

**L-force**  
*Inverter Drives 8400*



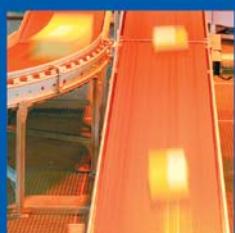
Precisely tailored to your application



**Lenze**

### This is what we stand for.

You want to implement your machine and plant concepts efficiently and easily or optimise existing concepts to reduce costs? Then, Lenze is the partner you are looking for. For more than 60 years, drive and automation systems have been our core competence.



Drive and automation technology set in motion by Lenze – for example in logistics centres, in the textile and printing industry, in the automotive industry or as the driving force behind robots.

# Lenze | about us

We can offer you automation solutions including control, visualisation and drive technology from a single source. Our drive systems will improve the performance of your machines. From project planning to commissioning, we have the know-how, whilst our international sales and service network can provide you with expert help and advice at any time.

Cut your process costs and increase your ability to compete. Let us analyse your drive technology tasks and support you with made-to-measure solutions. We can take an integrated approach to projects thanks to the scalability of our products and the scope of the overall portfolio. We can get the best from your machines and systems.



At your side all over the world – with thorough and professional support from our motivated team.

## L-force - your future is our drive

L-force is our new product philosophy introduced in response to the need to reduce costs, save time and increase efficiency. This generation of drive and automation technology sets innovation, flexibility, usability and system culture in perfect harmony.

## L-force is innovation

In order to offer you more options and (added) value, we are constantly working to improve our solution still further.

## L-force means flexibility

Performance, functional range, software, technical services and after-sales service - you get exactly the combination you need.

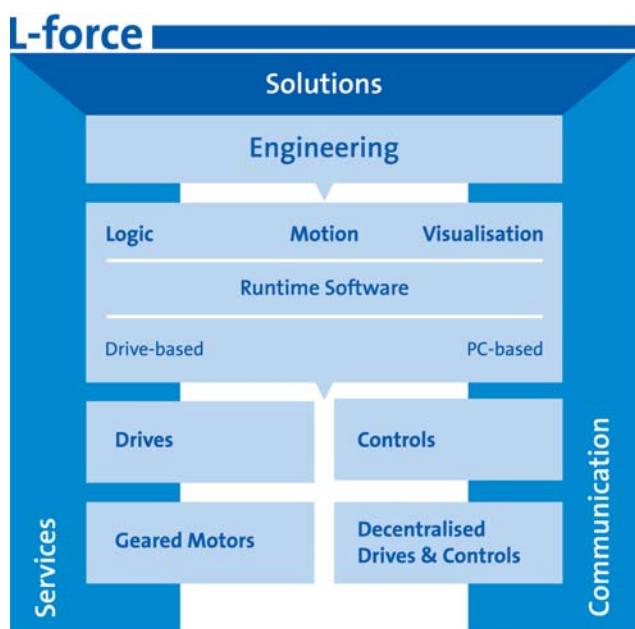
## L-force means usability

Commissioning is made easier thanks to preconfigured solutions and simple, function-based engineering.

## L-force means system

With L-force, everything is perfectly matched.

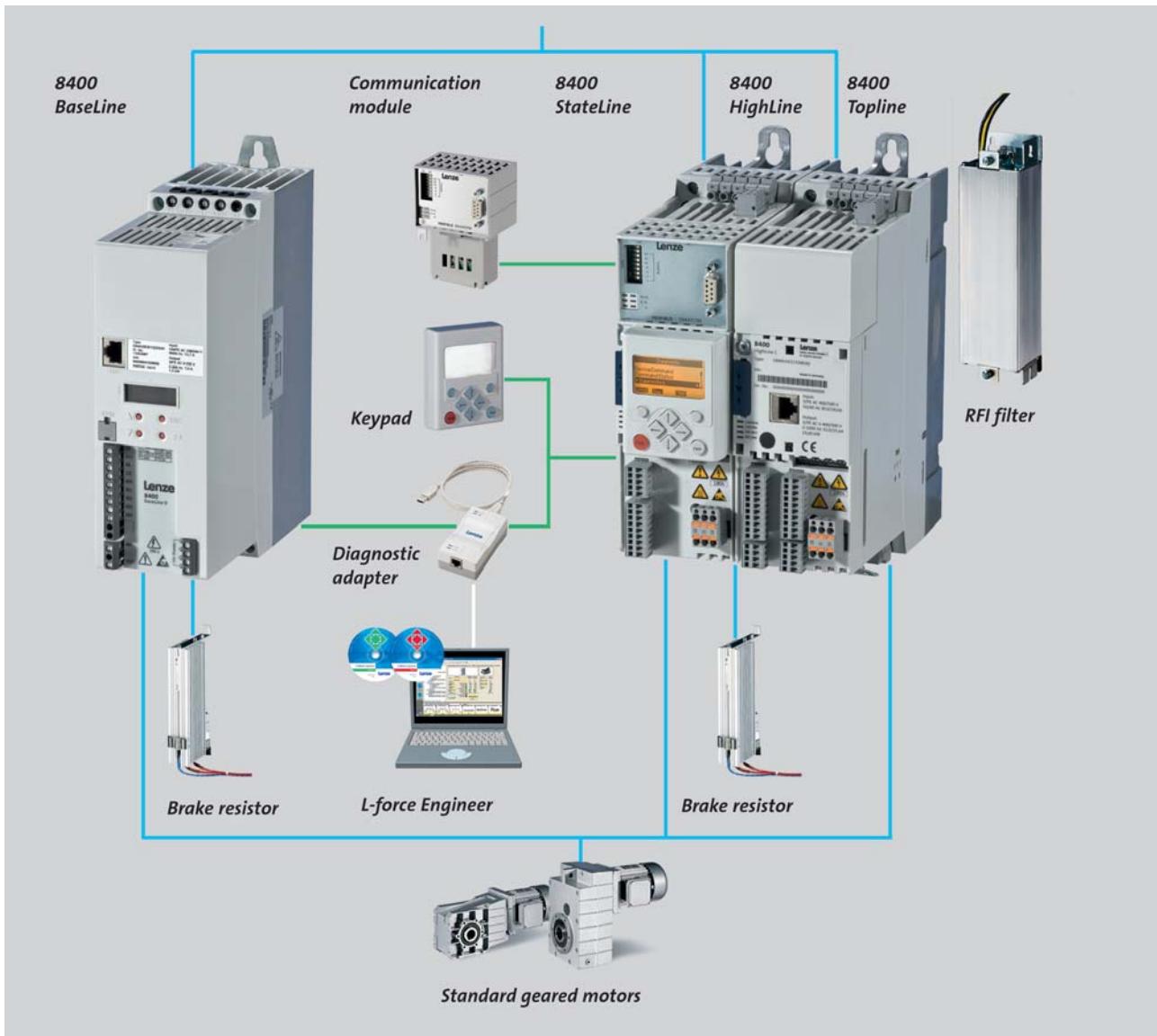
**Let us help you shape your future.**



*L-force is an integrated range of components, solutions, systems and technical services. The overview shows the overall portfolio along with the individual product/solution segments.*

# System overview

8400 Inverter Drives



## Other catalogues

Frequency inverters and accessories for the L-force Inverter Drives 8400 series in the power range from 0.25 to 45 kW can be found in this catalogue. Additional components and system solutions can be found in the following catalogues:

- ▶ smd, 8200 vector, 8200 motec and 9300 vector frequency inverters up to 90 kW can be found in the inverters catalogue
- ▶ Servo Drives 9400 up to 400 kW can be found in the Servo Drives 9400 catalogue.
- ▶ 9300 servo inverter and ECS servo system up to 75 kW are shown in the catalogue Servo Inverters
- ▶ Controllers, industrial PCs, I/O systems and monitor panels are shown in the catalogues Controller-based Automation and PC based Automation.
- ▶ Standard motors are shown in the catalogue Three-phase Motors.
- ▶ Standard geared motors are shown in the catalogue G-motion const.

# Contents | 8400 Inverter Drives



## Product information

Product key	8
List of abbreviations	10
About this catalogue	11
The Rightsizing principle	12
Functions and features	14
Control connections	16
Standards and operating conditions	18



## Inverter

Rated data 230 V	19
Rated data 400 V	22
Dimensions	28
Weights	30
Safety system (STO)	31
Memory module	31
Memory module copier	31



## Accessories

Brake resistors	32
Mains chokes	34
Interference suppression	35
24 V power supply unit	37
Brake switch	37
USB diagnostic adapter	38
Connecting cables for USB diagnostic adapter	38
X400 keypad	39
Diagnosis terminal X400	39
PC system bus adapter	40
Shield connection	40
Setpoint potentiometer	41
Other accessories	41

# Contents | 8400 Inverter Drives



## Modules

Communication module PROFIBUS	42
Communication module EtherCAT	44
Communication module PROFINET	46



## L-force Engineer

General information	48
Functions and features	49
Data access/communication	50
Selection and order data	51

## Lenze world-wide

Lenze world-wide	54
------------------	----



## 8400 Inverter Drives

### Product information

#### Product key

E84AV S C E 751 2 S X x

##### Design

- BD – Baseline D (0.25 ... 3.0 kW)
- BC – BaseLine C (0.25 ... 3.0 kW)<sup>1)</sup>
- SC – StateLine C (0.25 ... 45.0 kW)<sup>1)</sup>
- HC – HighLine C (0.25 ... 45.0 kW)<sup>1)</sup>
- TC – TopLine C (0.55 ... 45.0 kW)<sup>1)</sup>

##### Mounting type

- E – Built-in unit
- D – Push-through technique (0.25 ... 15.0 kW)<sup>2)</sup>
- C – Cold plate technology (0.25 ... 15.0 kW)<sup>2)</sup>

##### Power

251 – 0.25 kW	552 – 5.5 kW
371 – 0.37 kW	752 – 7.5 kW
551 – 0.55 kW	113 – 11.0 kW
751 – 0.75 kW	153 – 15.0 kW
112 – 1.1 kW	183 – 18.5 kW
152 – 1.5 kW	223 – 22.0 kW
222 – 2.2 kW	303 – 30.0 kW
302 – 3.0 kW	373 – 37.0 kW
402 – 4.0 kW	453 – 45.0 kW

##### Voltage class

- 2 – 230/240 V, 1/N/PE AC (0.25 ... 2.2 kW)
- 4 – 400/500 V, 3/PE AC (0.37 ... 45.0 kW)

##### Ambient conditions

- S – Standard (0.25 ... 15.0 kW)
- V – Harsh environment (coated printed circuit boards, 0.25 ... 45.0 kW)<sup>2)</sup>

##### Safety engineering

- X – Without safety engineering
- B – With safety engineering (STO) <sup>2)</sup>

<sup>1)</sup> CANopen on board

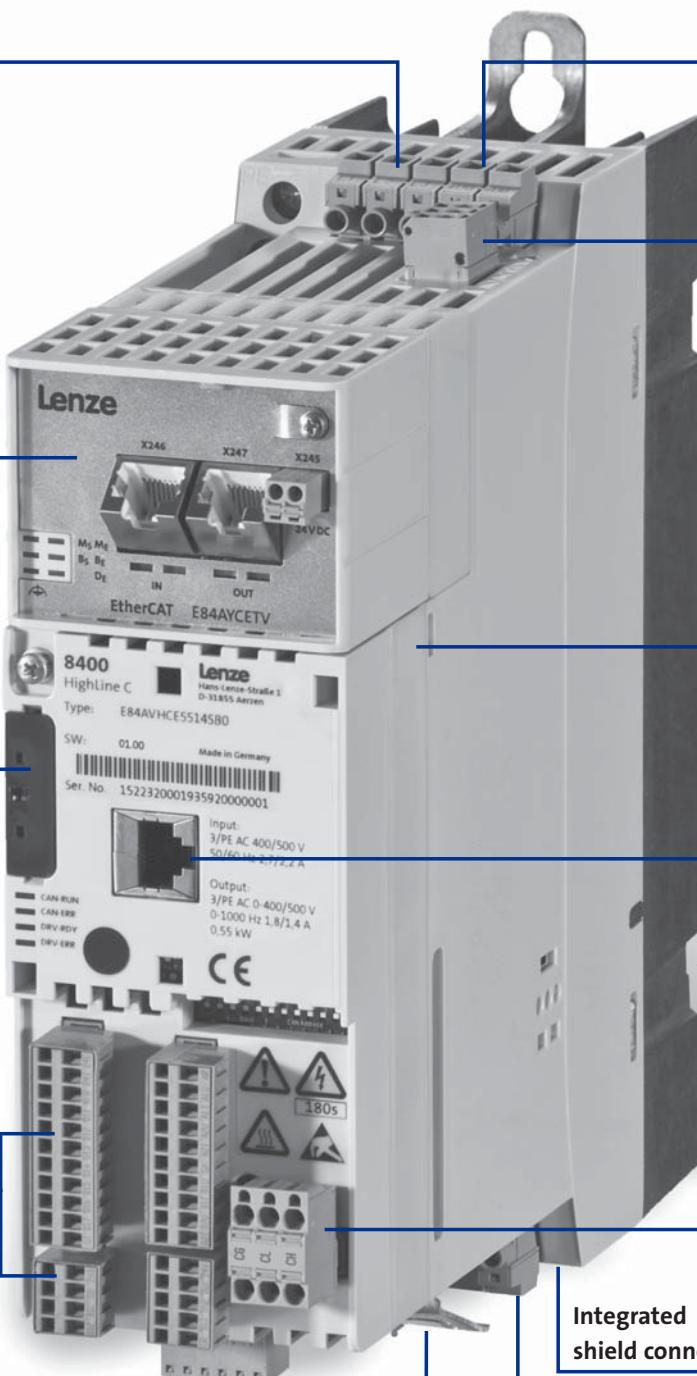
<sup>2)</sup> 8400 StateLine C, HighLine C and TopLine C





