► *(Helical) bevel gearbox*
► *Helical-worm gearbox*

Engineering | fast and easy to use

Drive PLC Developer Studio (DDS)

Drive PLC is programmed in a powerful software development environment. Five different editors are available in the IEC 61131-3 compliant standardised programming languages, allowing the programmer to select the most suitable language according to the application and his personal programming skills. Different languages can also be combined.

All variable values are displayed in debugging mode and monitoring mode. You can set break points to optimise the new program quickly and easily.

CFC editor

The powerful CFC editor is a graphical function plan editor in which the program elements can be freely positioned in the workspace. Elements and program organisation units can also be combined to macros in order to simplify more complex logical structures.
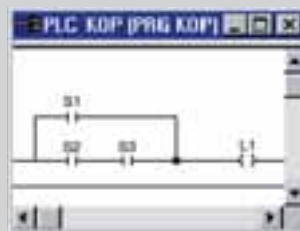
Drive PLC system features

► 191 kB program memory
► 800 kB EEPROM parameter memory
► 11.3 kBs of user memory (RAM)
► 200 Bytes of powerfail-proof user memory
► 1 cyclic task
► 8 time or event-controlled tasks
► Minimum task running time: 1 ms
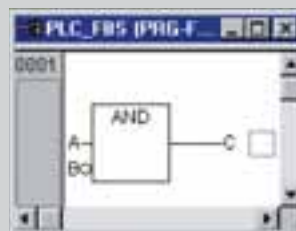► Processing time for bit operations: 0.7 µs

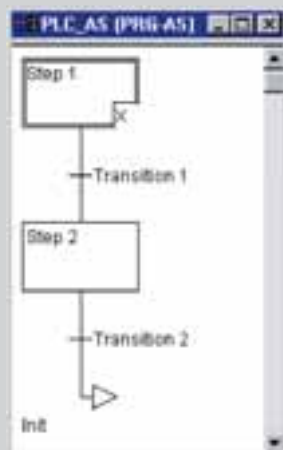## Programming languages of the Drive PLC Developer Studio
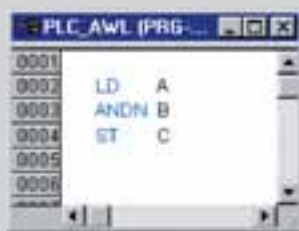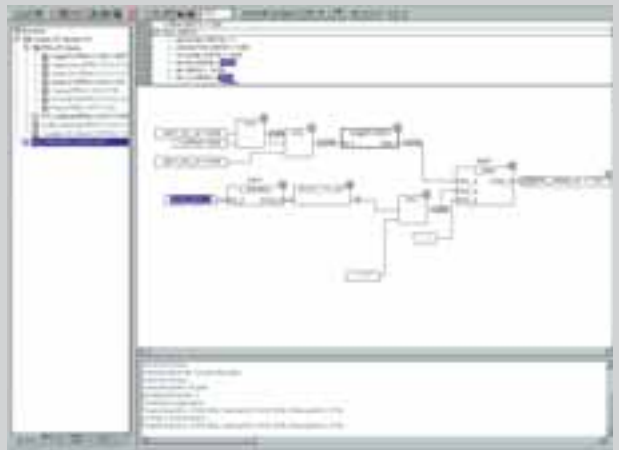

1 Instruction list

2 Ladder diagram

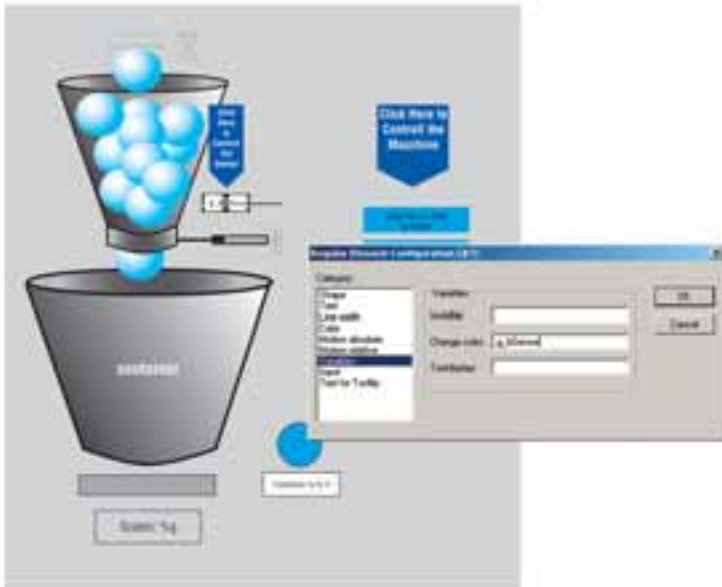*3 Function block language*

4 Structured text

5 Sequential function chart

CFC editor (Continuous Function Chart)

Visualisation

The visualisation integrated in the DDS allows processes to be displayed in the simplest possible way, ensuring that all important information is presented in a clear and understandable way during commissioning.

Card module

The card module is a data backup device which can be used to store IEC 61131-3 programs and parameters and to transfer them to other target systems. The memory card included in the scope of supply can store the data of up to 16 Lenze PLCs.

Global Drive Oscilloscope

Lenze has developed the Global Drive Oscilloscope especially for the Lenze PLCs. Thanks to the software, complex measuring instruments no longer need to be connected or installed. Instead, the PLC itself acts as a comprehensive measuring instrument which can be used to record all the variables which are relevant to the drive.
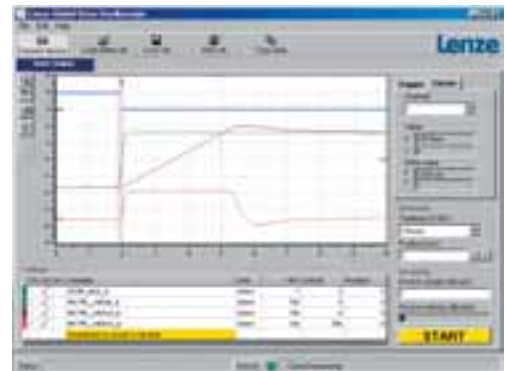
The associated benefits are obvious:
► Precise measurement of drive-specific process variables with eight channels
► No need to install temporary measuring sensors in the system
► User-friendly documentation when fine-tuning control loops
► Easy maintenance and troubleshooting

The Global Drive Oscilloscope is supplied together with the Drive PLC Developer Studio.

Expansion modules | easy to integrate

Extension boards

Alternatively, the extension boards can be inserted into the side of the Drive PLC. In this way the number and type of input/output terminals can be quickly and easily expanded.

Extension board 1
For connection of three-wire sensors and actuation of 24 V brake connections:
▶ 6 digital inputs, potential-free
▶ 4 digital outputs, potential-free, max. 1 A
▶ 2 digital outputs, potential-free, max. 2 A
▶ 5 terminals each for +24 V and GND (for three-wire sensors)

Extension board 2
For cost-effective connection of digital sensors and actuators
Connections:
▶ 14 digital inputs, potential-free
▶ 8 digital outputs, potential-free, max. 1 A

Extension board 3
For fast counting, length measurements and control technology applications
Connections:
▶ 1 encoder input, TTL, HTL, 500 kHz
▶ 8 digital inputs, potential-free
▶ 4 digital outputs, potential-free, max. 1 A
▶ 2 analog inputs ± 10 V, 11-bit

Drive PLC with
Extension board

Function modules

The following function modules can also be inserted through the front panel into the Drive PLC.

Standard I/O PT function module
For additional digital and analog inputs and outputs
Connections:
▶ 5/1 digital inputs/outputs
▶ 1/1 analog input/output

CAN PT function module
For straightforward networking via a second system bus.
▶ 1 digital input

CAN I/O PT function module
For straightforward networking via a second system bus. DIP switches set the default address and baud rate.
▶ 3 digital inputs

Technical data | Drive PLC

Program memory (ROM)	191 kB
PLC data memory (RAM)	25.3 kB (24 kB symb. variables, 1.3 kB absolute flags)
Application data memory (RAM)	2 x 64-kB sectors
EEPROM-buffered memory	800 bytes + 200 bytes (retain)
Task types	1 cyclic task 8 tasks (time or event-controlled)
Processing time for one bit operation	1.0 µs
No. of counters/Timers	freely selectable acc. to IEC 61131-3
Digital inputs	8 (3 of which have interrupt capability)
Extension options	Extension board and decentralised terminals
Digital outputs	4 (max. 1 A, at T_U > 40°C derate by 2.5%/K)
Extension options	Extension board and decentralised terminals
Analog inputs	3 (± 10 V, 11 bits)
Analog outputs	1 (± 10 V or ± 20 mA, 11 bits)
Communication interfaces	Integrated system bus (CAN programming interface)
	Pluggable keypad
	Pluggable card module (for data back-up)
	LECOM (RS232/485/optical fibre) [1]
	PROFIBUS [1]
	INTERBUS [1]
	CANopen [1]
	DeviceNet [1]
	Pluggable FP interface (freely programmable RS232 interface)
Dimensions (H x W x D)/[mm]	120 x 60 x 140
Operational reserve	To IEC 61131-3
Programming software	Drive PLC Developer Studio with IL, LD, FBD, ST, SFC programming languages and CFC Editor Monitoring, visualisation, simulation and debugging
Voltage supply	+ 18 ... 30 V DC
Current (at 24 V DC)	200 mA (without output loads)

[1] Pluggable communication modules

It's good to know | why we are there for you

"Our customers come first. Customer satisfaction is what motivates us. By thinking in terms of how we can add value for our customers we can increase productivity through reliability."

"The world is our marketplace. We develop and manufacture internationally. Wherever you are in the world, we are nearby."

"We will provide you with exactly what you need – perfectly co-ordinated products and solutions with the right functions for your machines and installations. That is what we mean by 'quality'."

"Take advantage of our wealth of expertise. For more than 50 years we have been gathering experience in various fields and implementing it consistently and rigorously in our products, motion functions and pre-prepared solutions for industry."

"We identify with your targets and strive towards a long-term partner-ship which benefits both sides. Our competent support and consultation process means that we can provide you with tailor-made solutions. We are there for you and can offer assistance in all of the key processes."

You can rely on our service. Expert advice is available 24 hours a day, 365 days a year, in more than 30 countries via our international helpline: 008000 24 Hours (008000 2446877).

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