## Equipment

**Pluggable mains connection\***



**Memory module**

- ▶ pluggable
- ▶ contains all drive data

**Pluggable control terminals\***

with spring contacts

\* for 8400 StateLine, HighLine and TopLine



# 8400 Inverter Drives

## Product information

### List of abbreviations

<b>b</b>	[mm]	Dimensions		
<b>C<sub>th</sub></b>	[kWs]	Thermal capacity		
<b>f<sub>ch</sub></b>	[kHz]	Rated switching frequency		
<b>h</b>	[mm]	Dimensions		
<b>I<sub>N, out</sub></b>	[A]	Rated output current		
<b>I<sub>N, AC</sub></b>	[A]	Rated mains current		
<b>m</b>	[kg]	Mass		
<b>n<sub>max</sub></b>	[r/min]	Max. speed		
<b>P</b>	[kW]	Typical motor power		
<b>P<sub>V</sub></b>	[kW]	Power loss		
<b>P<sub>N</sub></b>	[kW]	Rated power		
<b>R<sub>N</sub></b>	[Ω]	Rated resistance		
<b>t</b>	[mm]	Dimensions		
<b>U<sub>AC</sub></b>	[V]	Mains voltage		
<b>U<sub>DC</sub></b>	[V]	DC supply		
<b>U<sub>N, AC</sub></b>	[V]	Rated voltage		
<b>U<sub>out</sub></b>	[V]	Max. output voltage		
<b>ASM</b>		Asynchronous motor		
<b>DIAG</b>		Slot for diagnostic adapter		
<b>DIN</b>		Deutsches Institut für Normung e.V.		
<b>EN</b>		European standard		
<b>EN 60529</b>		Degrees of protection provided by enclosures (IP code)		
<b>EN 60721-3</b>		Classification of environmental conditions; Part 3: Classes of environmental parameters and their limit values		
<b>EN 61800-3</b>		Electrical variable speed drives Part 3: EMC requirements including special test methods		
<b>IEC</b>		International Electrotechnical Commission		
<b>IEC 61508</b>		Functional safety of electrical/electronic/programmable electronic safety-related systems		
<b>IM</b>		International Mounting Code		
<b>IP</b>		International Protection Code		
<b>MCI</b>		Slot for communication module (module communication interface)		
<b>NEMA</b>		National Electrical Manufacturers Association		
<b>UL</b>		Underwriters Laboratory Listed Product		
<b>UR</b>		Underwriters Laboratory Recognized Product		
<b>VDE</b>		Verband deutscher Elektrotechniker (Association of German Electrical Engineers)		



## About this catalogue

This catalogue contains all the components that make up the Inverter Drives 8400 product range and is a document that you can use to select and order your products. You can find comprehensive project planning information in the Operating Instructions and System Manuals for the relevant products. The same product range is also covered in the DSC electronic catalogue, which is available on CD or online at:

[www.lenze.com/dsc](http://www.lenze.com/dsc)

You can also download additional information (e.g. rated data) for certain components from the Internet. These components are marked with the following arrow symbol and a corresponding identifier printed in bold.

→ Rated data and dimension sheets

**DS\_GD\_8400\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

Just enter this identifier (e.g. **DS\_8400\_0001**) as the search term and you will get the information as a PDF file.

## Inverters and accessories

All components of the 8400 Inverter Drive range can be selected easily and quickly via a uniform product key.

For improved clarity, different drive models are represented by a wildcard.

- ▶  is used, for example, to group the various versions, e.g. E84AV□□E7512SX0, with □ acting as a wildcard for BC (BaseLine C), BD (BaseLine D), SC (StateLine C), HC (High-Line C) or TC (TopLine C).



## 8400 Inverter Drives

### Product information

#### The Rightsizing principle

We call it Rightsizing: The Inverter Drives 8400 have been designed for consistent process optimisation – throughout all phases of the value-added chain. They reduce your outlay from selection onwards, via project planning, production and commissioning and beyond to service.

##### Rightsized for a diverse range of applications

Do you want to control or regulate motors, or achieve positioning with or without feedback? Then select the inverter that precisely meets your requirements from the Inverter Drives 8400 scaled range. What's more, that is all from a power range of 0.25 kW to 45 kW.

##### Rightsized for increased productivity

The functionality and drive behaviour of the 8400 series – BaseLine, StateLine, HighLine and TopLine – develop consistently from one to the next which makes your selection process simple. The diagnostics connections and tools, operation and parameter settings are all identical across each design. The strengths of the 8400 series really prove their superiority when you use different models in your application.

##### Rightsized for the future

Upgrades at a later date are no problem. If the features of a StateLine no longer suffice, you can easily replace it with a HighLine – without having to redesign your control cabinet. Combined with environmentally-friendly production, compliant with ISO 14001 and RoHS – this makes the series future-proof.

##### Rightsized for quick start-up

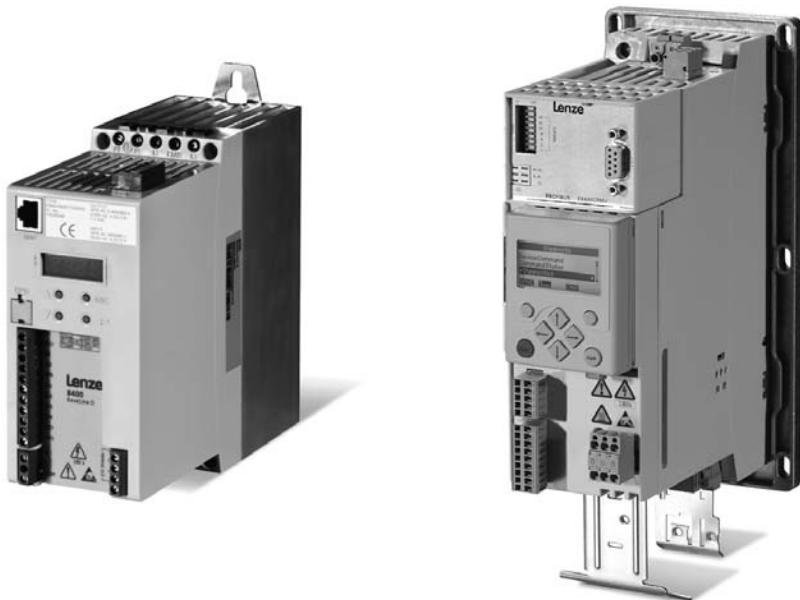
The inverters are supplied complete with integrated shield connections. This reduces the time required to prepare for and carry out assembly work. Simply select predefined applications to tailor the frequency inverter to meet the requirements of your application. In the simplest case scenario, all you need to do is set two parameters: "Application" and "Setpoint source".

##### Rightsized for optimum operation

When developing human machine interfaces we never lose sight of the importance of the human element. Whether you are working with a keypad or on a PC, you can rely on the support of intuitive user menus.

##### Rightsized for rapid service

Diagnostics and parameter setting by means of remote maintenance mean that service can be provided quickly and cost-effectively, wherever you are in the world. Thanks to the memory module, integrated shield connections and pluggable terminals, drives can be replaced quickly, thereby reducing machine downtimes.



8400 BaseLine, StateLine (here, with Cold Plate technology), HighLine and TopLine



### Four versions, clearly scaled

#### 8400 BaseLine - for constant motion

The BaseLine version is the entry-level model in terms of functionality and drive behaviour. Featuring an integrated keypad and everything you would expect from a modern frequency inverter suitable for universal use, the 8400 BaseLine is the ideal solution for applications such as conveyor drives, pumps, fans or ventilators.

#### 8400 StateLine - for controlled motion

The 8400 StateLine has been designed specifically for drives with or without speed feedback and is used wherever networking via bus systems is required. Furthermore, integrated brake handling contributes to a significant reduction in wear on service brakes. Even very frequent mains switching is unable to ruffle the feathers of the StateLine, as the input circuit is protected against overload.

The 8400 StateLine takes over applications whose complex requirements go beyond the capabilities of the BaseLine. It is also ideal for applications such as palletizers, extruders, filling systems or travelling/variable speed drives.

#### 8400 HighLine - for positioning tasks

In addition to the possibilities of the 8400 StateLine, the 8400 HighLine has an integrated point-to-point positioning system. This makes it possible to store, among other things, 15 selectable position destinations, including the associated travel profile, e.g. acceleration, in the inverter. The higher-level control systems selects these position sets and stipulates the sequence of events. The incremental encoder signal is evaluated via two digital inputs, although, in many applications, feedback can be dispensed with.

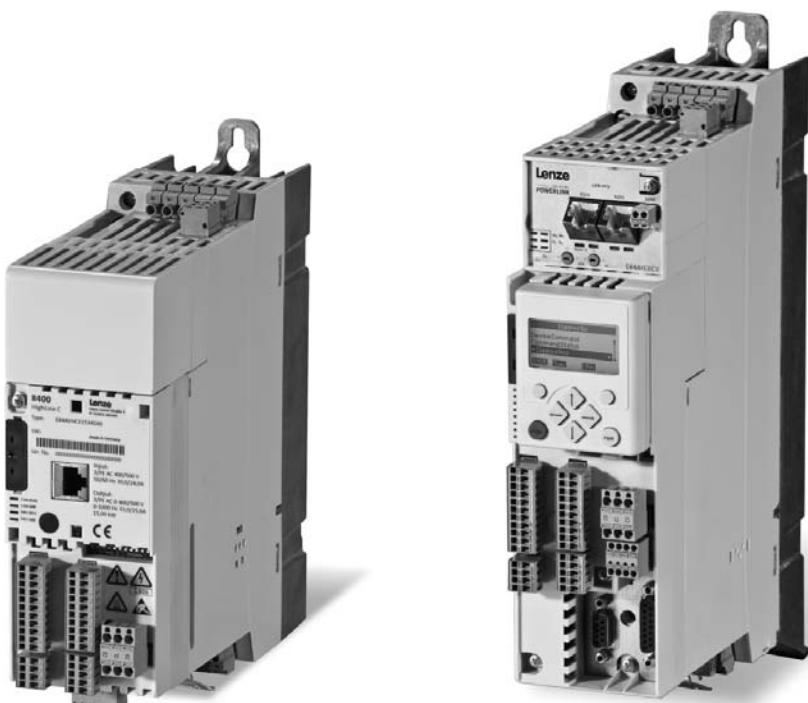
The 8400 HighLine is recommended for applications such as rotary indexing tables, sliding doors, or positioning tasks in warehouse systems.

#### 8400 TopLine - for servo applications

8400 TopLine – the inverter with servo qualities within the 8400 series. Equipped with everything needed for a high dynamic response and precision in complex applications. In addition to a resolver input, for example, there is also a multiple encoder input that is a very useful addition to the spectrum of usable feedback systems. In addition, not only asynchronous motors but also the more dynamic synchronous motors are supported.

Profit from the precisely tailored, cost-optimised Lenze drive packages consisting of prepared system cables, motors and gearboxes, feedback units, brakes and fans, as well, of course, the 8400 TopLine.

The 8400 TopLine is particularly recommended for pick-and-place applications.





## 8400 Inverter Drives

### Product information

#### Functions and features

Mode	8400 BaseLine	8400 StateLine
<b>Control types, motor control</b>	V/f control without encoder (linear or square-law) Sensorless vector control (torque/speed)	V/f control without encoder (linear or square-law) Sensorless vector control (torque/speed) V/f control with encoder
<b>Basic functions</b>	Application-oriented commissioning (predefined application) Freely assignable user menu Data logger DC brake function Flying restart circuit S-shaped ramps for smooth acceleration Max. output frequency 300 Hz PID controller 3 fixed frequencies 180 % overload current (3 s)	Application-oriented commissioning (predefined application) Freely assignable user menu Data logger DC brake function Flying restart circuit S-shaped ramps for smooth acceleration Max. output frequency 1000Hz PID controller 15 fixed frequencies 200% overload current (3 s) "VFC eco" energy-saving function <sup>1)</sup> Parameter change-over Masking frequencies Switch-off positioning (without encoder) Braking operation without brake resistor Brake management for brake control with low rate of wear Inversion of motor phase sequence Logical functions, comparator, counter, arithmetic function Function block interconnection for input and output signals
<b>Monitoring and protective measures</b>	Short circuit Earth fault Overvoltage Motor stalling $I^2 \times t$ monitoring	Short circuit Earth fault Overvoltage Motor stalling $I^2 \times t$ monitoring Motor phase failure Mains phase failure Protection against restart for cyclic mains switching Motor overtemperature (input for PTC or thermal contact)
<b>Diagnostics</b>		
Diagnostic interface	Integrated For USB diagnostic adapter in PC connection	Integrated For USB diagnostic adapter with PC connection or X400 keypad
Status display	4 LEDs	4 LEDs
<b>Braking operation</b>		
Brake chopper	Integrated (400 V types)	Integrated
Brake resistor	External (400 V types)	External

<sup>1)</sup> In preparation



## Functions and features

Mode	8400 HighLine	8400 TopLine
<b>Control types, motor control</b>	V/f control without encoder (linear or square-law) Sensorless vector control (torque/speed) V/f control with encoder Servo control (asynchronous motor)	V/f control without encoder (linear or square-law) Sensorless vector control (torque/speed) V/f control with encoder Servo control (asynchronous motor) Servo control (synchronous motor)
<b>Basic functions</b>	Application-oriented commissioning (predefined application) Freely assignable user menu Data logger DC brake function Flying restart circuit S-shaped ramps for smooth acceleration Max. output frequency 1000Hz PID controller 15 fixed frequencies 200% overload current (3 s) "VFC eco" energy-saving function Parameter change-over Masking frequencies Switch-off positioning (without encoder) Braking operation without brake resistor Brake management for brake control with low rate of wear Inversion of motor phase sequence Logical functions, comparator, counter, arithmetic function Function block interconnection for input and output signals Free function block interconnection Point-to-point positioning	Application-oriented commissioning (predefined application) Freely assignable user menu Data logger DC brake function Flying restart circuit S-shaped ramps for smooth acceleration Max. output frequency 1000Hz PID controller 15 fixed frequencies 200% overload current (3 s) "VFC eco" energy-saving function Parameter change-over Masking frequencies Switch-off positioning (without encoder) Braking operation without brake resistor Brake management for brake control with low rate of wear Inversion of motor phase sequence Logical functions, comparator, counter, arithmetic function Function block interconnection for input and output signals Free function block interconnection Point-to-point positioning
<b>Monitoring and protective measures</b>	Short circuit Earth fault Overvoltage Motor stalling $I^2 \times t$ monitoring Motor phase failure Mains phase failure Protection against restart for cyclic mains switching Motor overtemperature (input for PTC or thermal contact)	Short circuit Earth fault Overvoltage Motor stalling $I^2 \times t$ monitoring Motor phase failure Mains phase failure Protection against restart for cyclic mains switching Motor overtemperature (input for PTC or thermal contact, KTY evaluation)
<b>Diagnostics</b>		
Diagnostic interface	Integrated For USB diagnostic adapter with PC connection or X400 keypad	Integrated For USB diagnostic adapter with PC connection or X400 keypad
Status display	4 LEDs	6 LEDs
<b>Braking operation</b>		
Brake chopper	Integrated	Integrated
Brake resistor	External	External



## 8400 Inverter Drives

### Product information

#### Control connections

Mode	8400 BaseLine	8400 StateLine
<b>Analog inputs</b>		
Number	1 Switchable: voltage or current input	1 Optional: voltage or current input
Resolution	10 bits	10 bits
Value range	0 ... 10V, 0/4 ... 20mA	0 ... +/- 10V, 0/4 ... 20 mA
<b>Analog outputs</b>		
Number		1
Resolution		10 bits
Value range		0 ... 10V
<b>Digital inputs</b>		
Number	5	5
Switching level	PLC (IEC 61131-2)	PLC (IEC 61131-2)
Max. input current	11mA	11mA
Function		
<b>Digital outputs</b>		
Number	1	1
Switching level	PLC (IEC 61131-2)	PLC (IEC 61131-2)
Max. output current	50mA	50mA
<b>Relay</b>		
Number	1	1
Contact	NO contact	Changeover contact
AC connection	250V, 3A	250V, 3A
DC connection	24V, 2A ... 240V, 0.16A	24V, 2A ... 240V, 0.16A
<b>External DC supply<sup>1)</sup></b>		
Rated voltage		24 V
<b>Interfaces</b>		
CANopen	Integrated (BaseLine C) Functional insulation Max. baud rate 500 kbps	Integrated Functional insulation Max. baud rate 500 kbps
Extensions		Optional Communication module
Safety engineering		Optional "Safe Torque Off (STO)"
<b>Drive interface</b>		
Encoder input		Via 2 digital inputs, HTL, 2-track 10 kHz Can also be used as a frequency input
Resolver input		

<sup>1)</sup> For mains-independent control electronics supply

→ Circuit diagrams

**DS\_SP\_8400\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



## Control connections

Mode	8400 HighLine	8400 TopLine
<b>Analog inputs</b>		
Number	2 Optional: voltage or current input	2 Optional: voltage or current input
Resolution	10 bits	10 bits + sign
Value range	0 ... +/- 10V, 0/4 ... 20 mA	0 ... +/- 10V, 0/4 ... 20 mA
<b>Analog outputs</b>		
Number	2 Optional: voltage or current output	2 Optional: voltage or current output
Resolution	10 bits	10 bits
Value range	0 ... 10V, 0/4 ... 20mA	0 ... 10V, 0/4 ... 20mA
<b>Digital inputs</b>		
Number	8	8
Switching level	PLC (IEC 61131-2)	PLC (IEC 61131-2)
Max. input current	11 mA	11 mA
Function	2 inputs, can optionally be used as a frequency input (10 kHz, 2-track)	2 inputs, can optionally be used as a frequency input (10 kHz, 2-track)
<b>Digital outputs</b>		
Number	4	4
Switching level	PLC (IEC 61131-2)	PLC (IEC 61131-2)
Max. output current	1 x 2.5 A, (basic insulation, with spark suppressor, e.g. for 24 V service brake) 3 x 50 mA	1 x 2.5 A, (basic insulation, with spark suppressor, e.g. for 24 V service brake) 3 x 50 mA
<b>Relay</b>		
Number	1	1
Contact	Changeover contact	Changeover contact
AC connection	250V, 3A	250V, 3A
DC connection	24V, 2A ... 240V, 0.16A	24V, 2A ... 240V, 0.16A
<b>External DC supply</b>		
Rated voltage	24 V	24 V
<b>Interfaces</b>		
CANopen	Integrated Functional insulation Max. baud rate 1000 kbps	Integrated Functional insulation Max. baud rate 1000 kbps
Extensions	Optional Communication module	Optional Communication module
Safety engineering	Optional "Safe Torque Off (STO)"	Optional "Safe Torque Off (STO)"
<b>Drive interface</b>		
Encoder input	Via 2 digital inputs, HTL, 2-track 100 kHz, Can also be used as a frequency input	Via 2 digital inputs, HTL, 2-track 100 kHz, Can also be used as a frequency input Sub-D, 15-pin Multiple encoder input for: TTL incremental encoder, SSI absolute value encoder (single-turn/multi-turn) Sub-D, 9-pin
Resolver input		

<sup>1)</sup> For mains-independent control electronics supply

→ Circuit diagrams

**DS\_SP\_8400\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



## 8400 Inverter Drives

### Product information

#### Standards and operating conditions

Mode Product			8400 BaseLine	8400 StateLine	8400 HighLine	8400 TopLine
<b>Conformity</b> Type				CE: Low-Voltage Directive 2006/95/EC		
<b>Approval</b> UL 508C <sup>1)</sup>			Power Conversion Equipment (File-No. E170350)	Power Conversion Equipment (file no. E132659)		
<b>Certification</b>				GOST-R		
<b>Enclosure</b> EN 60529 <sup>2)</sup>				IP20		
NEMA 250				Type 1		
<b>Climatic conditions</b> Storage (EN 60721-3-1)				1K3 (temperature: -25 °C ... +60 °C)		
Transport (EN 60721-3-2)				2K3 (temperature: -25 °C ... +70 °C)		
Operation (EN 60721-3-3)				3K3 (temperature: -10°C ... +55°C)		
Power reduction above 45 °C				2.5% / K		
<b>Site altitude</b> Amsl	H <sub>max</sub>	[m] [%/1000 m]		4000		
power reduction above 1000 m				5.00		
<b>Vibration resistance</b> Transport (EN 60721-3-2)				2M2		
Operation (EN 61800-5-1)				10 Hz ≤ f ≤ 57 Hz: ± 0.075 mm amplitude, 57 Hz ≤ f ≤ 150 Hz: 1.0 g		
Operation (Germanischer Lloyd)				5 Hz ≤ f ≤ 13.2 Hz ± 1 mm amplitude, 13.2 Hz ≤ f ≤ 100 Hz: 0.7 g		

<sup>1)</sup> In preparation for 30, 37 and 45 kW

<sup>2)</sup> Mounted and ready-to-use

Mode Product	8400 BaseLine	8400 StateLine	8400 HighLine	8400 TopLine
<b>Supply form</b>	Systems with earthed star point (TN and TT systems)	Systems with earthed star point (TN and TT systems)	Systems with high-resistance or isolated star point (IT systems)	
<b>Noise emission</b> EN 61800-3	Integrated RFI suppression: cable-guided, category C2 up to 25 m shielded motor cable <sup>3)</sup>			
<b>Insulation resistance</b> EN 61800-5-1		Overvoltage category III Above 2000 m amsl overvoltage category II		
<b>Degree of pollution</b> EN 61800-5-1	2			
<b>Protective insulation of control circuits</b> EN 61800-5-1	Safe mains isolation: double/reinforced insulation			

<sup>3)</sup> Depending on the drive, shielded motor cable up to 50 m is possible



## Rated data

- The data is valid for operation at 230 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

**DS\_GD\_8400\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

<b>Typical motor power</b> 4-pole asynchronous motor	<b>P</b>	[kW]	<b>0.25</b>
<b>Product key<sup>1)</sup></b> Inverter			<b>E84AV□□□2512□□0</b>
<b>Mains voltage range</b>	<b>U<sub>AC</sub></b>	[V]	1/PE AC 180 V-0 % ... 264 V+0 %, 45 Hz-0 % ... 65 Hz+0 %
<b>Rated output current<sup>2)</sup></b>	<b>I<sub>N, out</sub></b>	[A]	1.70
<b>Max. cable length<sup>3)</sup></b> Unshielded motor cable	<b>I<sub>max</sub></b>	[m]	100
Shielded motor cable	<b>I<sub>max</sub></b>	[m]	50

<sup>1)</sup> → 8 - See product key

<sup>2)</sup> Overload: 150% \* I<sub>N, out</sub> for 60 s, 200% (BaseLine 180%) \* I<sub>N, out</sub> for 3 s

<sup>3)</sup> Technically possible cable lengths, irrespective of EMC requirements

## Dimensions

### Dimensions - BaseLine

<b>Dimensions</b>				
Height	<b>h</b>	[mm]	165	165
Width	<b>b</b>	[mm]	70	70
Depth <sup>4)</sup>	<b>t</b>	[mm]	144	144

<sup>4)</sup> Depth of 8400 BaseLine with CANopen (BaseLine C), additional 8 mm

### Dimensions - built-in unit StateLine, HighLine

<b>Dimensions</b>				
Height	<b>h</b>	[mm]	165	165
Width	<b>b</b>	[mm]	70	70
Depth <sup>5)</sup>	<b>t</b>	[mm]	199	199

<sup>5)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering



# 8400 Inverter Drives

## Inverter

### Rated data

- The data is valid for operation at 230 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

**DS\_GD\_8400\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

			
<b>Typical motor power</b> 4-pole asynchronous motor	<b>P</b>	[kW]	<b>0.55</b>
<b>Product key<sup>1)</sup></b> Inverter			<b>E84AV□□□5512□□0</b>
<b>Mains voltage range</b>	<b>U<sub>AC</sub></b>	[V]	1/PE AC 180 V-0 % ... 264 V+0 %, 45 Hz-0 % ... 65 Hz+0 %
<b>Rated output current<sup>2)</sup></b>	<b>I<sub>N, out</sub></b>	[A]	3.00
<b>Max. cable length<sup>3)</sup></b> Unshielded motor cable	<b>I<sub>max</sub></b>	[m]	100
Shielded motor cable	<b>I<sub>max</sub></b>	[m]	50

<sup>1)</sup> →  8 - See product key

<sup>2)</sup> Overload: 150% \* I<sub>N, out</sub> for 60 s, 200% (BaseLine 180%) \* I<sub>N, out</sub> for 3 s

<sup>3)</sup> Technically possible cable lengths, irrespective of EMC requirements

### Dimensions

#### Dimensions - BaseLine

<b>Dimensions</b>					
Height	<b>h</b>	[mm]	165		165
Width	<b>b</b>	[mm]	70		70
Depth <sup>4)</sup>	<b>t</b>	[mm]	162		162

<sup>4)</sup> Depth of 8400 BaseLine with CANopen (BaseLine C), additional 8 mm

#### Dimensions - built-in unit StateLine, HighLine

<b>Dimensions</b>					
Height	<b>h</b>	[mm]	215		215
Width	<b>b</b>	[mm]	70		70
Depth <sup>5)</sup>	<b>t</b>	[mm]	199		199

<sup>5)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering

#### Dimensions, TopLine built-in unit

<b>Dimensions</b>					
Height	<b>h</b>	[mm]	215		215
Width	<b>b</b>	[mm]	70		70
Depth <sup>5)</sup>	<b>t</b>	[mm]	214		214



## Rated data

- The data is valid for operation at 230 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

**DS\_GD\_8400\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

<b>Typical motor power</b> 4-pole asynchronous motor	<b>P</b>	[kW]	<b>1.10</b> <b>1.50</b> <b>2.20</b>
<b>Product key<sup>1)</sup></b> Inverter			E84AV□□□1122□□0    E84AV□□□1522□□0    E84AV□□□2222□□0
<b>Mains voltage range</b>	<b>U<sub>AC</sub></b>	[V]	1/PE AC 180 V-0 % ... 264 V+0 %, 45 Hz-0 % ... 65 Hz+0 %
<b>Rated output current<sup>2)</sup></b>	<b>I<sub>N, out</sub></b>	[A]	5.50      7.00      9.50
<b>Max. cable length<sup>3)</sup></b> Unshielded motor cable	<b>I<sub>max</sub></b>	[m]	100
Shielded motor cable	<b>I<sub>max</sub></b>	[m]	50

<sup>1)</sup> → 8 - See product key

<sup>2)</sup> Overload: 150% \* I<sub>N, out</sub> for 60 s, 200% (BaseLine 180%) \* I<sub>N, out</sub> for 3 s

<sup>3)</sup> Technically possible cable lengths, irrespective of EMC requirements

## Dimensions

### Dimensions - BaseLine

<b>Dimensions</b>		<b>h</b>	[mm]	165	215	215
Height		<b>b</b>	[mm]	70	70	70
Width		<b>t</b>	[mm]	162	162	162

<sup>4)</sup> Depth of 8400 BaseLine with CANopen (BaseLine C), additional 8 mm

### Dimensions - built-in unit StateLine, HighLine

<b>Dimensions</b>		<b>h</b>	[mm]	270	270	270
Height		<b>b</b>	[mm]	70	70	70
Width		<b>t</b>	[mm]	199	199	199

<sup>5)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering

### Dimensions, TopLine built-in unit

<b>Dimensions</b>		<b>h</b>	[mm]	270	270	270
Height		<b>b</b>	[mm]	70	70	70
Width		<b>t</b>	[mm]	214	214	214



# 8400 Inverter Drives

## Inverter

### Rated data

- The data is valid for operation at 400 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

DS\_GD\_8400\_0002

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



Typical motor power 4-pole asynchronous motor	P	[kW]	0.37	0.55	0.75
<b>Product key<sup>1)</sup></b>			E84AV□□□3714□□0	E84AV□□□5514□□0	E84AV□□□7514□□0
<b>Mains voltage range</b>	U <sub>AC</sub>	[V]	3/PE AC 320 V-0 % ... 550 V+0 %, 45 Hz-0 % ... 65 Hz+0 %		
<b>DC supply<sup>3)</sup></b>	U <sub>DC</sub>	[V]		DC 455 V -0 % ... 775 V +0 %	
<b>Rated output current<sup>2)</sup></b>	I <sub>N, out</sub>	[A]	1.30	1.80	2.40
<b>Max. cable length<sup>4)</sup></b>	I <sub>max</sub>	[m]		100	
Unshielded motor cable	I <sub>max</sub>	[m]		50	

<sup>1)</sup> → 8 - See product key

<sup>2)</sup> Overload: 150% \* I<sub>N, out</sub> for 60 s, 200% (BaseLine 180%) \* I<sub>N, out</sub> for 3 s

<sup>3)</sup> 8400 BaseLine only with connector (order designation: EWS0074/M)

<sup>4)</sup> Technically possible cable lengths, irrespective of EMC requirements

### Dimensions

#### Dimensions - BaseLine

Dimensions	h	[mm]	165	165	165
Height	h	[mm]	165	165	165
Width	b	[mm]	70	70	70
Depth <sup>5)</sup>	t	[mm]	165	165	165

<sup>5)</sup> Depth of 8400 BaseLine with CANopen (BaseLine C), additional 8 mm

#### Dimensions - built-in unit StateLine, HighLine

Dimensions	h	[mm]	215	215	215
Height	h	[mm]	215	215	215
Width	b	[mm]	70	70	70
Depth <sup>6)</sup>	t	[mm]	199	199	199

<sup>6)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering

#### Dimensions, TopLine built-in unit

Dimensions	h	[mm]	215	215	215
Height	h	[mm]	215	215	215
Width	b	[mm]	70	70	70
Depth <sup>6)</sup>	t	[mm]	214	214	214



## Rated data

- The data is valid for operation at 400 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

**DS\_GD\_8400\_0002**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

<b>Typical motor power</b> 4-pole asynchronous motor	<b>P</b>	[kW]	1.10      1.50      2.20      3.00
<b>Product key</b> <sup>1)</sup>			E84AV□□□1124□□0    E84AV□□□1524□□0    E84AV□□□2224□□0    E84AVB□□3024□□0 E84AV□□□3024□□S
<b>Mains voltage range</b>	<b>U<sub>AC</sub></b>	[V]	3/PE AC 320 V-0 % ... 550 V+0 %, 45 Hz-0 % ... 65 Hz+0 %
<b>DC supply</b> <sup>3)</sup>	<b>U<sub>DC</sub></b>	[V]	DC 455 V -0 % ... 775 V +0 %
<b>Rated output current</b> <sup>2)</sup>	<b>I<sub>N, out</sub></b>	[A]	3.20      3.90      5.90      7.30
<b>Max. cable length</b> <sup>4)</sup> Unshielded motor cable	<b>I<sub>max</sub></b>	[m]	100
Shielded motor cable	<b>I<sub>max</sub></b>	[m]	50

1) → 8 - See product key

2) Overload: 150% \* I<sub>N, out</sub> for 60 s, 200% (BaseLine 180%) \* I<sub>N, out</sub> for 3 s

3) 8400 BaseLine only with connector (order designation: EWS0074/M)

4) Technically possible cable lengths, irrespective of EMC requirements

## Dimensions

### Dimensions - BaseLine

<b>Dimensions</b>		<b>h</b> [mm]	165	165	215	215
Height	Width					
Width	<b>b</b> [mm]	70	70	70	70	70
Depth <sup>5)</sup>	<b>t</b> [mm]	162	162	162	162	162

5) Depth of 8400 BaseLine with CANopen (BaseLine C), additional 8 mm

### Dimensions - built-in unit StateLine, HighLine

<b>Dimensions</b>		<b>h</b> [mm]	270	270	270	270
Height	Width					
Width	<b>b</b> [mm]	70	70	70	70	70
Depth <sup>6)</sup>	<b>t</b> [mm]	199	199	199	199	199

6) 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering

### Dimensions, TopLine built-in unit

<b>Dimensions</b>		<b>h</b> [mm]	270	270	270	270
Height	Width					
Width	<b>b</b> [mm]	70	70	70	70	70
Depth <sup>6)</sup>	<b>t</b> [mm]	214	214	214	214	214



## 8400 Inverter Drives

### Inverter

#### Rated data

- The data is valid for operation at 400 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

**DS\_GD\_8400\_0002**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



<b>Typical motor power</b> 4-pole asynchronous motor	<b>P</b>	[kW]	4.00	5.50
<b>Product key</b> <sup>1)</sup>			E84AV□□□4024□□0	E84AV□□□5524□□0
<b>Mains voltage range</b>	<b>U<sub>AC</sub></b>	[V]	3/PE AC 320 V-0 % ... 550 V+0 %, 45 Hz-0 % ... 65 Hz+0 %	
<b>DC supply</b>	<b>U<sub>DC</sub></b>	[V]	DC 455 V -0 % ... 775 V +0 %	
<b>Rated output current</b> <sup>2)</sup>	<b>I<sub>N, out</sub></b>	[A]	9.50	13.0
<b>Max. cable length</b> <sup>3)</sup> Unshielded motor cable	<b>I<sub>max</sub></b>	[m]	100	
Shielded motor cable	<b>I<sub>max</sub></b>	[m]	50	

<sup>1)</sup> → 8 - See product key

<sup>2)</sup> Overload: 150% \* I<sub>N, out</sub> for 60 s, 200% (BaseLine 180%) \* I<sub>N, out</sub> for 3 s

<sup>3)</sup> Technically possible cable lengths, irrespective of EMC requirements

#### Dimensions

##### Dimensions - built-in unit StateLine, HighLine

<b>Dimensions</b>	<b>h</b>	[mm]		
Height	<b>h</b>	[mm]	270	270
Width	<b>b</b>	[mm]	140	140
Depth <sup>4)</sup>	<b>t</b>	[mm]	199	199

<sup>4)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering

##### Dimensions, TopLine built-in unit

<b>Dimensions</b>	<b>h</b>	[mm]		
Height	<b>h</b>	[mm]	270	270
Width	<b>b</b>	[mm]	140	140
Depth <sup>4)</sup>	<b>t</b>	[mm]	214	214



## Rated data

- The data is valid for operation at 400 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

DS\_GD\_8400\_0002

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

			
<b>Typical motor power</b> 4-pole asynchronous motor	P	[kW]	7.50
<b>Product key</b> <sup>1)</sup>			E84AV□□□7524□□0    E84AV□□□1134□□0    E84AV□□□1534□□0
<b>Mains voltage range</b>	$U_{AC}$	[V]	3/PE AC 320 V-0 % ... 550 V+0 %, 45 Hz-0 % ... 65 Hz+0 %
<b>DC supply</b>	$U_{DC}$	[V]	DC 455 V -0 % ... 775 V +0 %
<b>Rated output current</b> <sup>2)</sup>	$I_{N, out}$	[A]	16.5         23.5         32.0
<b>Max. cable length</b> <sup>4)</sup> Unshielded motor cable	$I_{max}$	[m]	100
Shielded motor cable	$I_{max}$	[m]	50

<sup>1)</sup> → 8 - See product key

<sup>2)</sup> Overload: 150 % \*  $I_f$  for 60 s, 200 % \*  $I_f$  for 3 s

<sup>3)</sup> Operation only permitted with mains choke

<sup>4)</sup> Technically possible cable lengths, irrespective of EMC requirements

## Dimensions

### Dimensions - built-in unit StateLine, HighLine

Dimensions	h	[mm]	325	325	325
Height	b	[mm]	140	140	140
Width	t	[mm]	199	199	199
<sup>5)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering					

### Dimensions, TopLine built-in unit

Dimensions	h	[mm]	325	325	325
Height	b	[mm]	140	140	140
Width	t	[mm]	214	214	214
<sup>5)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering					



## 8400 Inverter Drives

### Inverter

#### Rated data

- The data is valid for operation at 400 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

**DS\_GD\_8400\_0002**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

			
<b>Typical motor power</b> 4-pole asynchronous motor	<b>P</b>	[kW]	<b>18.5</b>
<b>Product key<sup>1)</sup></b>			<b>E84AV□□□1834□□0</b>
<b>Mains voltage range</b>	<b>U<sub>AC</sub></b>	[V]	3/PE AC 320 V-0 % ... 550 V+0 %, 45 Hz-0 % ... 65 Hz+0 %
<b>DC supply</b>	<b>U<sub>DC</sub></b>	[V]	DC 455 V -0 % ... 775 V +0 %
<b>Rated output current<sup>2)</sup></b>	<b>I<sub>N, out</sub></b>	[A]	39.0
<b>Max. cable length<sup>4)</sup></b> Unshielded motor cable	<b>I<sub>max</sub></b>	[m]	100
Shielded motor cable	<b>I<sub>max</sub></b>	[m]	100

<sup>1)</sup> →  8 - See product key

<sup>2)</sup> Overload: 150% \* I<sub>r</sub> for 60 s, 200% \* I<sub>r</sub> for 3 s

<sup>3)</sup> Operation only permitted with mains choke or mains filter

<sup>4)</sup> Technically possible cable lengths, irrespective of EMC requirements

#### Dimensions

##### Dimensions - built-in unit StateLine, HighLine

Dimensions			
Height	<b>h</b>	[mm]	350
Width	<b>b</b>	[mm]	204
Depth <sup>5)</sup>	<b>t</b>	[mm]	250

<sup>5)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering

##### Dimensions, TopLine built-in unit

Dimensions			
Height	<b>h</b>	[mm]	350
Width	<b>b</b>	[mm]	204
Depth	<b>t</b>	[mm]	265



## Rated data

- The data is valid for operation at 400 V AC.
- Unless otherwise specified, the data refers to the default setting.

→ Rated data and dimension sheets

**DS\_GD\_8400\_0002**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

<b>Typical motor power</b> 4-pole asynchronous motor	<b>P</b>	[kW]	<b>30.0<sup>3)</sup></b> <b>37.0<sup>3)</sup></b> <b>45.0<sup>3)</sup></b>
<b>Product key<sup>1)</sup></b>			<b>E84AV□□□3034□□0</b> <b>E84AV□□□3734□□0</b> <b>E84AV□□□4534□□0</b>
<b>Mains voltage range</b>	<b>U<sub>AC</sub></b>	[V]	3/PE AC 320 V-0 % ... 550 V+0 %, 45 Hz-0 % ... 65 Hz+0 %
<b>DC supply</b>	<b>U<sub>DC</sub></b>	[V]	DC 455 V -0 % ... 775 V +0 %
<b>Rated output current<sup>2)</sup></b>	<b>I<sub>N, out</sub></b>	[A]	61.0      76.0      89.0
<b>Max. cable length<sup>4)</sup></b> Unshielded motor cable	<b>I<sub>max</sub></b>	[m]	100
Shielded motor cable	<b>I<sub>max</sub></b>	[m]	100

<sup>1)</sup> → 8 - See product key

<sup>2)</sup> Overload: 150% \* I<sub>r</sub> for 60 s, 200% \* I<sub>r</sub> for 3 s

<sup>3)</sup> Operation only permitted with mains choke

<sup>4)</sup> Technically possible cable lengths, irrespective of EMC requirements

## Dimensions

Dimensions - built-in unit StateLine, HighLine

<b>Dimensions</b>		<b>h</b>	[mm]	450	450	450
Height		<b>b</b>	[mm]	250	250	250
Width		<b>t</b>	[mm]	250	250	250
Depth <sup>5)</sup>						

<sup>5)</sup> 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering

Dimensions, TopLine built-in unit

<b>Dimensions</b>		<b>h</b>	[mm]	450	450	450
Height		<b>b</b>	[mm]	250	250	250
Width		<b>t</b>	[mm]	265	265	265
Depth <sup>5)</sup>						



# 8400 Inverter Drives

## Inverter

### Dimensions

Dimensions - Cold Plate technology StateLine, HighLine

Product key	Typical motor power	Dimensions		
		Height, including fastening	Width, including fastening	Depth
Inverter	4-pole asynchronous motor	P	h	b
E84AV□□□2512□□0	0.25		186	
E84AV□□□3712□□0	0.37			102
E84AV□□□5512□□0	0.55		236	
E84AV□□□7512□□0	0.75			
E84AV□□□1122□□0	1.10			
E84AV□□□1522□□0	1.50		295	173
E84AV□□□2222□□0	2.20			
E84AV□□□3714□□0	0.37			
E84AV□□□5514□□0	0.55		236	102
E84AV□□□7514□□0	0.75			
E84AV□□□1124□□0	1.10			
E84AV□□□1524□□0	1.50			
E84AV□□□2224□□0	2.20		295	137
E84AV□□□3024□□S	3.00			
E84AV□□□4024□□0	4.00			
E84AV□□□5524□□0	5.50			
E84AV□□□7524□□0	7.50			
E84AV□□□1134□□0	11.0		360	141
E84AV□□□1534□□0	15.0			
E84AV□□□1834□□0	18.5			
E84AV□□□2234□□0	22.0		390	164
		[kW]	[mm]	[mm]
			t	

Dimensions, TopLine cold plate technology

Product key	Typical motor power	Dimensions		
		Height, including fastening	Width, including fastening	Depth
Inverter	4-pole asynchronous motor	P	h	b
E84AV□□□5512□□0	0.55		236	102
E84AV□□□7512□□0	0.75			
E84AV□□□1122□□0	1.10			
E84AV□□□1522□□0	1.50		295	173
E84AV□□□2222□□0	2.20			
E84AV□□□3714□□0	0.37			
E84AV□□□5514□□0	0.55		236	102
E84AV□□□7514□□0	0.75			
E84AV□□□1124□□0	1.10			
E84AV□□□1524□□0	1.50			
E84AV□□□2224□□0	2.20		295	137
E84AV□□□3024□□S	3.00			
E84AV□□□4024□□0	4.00			
E84AV□□□5524□□0	5.50			
E84AV□□□7524□□0	7.50			
E84AV□□□1134□□0	11.0		360	174
E84AV□□□1534□□0	15.0			156
E84AV□□□1834□□0	18.5			
E84AV□□□2234□□0	22.0		390	231
		[kW]	[mm]	[mm]
			t	

- 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering



## Dimensions

Dimensions of push-through technique for StateLine, HighLine

Product key	Typical motor power	Dimensions		
		Height, including fastening	Width, including fastening	Depth (on control cabinet side)
		P [kW]	h [mm]	b [mm]
E84AV□□□2512□□0	0.25	186		185
E84AV□□□3712□□0	0.37		102	
E84AV□□□5512□□0	0.55	236		
E84AV□□□7512□□0	0.75			
E84AV□□□1122□□0	1.10			
E84AV□□□1522□□0	1.50	295	137	
E84AV□□□2222□□0	2.20			
E84AV□□□3714□□0	0.37	236	102	
E84AV□□□5514□□0	0.55			
E84AV□□□7514□□0	0.75			
E84AV□□□1124□□0	1.10			
E84AV□□□1524□□0	1.50	295	137	
E84AV□□□2224□□0	2.20			
E84AV□□□3024□□0	3.00			
E84AV□□□4024□□0	4.00	321		
E84AV□□□5524□□0	5.50			
E84AV□□□7524□□0	7.50			
E84AV□□□1134□□0	11.0	360		
E84AV□□□1534□□0	15.0			

Dimensions, TopLine push-through technique

Product key	Typical motor power	Dimensions		
		Inverter	4-pole asynchronous motor	Height, including fastening
		P [kW]	h [mm]	b [mm]
E84AV□□□5512□□0	0.55		236	102
E84AV□□□7512□□0	0.75			
E84AV□□□1122□□0	1.10			
E84AV□□□1522□□0	1.50	295	137	
E84AV□□□2222□□0	2.20			
E84AV□□□3714□□0	0.37			
E84AV□□□5514□□0	0.55	236	102	
E84AV□□□7514□□0	0.75			
E84AV□□□1124□□0	1.10			
E84AV□□□1524□□0	1.50	295	137	
E84AV□□□2224□□0	2.20			
E84AV□□□3024□□0	3.00			
E84AV□□□4024□□0	4.00			
E84AV□□□5524□□0	5.50	321		
E84AV□□□7524□□0	7.50			
E84AV□□□1134□□0	11.0			
E84AV□□□1534□□0	15.0	360		

- 8400 StateLine, HighLine and TopLine depth increases by 20 mm with safety engineering



## 8400 Inverter Drives

### Inverter

## Weights

The tables below show the weights of frequency inverters without a communication module for built-in units.

Mode	Product key	Mass
		m
		[kg]
8400 BaseLine	E84AV□□□2512□□0	
	E84AV□□□3712□□0	1.2
	E84AV□□□5512□□0	
	E84AV□□□7512□□0	
	E84AV□□□1122□□0	1.4
	E84AV□□□1522□□0	
	E84AV□□□2222□□0	1.9
	E84AV□□□3714□□0	
	E84AV□□□5514□□0	1.2
	E84AV□□□7514□□0	
8400 StateLine 8400 HighLine	E84AV□□□1124□□0	1.4
	E84AV□□□1524□□0	
	E84AV□□□2224□□0	1.9
	E84AV□□□3024□□0	
	E84AVB□□□3024□□0	2.1

Different product versions result in the following additional masses:

push-through technique version: 0.100 kg.  
safety engineering version: 0.100 kg



Mode	Product key	Mass
		m
		[kg]
8400 StateLine 8400 HighLine	E84AV□□□2512□□0	1.3
	E84AV□□□3712□□0	
	E84AV□□□5512□□0	1.8
	E84AV□□□7512□□0	
	E84AV□□□1122□□0	
	E84AV□□□1522□□0	2.1
	E84AV□□□2222□□0	
	E84AV□□□3714□□0	
	E84AV□□□5514□□0	1.8
	E84AV□□□7514□□0	
8400 TopLine	E84AV□□□1124□□0	
	E84AV□□□1524□□0	2.1
	E84AV□□□2224□□0	
	E84AV□□□3024□□S	2.1
	E84AV□□□4024□□0	
	E84AV□□□5524□□0	4.4
	E84AV□□□7524□□0	
	E84AV□□□1134□□0	5.8
	E84AV□□□1534□□0	
	E84AV□□□1834□□0	12.0
	E84AV□□□2234□□0	
	E84AV□□□3034□□0	
	E84AV□□□3734□□0	17.2
	E84AV□□□4534□□0	

Mode	Product key	Mass
		m
		[kg]
8400 TopLine	E84AV□□□5512□□0	2.0
	E84AV□□□7512□□0	
	E84AV□□□1122□□0	
	E84AV□□□1522□□0	2.3
	E84AV□□□2222□□0	
	E84AV□□□3714□□0	
	E84AV□□□5514□□0	2.0
	E84AV□□□7514□□0	
	E84AV□□□1124□□0	
	E84AV□□□1524□□0	
8400 TopLine	E84AV□□□2224□□0	2.3
	E84AV□□□3024□□S	
	E84AV□□□4024□□0	
	E84AV□□□5524□□0	4.6
	E84AV□□□7524□□0	
	E84AV□□□1134□□0	6.0
	E84AV□□□1534□□0	
	E84AV□□□1834□□0	12.2
	E84AV□□□2234□□0	
8400 TopLine	E84AV□□□3034□□0	
	E84AV□□□3734□□0	17.4
	E84AV□□□4534□□0	



## Safety system (STO)

The 8400 StateLine, HighLine and TopLine versions are optionally fitted with the safety system "Safe Torque Off STO". This helps you to reduce the amount of work involved in controlling the equipment, save space in the control cabinet and keep wiring to a minimum. The safety system is certified to EN ISO 13849-1 (Cat. 4, PL e), EN 61508/EN 62061 (SIL 3).

As an option, the inverters can be ordered with integrated safety system (STO). The product key of the inverter (see p. 8) has a "B" at the 14th position in this case.

Example: a StateLine 230 V, 0,55 kW, built-in unit with safety system: E84AVSCE5512SB0



*8400 StateLine with safety engineering*

## Memory module

All drive settings for the 8400 are stored on the memory module, which is a pluggable memory chip. You can copy the settings to other memory modules. The advantage for you: much faster commissioning, particularly in series production. Furthermore, the memory module ensures that drives can be replaced quickly and without errors being made.

Mode	Features	Product key
Memory module	<ul style="list-style-type: none"> <li>▶ For 8400 BaseLine</li> <li>▶ Packaging unit: 12 items</li> <li>▶ For 8400 StateLine, HighLine and TopLine</li> <li>▶ Packaging unit: 5 items</li> </ul>	E84AYM20S/M
		E84AYM10S/M

- ▶ Each inverter is fitted with a memory module ex works

## Memory module copier

The memory module copier is a copying system for all memory modules from Lenze. With the help of simple optical user guidance, the data of a module are copied quickly and reliably to another memory module.



*Memory module copier*

Mode	Features	Product key
Memory module copier	<ul style="list-style-type: none"> <li>▶ Operation via power supply unit or battery</li> <li>▶ User guidance by means of LEDs</li> <li>▶ Usable for 8400 inverter drives, 9400 servo drives as well as smd and SMV frequency inverters</li> </ul>	EZAED1000



## 8400 Inverter Drives

### Accessories

#### Brake resistors

An external brake resistor is required to brake high moments of inertia or in the event of prolonged operation in generator mode; this resistor converts braking energy into heat.

The brake resistors recommended in the table below have been dimensioned for approx. 1.5 times the regenerative power, with a cycle time of 15/135 s (brake/rest ratio). These brake resistors generally meet the usual requirements of standard applications.



*ERBM... (IP50) brake resistor*

The brake resistors are fitted with a thermostat (potential-free NC contact).

Typical motor power	Mains voltage	Product key		Rated resistance	Rated power	Thermal capacity	Dimensions	Mass
4-pole asynchronous motor		Inverter	Brake resistor					
P [kW]	U <sub>AC</sub> [V]			R <sub>N</sub> [Ω]	P <sub>N</sub> [W]	C <sub>th</sub> [KWs]	h x b x t [mm]	m [kg]
0.25	1 AC 180 ... 264	E84AV□□□2512□□0	ERBM180R050W	180.0	50.0	8	175 x 21 x 40	0.3
0.37		E84AV□□□3712□□0						
0.55		E84AV□□□5512□□0	ERBM100R100W	100.0	100.0	15	240 x 80 x 95	0.5
0.75		E84AV□□□7512□□0						
1.10		E84AV□□□1122□□0	ERBP033R200W	33.0	200.0	30	240 x 41 x 122	1.0
1.50		E84AV□□□1522□□0			300.0	45	320 x 41 x 122	1.4
2.20		E84AV□□□2222□□0	ERBP033R300W					
0.37	3 AC 320 ... 550	E84AV□□□3714□□0	ERBM390R100W	390.0	100.0	15	235 x 21 x 40	0.4
0.55		E84AV□□□5514□□0						
0.75		E84AV□□□7514□□0						
1.10		E84AV□□□1124□□0	ERBP180R200W	180.0	200.0	30	240 x 41 x 122	1.0
1.50		E84AV□□□1524□□0			300.0	45	320 x 41 x 122	1.4
2.20		E84AV□□□2224□□0	ERBP180R300W					

- The 8400 BaseLine (400 V drives) requires a connector in order to connect the brake resistor (order designation: EWS0074/M).

→ Data sheet on ERBM brake resistors

**DS\_ZB\_ERBM\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

→ Data sheet on ERBP brake resistors

**DS\_ZB\_ERBP\_0001**

Available for download at [lenze.de/dsc](http://lenze.de/dsc)

→ Data sheet on ERBP brake resistors

**DS\_ZB\_ERBP\_0001**

Available for download at [lenze.de/dsc](http://lenze.de/dsc)

Data sheet on ERBS brake resistors

**DS\_ZB\_ERBS\_0001**

Available for download at [www.lenze.com/dsc](http://www.lenze.com/dsc)



### Brake resistors

For standard applications, we recommend the following combinations:

E84AV□□□3024□□0 and ERBP180R300W  
 E84AV□□□4024□□0 and ERBS047R400W  
 E84AV□□□5524□□0 and ERBS047R800W  
 E84AV□□□7524□□0 and ERBS027R01K2  
 E84AV□□□1134□□0 and ERBS027R01K2  
 E84AV□□□1534□□0 and ERBS018R01K4  
 E84AV□□□1834□□0 and ERBS015R02K4  
 E84AV□□□2234□□0 and ERBS015R02K4.



With regard to the E84AV inverter□□□3024□□0, only the ERBP180R300W brake resistor can be used for 8400 BaseLine.

*ERBP... (IP21) and ERBS... (IP65) brake resistor*

Further possible combinations:

Typical motor power	Mains voltage	Product key		Rated resistance	Rated power	Thermal capacity	Dimensions	Mass	
4-pole asynchronous motor		Inverter	Brake resistor						
P [kW]	U <sub>AC</sub> [V]			R <sub>N</sub> [Ω]	P <sub>N</sub> [W]	C <sub>th</sub> [KWs]	h x b x t [mm]	m [kg]	
3.00	3 AC 320 ... 550	E84AV□□□3024□□0	ERBP180R300W	180.0	300.0	45	320 x 41 x 122	1.4	
			ERBP082R200W	82.0	200.0	30		1.0	
			ERBS082R780W		780.0	117	666 x 124 x 122	4.0	
4.00		E84AV□□□4024□□0	ERBP047R200W	47.0	200.0	30	320 x 41 x 122	1.0	
			ERBS047R400W		400.0	60	400 x 110 x 105	2.3	
			ERBS047R800W		800.0	120	710 x 110 x 105	3.9	
5.50		E84AV□□□5524□□0	ERBP047R200W		200.0	30	320 x 41 x 122	1.0	
			ERBS047R400W		400.0	60	400 x 110 x 105	2.3	
			ERBS047R800W		800.0	120	710 x 110 x 105	3.9	
7.50		E84AV□□□7524□□0	ERBP027R200W	27.0	200.0	30	320 x 41 x 122	1.0	
			ERBS027R600W		600.0	90	550 x 110 x 105	3.1	
			ERBS027R01K2		1200.0	180	1020 x 110 x 105	5.6	
11.0		E84AV□□□1134□□0	ERBP027R200W		200.0	30	320 x 41 x 122	1.0	
			ERBS027R600W		600.0	90	550 x 110 x 105	3.1	
			ERBS027R01K2		1200.0	180	1020 x 110 x 105	5.6	
15.0		E84AV□□□1534□□0	ERBS018R800W	18.0	800.0	120	710 x 110 x 105	3.9	
			ERBS018R01K4		1400.0	210	1110 x 110 x 105	6.2	
			ERBS018R02K8		2800.0	420	1110 x 200 x 105	12.0	
18.5		E84AV□□□1834□□0	ERBS015R800W	15.0	800.0	120	710 x 110 x 105	3.9	
			ERBS015R01K2		1200.0	180	1020 x 110 x 105	5.6	
			ERBS015R02K4		2400.0	420	1020 x 200 x 105	10.0	
22.0		E84AV□□□2234□□0	ERBS015R800W		800.0	120	710 x 110 x 105	3.9	
			ERBS015R01K2		1200.0	180	1020 x 110 x 105	5.6	
			ERBS015R02K4		2400.0	420	1020 x 200 x 105	10.0	
30.0		E84AV□□□3034□□0							
37.0		E84AV□□□3734□□0	ERBG075D01K9		7.5	1900.0	285	486 x 236 x 302	
45.0		E84AV□□□4534□□0			9.5				

- The 8400 BaseLine (400 V drives) requires a connector in order to connect the brake resistor (order designation: EWS0074/M).



## 8400 Inverter Drives

### Accessories

#### Mains chokes

A mains choke is an inductor that is connected to the mains cable of the inverter. Using a mains choke offers the following advantages:

► **Less system perturbation:**

The wave form of the mains current is a closer approximation of a sine wave.

► **Reduced r.m.s. mains current:**

Reduction in mains, cable and fuse load

A mains choke can be used without restriction together with RFI filters and/or sinusoidal filters.



*Mains choke*

**Please note:**

Using a mains choke slightly reduces the mains voltage at the inverter input - the typical voltage drop on the mains choke at the rated point is approximately 5%.

Typical motor power	Mains voltage	Product key		Rated current	Dimensions	Mass
4-pole asynchronous motor		Inverter	Mains choke			
P	$U_{AC}$			$I_N$	$h \times b \times t$	$m$
[kW]	[V]			[A]	[mm]	[kg]
0.25		E84AV□□□2512□□0	ELN1-0900H005	5.00	75 x 66 x 82	1.1
0.37		E84AV□□□3712□□0				
0.55		E84AV□□□5512□□0				
0.75		E84AV□□□7512□□0		9.00		
1.10		E84AV□□□1122□□0				
1.50		E84AV□□□1522□□0				
2.20		E84AV□□□2222□□0		18.0		
0.37		E84AV□□□3714□□0	ELN3-1500H003-001		105 x 129 x 61	1.2
0.55		E84AV□□□5514□□0		2.50		
0.75		E84AV□□□7514□□0				
1.10		E84AV□□□1124□□0				
1.50		E84AV□□□1524□□0		6.10		
2.20		E84AV□□□2224□□0				
3.00		E84AV□□□3024□□0 E84AV□□□3024□□S		7.00		
4.00		E84AV□□□4024□□0	ELN3-0250H013-001		122 x 148 x 63	2.6
5.50		E84AV□□□5524□□0		13.0		
7.50		E84AV□□□7524□□0		17.0		
11.0		E84AV□□□1134□□0		24.0		
15.0		E84AV□□□1534□□0 <sup>1)</sup>		35.0		
18.5		E84AV□□□1834□□0			225 x 219 x 135	10.2
22.0		E84AV□□□2234□□0 <sup>2)</sup>		45.0		
30.0		E84AV□□□3034□□0 <sup>1)</sup>	ELN3-0055H055-001	55.0	170 x 219 x 111	8.2
37.0		E84AV□□□3734□□0 <sup>1)</sup>		85.0	270 x 267 x 130	13.2
45.0		E84AV□□□4534□□0 <sup>1)</sup>	ELN3-0038H085-001		270 x 267 x 175	20.6

<sup>1)</sup> Operation only permitted with mains choke

<sup>2)</sup> Operation only permitted with mains choke or mains filter



## Interference suppression

RFI filters and mains filters are used to ensure compliance with EMC requirements in accordance with the European standard EN 61800-3. This standard specifies EMC requirements for electric drive systems in different categories. A mains filter consists of an RFI filter and a mains choke.

**Category C1** is used in public grids (residential areas). Category C1 is in line with EN 55011 with regard to the limit values of Class B.

**Category C2** is used in industrial areas and, according to the opinion of the user, in residential areas as well. Category C2 is in line with EN 55011 with regard to the limit values of Class A.

In the case of increased requirements regarding emitted interference that cannot be satisfied with the radio interference suppression measures integrated in the inverter, external filters can be used. The filters are suitable as side-mounted filters or footprint filters.

Three different filters are available:

An RFI filter LL (Low Leakage)

- ▶ leakage current < 3.5 mA with a 5 m shielded motor cable enables installation in movable systems
- ▶ Category C1 with 5 m shielded motor cable



RFI filter

RFI filters SD (Short Distance)

- ▶ with a low leakage current, e.g. for operation connected to a 30 mA earth-leakage circuit breaker with a 25 m shielded motor cable
- ▶ Category C1 with 25 m shielded motor cable
- ▶ Category C2 with 50 m shielded motor cable

RFI filter LD and mains filter LD (Long Distance)

- ▶ Category C1 with 50 m shielded motor cable
- ▶ Category C2 with 100 m shielded motor cable (only in the case of 400 V devices, up to 15 kW only with sine filter)
- ▶ RFI filters LD are suitable for operation connected to a 300 mA earth-leakage circuit breaker with a 50 m shielded motor cable

Note:

The indicated motor cable lengths are maximum lengths.

Typical motor power	Mains voltage	Product key		Rated current	Dimensions	Mass
		Inverter <sup>1)</sup>	RFI filter			
P	U <sub>AC</sub>			I <sub>N</sub>	h x b x t	m
[kW]	[V]			[A]	[mm]	[kg]
4-pole asynchronous motor	1 AC 180 ... 264	E84AV□□□2512□□0	E84AZESR3712LL	5.00	212 x 70 x 60	0.8
			E84AZESR3712SD			
			E84AZESR3712LD			
		E84AV□□□3712□□0	E84AZESR3712LL	6.00	262 x 70 x 60	1.0
			E84AZESR3712SD			
			E84AZESR3712LD			
0.55		E84AV□□□5512□□0	E84AZESR5512LL	9.00		
			E84AZESR5512SD			
		E84AV□□□7512□□0	E84AZESR7512LD			
			E84AZESR7512LL			
0.75		E84AV□□□7512□□0	E84AZESR7512SD			
			E84AZESR7512LD			

<sup>1)</sup> 8400 StateLine, HighLine and TopLine



# 8400 Inverter Drives

## Accessories

### Interference suppression

Typical motor power	Mains voltage	Product key		Rated current	Dimensions	Mass
4-pole asynchronous motor		Inverter <sup>1)</sup>	RFI filter			
P	U <sub>AC</sub>			I <sub>N</sub>	h x b x t	m
[kW]	[V]			[A]	[mm]	[kg]
1.10	1 AC 180 ... 264	E84AV□□□1122□□0	E84AZESR2222LL	22.0	317 x 70 x 60	1.4
			E84AZESR2222SD			1.7
			E84AZESR2222LD			1.5
1.50		E84AV□□□1522□□0	E84AZESR2222LL			1.4
			E84AZESR2222SD			1.7
			E84AZESR2222LD			1.5
2.20	3 AC 320 ... 550	E84AV□□□2222□□0	E84AZESR2222LL	3.30	262 x 70 x 60	1.4
			E84AZESR2222SD			1.7
			E84AZESR2222LD			1.5
0.37		E84AV□□□3714□□0	E84AZESR7514SD			1.4
			E84AZESR7514LD			1.7
0.55			E84AZESR7514SD			1.5
			E84AZESR7514LD			1.4
0.75			E84AZESR7514SD			1.4
1.10		E84AV□□□1124□□0	E84AZESR2224SD	7.30	317 x 70 x 60	1.5
			E84AZESR2224LD			1.4
1.50			E84AZESR2224SD			1.5
			E84AZESR2224LD			1.4
2.20			E84AZESR2224SD			1.5
4.00	3 AC 320 ... 550	E84AV□□□4024□□0	E84AZESR5524SD	18.0	306 x 140 x 60	1.4
			E84AZESR5524LD			3.1
5.50		E84AV□□□5524□□0	E84AZESR5524SD			2.2
			E84AZESR5524LD			3.1
7.50	3 AC 320 ... 550	E84AV□□□7524□□0	E84AZESR5524LD	29.0	361 x 140 x 60	2.2
11.0		E84AV□□□1134□□0				3.3
15.0		E84AV□□□1534□□0				
18.5		E84AV□□□1834□□0	E84AZESR1834LD			7.5

Typical motor power	Mains voltage	Product key		Rated current	Dimensions	Mass
4-pole asynchronous motor		Inverter <sup>1)</sup>	Mains filter			
P	U <sub>AC</sub>			I <sub>N</sub>	h x b x t	m
[kW]	[V]			[A]	[mm]	[kg]
22.0	3 AC 320 ... 550	E84AV□□□2234□□0	E84AZESM2234LD	42.0	365 x 205 x 90	14.0

<sup>1)</sup> 8400 StateLine, HighLine and TopLine

→ Data sheet on RFI filters

**DS\_ZB\_SR\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



## 24 V power supply unit

External power supply units are available as an alternative external power source for the control electronics of the 8400 StateLine, HighLine or TopLine. The advantages of an external power supply are that the inverter can be parameterised and diagnosed with the mains input deenergised.



*24 V power supply unit*

### Rated data

Product key			EZV1200-000	EZV2400-000	EZV4800-000	EZV1200-001	EZV2400-001	EZV4800-001
<b>Rated voltage AC</b>	$U_{N, AC}$	[V]		230			400	
<b>Rated mains current</b>	$I_{N, AC}$	[A]	0.84	1.20	2.30	0.34	0.57	1.00
<b>Output voltage</b>	$U_{out}$	[V]			DC 22.5 ... 28.5			
<b>Rated current</b>	$I_N$	[A]	5.00	10.0	20.0	5.00	10.0	20.0
<b>Dimensions</b>								
Height	<b>h</b>	[mm]			130			
Width	<b>b</b>	[mm]	55	85	157	73	85	160
Depth	<b>t</b>	[mm]			125			
<b>Mass</b>	<b>m</b>	[kg]	0.8	1.2	2.5	1.0	1.1	1.9

## Brake switch

The brake switch consists of a rectifier and an electronic circuit breaker for the switching of an electromechanical brake. The brake switch is mounted on the control cabinet plate by means of two screws. Control is carried out via a digital output of the inverter.



*Brake switch*

Mode	Features	Product key
Half-wave rectification	<ul style="list-style-type: none"> <li>▶ Input voltage: AC 320 ... 550 V</li> <li>▶ Output voltage: DC 180 V (at AC 400 V), DC 225 V (at AC 500 V)</li> <li>▶ Max. brake current: DC 0.61 A</li> <li>▶ Enclosure: IP00</li> </ul>	E82ZWBRB
Bridge rectification	<ul style="list-style-type: none"> <li>▶ Input voltage: AC 180 ... 317 V</li> <li>▶ Output voltage: DC 205 V (at AC 230 V)</li> <li>▶ max. brake current: DC 0.54 A</li> </ul>	E82ZWBRB

→ Data sheet on E82ZWBRB brake switch

[DS\\_Brake\\_8400\\_0001](#)

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

→ Data sheet on E82ZWBRB brake switch

[DS\\_Brake\\_8400\\_0002](#)

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



## 8400 Inverter Drives

### Accessories

#### USB diagnostic adapter

On the Inverter Drives 8400, operation, parameterisation and diagnostics via the L-force diagnostic interface are carried out using the X400 keypad or a PC. The use of a PC requires the USB diagnostic adapter. A connecting cable is supplied to make the connection to the USB port on the PC.

Connecting cables in three different lengths of 2.5 m, 5 m and 10 m can be purchased separately to connect the USB diagnostic adapter to the L-force diagnostic interface (DIAG) on the inverter. Connection during operation is possible.

The software drivers required for the operation of the adapter are installed automatically when the Lenze software (L-force Engineer) is installed.

- ▶ On the 8400 BaseLine C, StateLine C, HighLine C and TopLine C, the integrated CANopen interface can be used in conjunction with a PC system bus adapter to provide an alternative method to operation, parameterisation and diagnostics with the PC and the L-force Engineer software.



*USB diagnostic adapter incl.  
connecting cable to the PC*

Mode		Features	Slot	Product key
USB diagnostic adapter		<ul style="list-style-type: none"><li>▶ Input-side voltage supply via USB connection on PC</li><li>▶ Output-side voltage supply via diagnostic interface of the inverter</li><li>▶ Diagnostic LED</li><li>▶ Electrical isolation of PC and inverter</li><li>▶ Hot-pluggable</li></ul>	DIAG	E94AZCUS

#### Connecting cables for USB diagnostic adapter

Mode	Features	Product key
Connecting cable for USB diagnostic adapter	<ul style="list-style-type: none"><li>▶ Length: 2.5 m</li><li>▶ Length: 5 m</li><li>▶ Length: 10 m</li></ul>	EWL0070
		EWL0071
		EWL0072



## X400 keypad

The keypad can be used as an alternative to a PC for local operation, parameter setting or diagnostics. Data can be accessed quickly via structured menus and a plain text display. The keypad plugs into the L-force diagnostics interface (DIAG) on the front of the inverter.



*X400 keypad*

Mode		Features	Slot	Product key
X400 keypad		<ul style="list-style-type: none"> <li>▶ Menu navigation</li> <li>▶ Graphics display with background lightning for clear presentation of information</li> <li>▶ 4 navigation keys, 2 context-sensitive keys</li> <li>▶ Adjustable RUN/STOP function</li> <li>▶ Hot-pluggable</li> <li>▶ Useable for L-force Inverter Drives 8400 and Servo Drives 9400</li> </ul>	DIAG	EZAEBK1001

- ▶ Inverter Drives 8400 can be purchased with a keypad attached. To order the products in this ready-made format, please complete the inverter product key as follows when placing your order: E84AV ... 0-XXXXX

## Diagnosis terminal X400

Mode		Features	Slot	Product key
Diagnosis terminal X400		<ul style="list-style-type: none"> <li>▶ X400 keypad in a robust housing</li> <li>▶ Also suitable for installation in the control cabinet door</li> <li>▶ incl. 2.5 m cable</li> <li>▶ IP20 enclosure, IP65 for control cabinet installation on front face</li> <li>▶ Useable for L-force Inverter Drives 8400 and Servo Drives 9400</li> </ul>	DIAG	EZAEBK2001



## 8400 Inverter Drives

### Accessories

#### PC system bus adapter

On the 8400 BaseLine C, StateLine C, HighLine C and TopLine C, the integrated CANopen interface used in conjunction with a PC system bus adapter provides an alternative method to operation, parameterisation and diagnostics with the PC and the L-force Engineer software. A PC system bus adapter is required instead of a USB diagnostic adapter. This adapter plugs into the parallel interface or the USB port on the PC. The corresponding drivers are installed automatically. Depending on the design, the voltage supply for the adapter is provided via the DIN or PS2 connection, or via the USB port on the PC.

Advantage:

- ▶ Operation, parameterisation and diagnostics in parallel to the keypad
- ▶ In networked systems, multiple inverters can be addressed in parallel from a single station (remote parameterisation).



*EMF2173IBV003 adapter*

Mode	Features	Product key
PC system bus adapter	▶ Voltage supply via DIN port on PC	EMF2173IB
	▶ Voltage supply via PS2 connection on PC	EMF2173IBV002
	▶ Voltage supply via PS2 connection on PC ▶ Electrical isolation from the bus	EMF2173IBV003
	▶ Voltage supply via USB port on PC	EMF2177IB
	▶ Electrical isolation from the bus	

#### Shield connection

A shield mounting connects the shield of the motor cable to the shield connection of the inverter.

Mode	Features	Product key
Metal cable tie	▶ Cable diameter: 8...30 mm ▶ Packaging unit: 50 items	EZAMBKBM
Fixing clip	▶ Cable diameter: 4...10 mm ▶ Packaging unit: 20 items	EZAMBHXM007/M
Wire clamp	▶ Cable diameter: 4...15 mm ▶ Packaging unit: 10 items	EZAMBHXM006/M
	▶ Cable diameter: 10...20 mm ▶ Packaging unit: 10 items	EZAMBHXM003/M
	▶ Cable diameter: 15...28 mm ▶ Packaging unit: 10 items	EZAMBHXM004/M
	▶ Cable diameter: 20...37 mm ▶ Packaging unit: 10 items	EZAMBHXM005/M



## Setpoint potentiometer

The setpoint (e.g. speed) can be selected using an external potentiometer.

The setpoint potentiometer is connected to the inverter's input terminals. A scale and a rotary knob can also be supplied.



*Setpoint potentiometer with scale and rotary knob*

Mode	Product key
Potentiometer 10 kOhm/1 W	ERPD0010K0001W
Rotary knob, 36 mm diameter	ERZ0001
Scale 0 ... 100%, 62 mm diameter	ERZ0002

## Other accessories

Lenze also supplies a whole range of accessories for the 8400 inverter drives. In the catalogues Controller-based Automation and PC-based Automation, you can find

- ▶ controllers and industrial PCs,
- ▶ I/O systems
- ▶ human machines interfaces

Prepared system cables for connecting motors, fans and feedback can be found in the manual "System Cables and Connectors" in the Lenze library on CD or online at <http://www.lenze.com> under "Technical documentation".



## 8400 Inverter Drives Modules

### Communication module PROFIBUS

A communication module is used to connect the 8400 StateLine, HighLine or TopLine to a bus system.



*Communication module PROFIBUS*

Mode		Features	Slot	Product key
Communication module				
PROFIBUS		<ul style="list-style-type: none"><li>▶ 5 LEDs for status display</li><li>▶ Address can be set by means of a DIP switch</li><li>▶ Electrically isolated from the bus</li><li>▶ Sub-D connection</li><li>▶ Suitable for Inverter Drives 8400 StateLine, HighLine and TopLine</li></ul>	MCI	E84AYCPMV/S

- ▶ Inverter Drives 8400 can be purchased with a PROFIBUS communication module attached. To order the products in this ready-made format, please complete the inverter product key as follows when placing your order: E84AV ... 0-PMXXX

### Standards and operating conditions

Product key			E84AYCPMV/S
Mode			PROFIBUS
Communication module			
Enclosure			IP20
EN 60529			
Climatic conditions			
Storage (EN 60721-3-1)			1K3 (temperature: -25 °C ... +60 °C)
Transport (EN 60721-3-2)			2K3 (temperature: -25 °C ... +70 °C)
Operation (EN 60721-3-3)			3K3 (temperature: -10°C ... +55°C)
Insulation voltage to reference earth/PE			
EN 61800-5-1	$U_{AC}$	[V]	50.0



## Communication module PROFIBUS

<b>Product key</b>			E84AYCPMV/S
<b>Communication</b>			
Medium			RS 485
Communication profile			PROFIBUS-DP-V0 PROFIBUS-DP-V1
Device profile			PROFIDrive, version 3
<b>Baud rate</b>		[kBit / s]	9.6 ... 12 000 (automatic detection)
<b>Node</b>			Slave
<b>Network topology</b>			with repeater: Line or tree without repeater: Line
<b>Process data words (PCD)</b>			
16 Bit			1 ... 16
<b>DP user data length</b>			Optional parameter channel (4 words) + process data words
<b>Number of bus nodes</b>			31 slaves + 1 master per bus segment With repeaters: 125
<b>Max. cable length</b> per bus segment	I <sub>max</sub>	[m]	1200 (depending on the baud rate and the cable type used)



## 8400 Inverter Drives Modules

### Communication module EtherCAT

A communication module is used to connect the 8400 StateLine, HighLine or TopLine to a bus system.



*Communication module EtherCAT*

Mode		Features	Slot	Product key
Communication module				
EtherCAT		<ul style="list-style-type: none"><li>▶ Distributed clock</li><li>▶ 2 RJ45 connections with LEDs for link/activity</li><li>▶ 5 LEDs for status display</li><li>▶ Connection option for separate 24 V supply</li><li>▶ Suitable for Inverter Drives 8400 StateLine, HighLine and TopLine</li></ul>	MCI	E84AYCETV/S

- ▶ Inverter Drives 8400 can be purchased with an EtherCAT communication module attached. To order the products in this ready-made format, please complete the inverter product key as follows when placing your order: E84AV ... 0-ETXXX

### Standards and operating conditions

Product key			E84AYCETV/S
Mode			EtherCAT
Communication module			
Enclosure			IP20
Climatic conditions			
Storage (EN 60721-3-1)			1K3 (temperature: -25 °C ... +60 °C)
Transport (EN 60721-3-2)			2K3 (temperature: -25 °C ... +70 °C)
Operation (EN 60721-3-3)			3K3 (temperature: -10°C ... +55°C)
Insulation voltage to reference earth/PE			
EN 61800-5-1	$U_{AC}$	[V]	50.0



## Communication module EtherCAT

<b>Product key</b>			<b>E84AYCETV/S</b>
<b>Communication</b>			
Medium	CAT5e S/FTP according to ISO/IEC11801 (2002)		
Communication profile	CoE (CANopen over EtherCAT)		
<b>Baud rate</b>	[MBit / s]		100
<b>Node</b>			Slave
<b>Network topology</b>			Line
<b>Number of logical process data channels</b>			1
<b>Process data words (PCD)</b>			1 ... 16
<b>Number of bus nodes</b>			max. 65535
<b>Max. cable length between two nodes</b>	$I_{\max}$	[m]	100



## 8400 Inverter Drives Modules

### Communication module PROFINET

A communication module is used to connect the 8400 StateLine, HighLine or TopLine to a bus system.



*Communication module PROFINET*

Mode		Features	Slot	Product key
Communication module				
PROFINET		<ul style="list-style-type: none"><li>▶ 2 RJ45 connections with LEDs for link/activity</li><li>▶ 5 LEDs for status display</li><li>▶ Connection option for separate 24 V supply</li><li>▶ Suitable for Inverter Drives 8400 StateLine, HighLine and TopLine</li></ul>	MCI	E84AYCERV/S

- ▶ Inverter Drives 8400 can be purchased with a PROFINET communication module attached. To order the products in this ready-made format, please complete the inverter product key as follows when placing your order: E84AV ... 0-ERXXX

### Standards and operating conditions

Product key			E84AYCERV/S
Mode			PROFINET
Communication module			
Enclosure			IP20
EN 60529			
Climatic conditions			
Storage (EN 60721-3-1)			1K3 (temperature: -25 °C ... +60 °C)
Transport (EN 60721-3-2)			2K3 (temperature: -25 °C ... +70 °C)
Operation (EN 60721-3-3)			3K3 (temperature: -10°C ... +55°C)
Insulation voltage to reference earth/PE			
EN 61800-5-1	U <sub>AC</sub>	[V]	50.0



## Communication module PROFINET

<b>Product key</b>			<b>E84AYCERV/S</b>
<b>Communication</b>			CAT5e S/FTP according to ISO/IEC11801 (2002)
Medium			PROFINET RT Conf. Class B
<b>Communication profile</b>			
<b>Baud rate</b>	[MBit / s]		100
<b>Node</b>			Slave (Device)
<b>Network topology</b>			Line
<b>Number of logical process data channels</b>			1
<b>Process data words (PCD)</b>			
16 Bit			1 ... 16
<b>Max. cable length</b> between two nodes	I <sub>max</sub>	[m]	100



## Engineering software L-force Engineer

### General information

The L-force Engineer is the engineering tool for the configuration, commissioning and diagnostics of all L-force products. With its intuitive user interface and transparent dialog boxes, the L-force Engineer has been tailored to meet the needs of the user.

The main navigation structure sorts essential functions into various transparent views. Graphical interfaces simplify the configuration and parameterisation processes for the devices. Multi-device engineering comes naturally with the L-force Engineer StateLevel and HighLevel.

The following options are available:

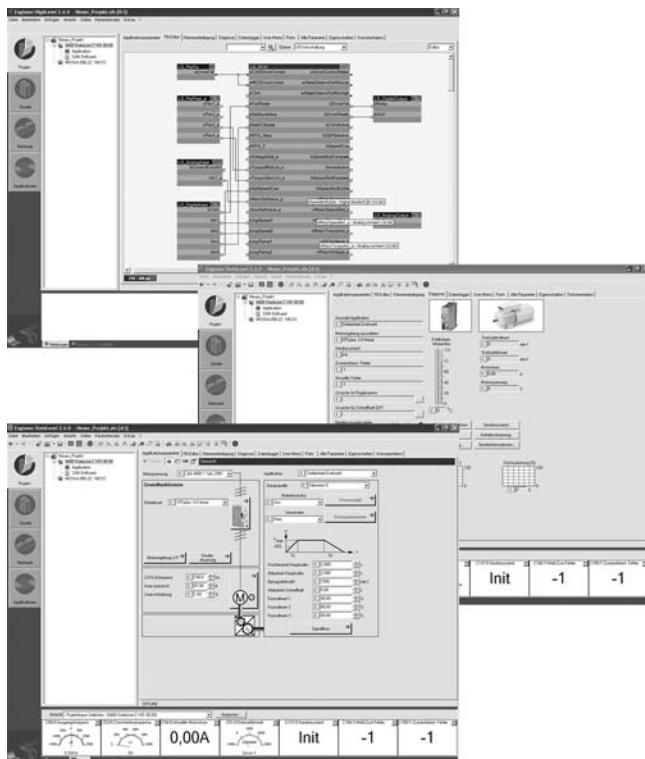
► **Engineer StateLevel**

Featuring all the necessary diagnostic functions, this product is ideal for service engineers and commissioners. Smaller projects involving up to five target systems can be implemented using this free version of the software.

► **Engineer HighLevel**

Engineer HighLevel is the full version of the software. Single user, multiple user, corporate or buyout licences are available.

In addition to the functional scope supported by the Engineer StateLevel, this version includes functions for large-scale projects. You can set up networks, interconnect communication and use the function block editor, to name but a few of the available features. The Engineer project even supports machine documentation. In short, you have access to a central source where you can find everything you need, whenever you need it – in next to no time.



User interfaces of L-force Engineer



## Functions and features

The following table describes functions and features of L-force Engineer:

Since not all functions can be accessed by every drive, the engineering software appears differently, depending on the selected drive.

Mode	L-force Engineer StateLevel, freeware	L-force Engineer HighLevel
<b>Drives and components</b>	8400 Inverter Drives Servo Drives 9400 I/O system 1000, I/O system IP20 Lenze motors User motors	8400 Inverter Drives Servo Drives 9400 I/O system 1000, I/O system IP20 Lenze motors User motors
<b>Project creation</b>	Limitation to 5 target systems	Unlimited
<b>Project documentation</b>		Stored in project
<b>Parameter setting</b>	Graphics-based Parameter list	Graphics-based Parameter list
<b>Networks and communication</b>		CAN network configuration Network configuration for ETHERNET Powerlink Communication interconnection Port editor (communication interface) Creation of machine application
<b>Configuration</b>		Function block editor
<b>Diagnostics</b> Status display	Terminal display/diagnostics overview Monitor window Logbook of all error messages Online values in graphics-based parameterisation Online/offline comparison Oscilloscope: 2-channel	Terminal display/diagnostics overview Monitor window Logbook of all error messages Online values in graphics-based parameterisation Online values in function block editor Network diagnostics Online/offline comparison Oscilloscope: 8-channel



## Data access/communication

The following table describes the communication paths of the engineering software to the connected drives. Some drives do not support all communication paths, so that some communication paths may not be possible.

Communication	
CAN	USB connection via USB system bus adapter EMF2177IB Parallel interface with system bus adapter EMF2173IB
L-force diagnostic interface	USB connection with diagnostic adapter E94AZCUS

## System requirements

### System requirements for L-force Engineer State-Level/HighLevel

The following minimum hardware and software requirements must be met in order to be able to work with the L-force Engineer:

- ▶ Microsoft®Windows® 2000 SP4 or higher + Rollup pack1 /XP 32 bit SP3 or higher / Windows 7 32 bit
- ▶ IBM-compatible PC with Intel® Pentium® processor 1.4 GHz (projects up to a maximum of 5 axes 750 MHz and higher)
- ▶ Min. 1 MB main memory (RAM), (projects up to a maximum of 5 axes min. 512 MB)
- ▶ Min. 2 GB free hard disk space
- ▶ Min. 1.024 x 768 pixels screen resolution with 256 display colours
- ▶ Mouse
- ▶ CD-ROM drive
- ▶ Free slots/ports meeting the requirements of the individual fieldbus interface module



## Overview of licences

### Single user licence

Single user licences are always supplied with the software product on CD-ROM. The purchaser is entitled to install the software product on his/her PC. Multiple installations on different PCs are not permitted.

### Multiple user licence

Some software products can be supplied with multiple user licences. When you purchase this licence, you acquire the right to install a specific software product (CD-ROM with single user licence) on the number of machines for which licences have been purchased. A legally valid single user licence must be held before multiple user licences can be purchased.

### Corporate licence

Software products with corporate licences need only be purchased once. These products may be installed on multiple machines within a company on a single site. In such cases, additional multiple user licences are not required.

### Buyout licence

A buyout licence permits multiple installations of the software within a company on a single site. Purchasers of buyout licences are also entitled to issue sublicences for machines in which Lenze devices are installed.

## Selection and order data

Mode	Features	Product key
L-force Engineer StateLevel, freeware	<ul style="list-style-type: none"> <li>▶ Order free of charge</li> <li>▶ Download via the Internet</li> <li>▶ Languages: German/English/French</li> </ul>	Download free of charge
L-force Engineer HighLevel, single user licence	<ul style="list-style-type: none"> <li>▶ CD-ROM included in scope of supply</li> <li>▶ Installation on one PC</li> <li>▶ Includes GDC, GD Loader and GD Oscilloscope</li> <li>▶ Languages: German/English/French</li> </ul>	ESPEVEHXAOEC1
L-force Engineer HighLevel, multiple user licence	<ul style="list-style-type: none"> <li>▶ CD-ROM not included in scope of supply</li> <li>▶ Multiple installations on the number of machines for which licences have been purchased</li> <li>▶ The basis is a single user licence</li> </ul>	ESPEVEHNNNML1
L-force Engineer HighLevel, corporate licence	<ul style="list-style-type: none"> <li>▶ CD-ROM not included in scope of supply</li> <li>▶ Multiple installations within a company at one location</li> <li>▶ The basis is a single user licence</li> </ul>	ESPEVEHNNNFL1
L-force Engineer HighLevel, buyout licence	<ul style="list-style-type: none"> <li>▶ CD-ROM not included in scope of supply</li> <li>▶ Multiple installations within a company at one location</li> <li>▶ Issuing of sublicences in conjunction with Lenze drives installed in a machine</li> <li>▶ The basis is a single user licence</li> </ul>	ESPEVEHNNNBL1
Upgrade from GDC to L-force Engineer HighLevel single user licence	<ul style="list-style-type: none"> <li>▶ CD-ROM included in scope of supply</li> <li>▶ Installation on one PC</li> <li>▶ The basis is a GDC licence</li> <li>▶ Languages: German/English/French</li> </ul>	ESPEGEHXA0EC1
Upgrade from GDC to L-force Engineer HighLevel multiple user licence	<ul style="list-style-type: none"> <li>▶ Multiple installations on the number of machines for which licences have been purchased</li> <li>▶ CD-ROM included in scope of supply</li> <li>▶ The basis is a GDC and Engineer HighLevel single user licence</li> </ul>	ESPEGEHNNNML1
Upgrade from GDC to L-force Engineer HighLevel company licence	<ul style="list-style-type: none"> <li>▶ CD-ROM not included in scope of supply</li> <li>▶ Multiple installations within a company at one location</li> <li>▶ The basis is a GDC and Engineer HighLevel single user licence</li> </ul>	ESPEGEHNNNFL1
Upgrade from GDC to L-force Engineer HighLevel buyout licence	<ul style="list-style-type: none"> <li>▶ CD-ROM not included in scope of supply</li> <li>▶ Multiple installations within a company at one location</li> <li>▶ Issuing of sublicences in conjunction with Lenze drives installed in a machine</li> <li>▶ The basis is a GDC and Engineer HighLevel single user licence</li> </ul>	ESPEGEHNNNBL1



## Engineering software Notes







<b>INDIA</b>	<b>MAURITIUS</b>	<b>SERBIA-MONTENEGRO</b>	<b>SYRIA</b>
Lenze Mechatronics Pvt. Ltd. Lenze Plot No. 46A, Sector-10 PCNTDA Industrial Area, Bhosari PUNE - 411 026 Phone +91-20-66318100 Telefax +91-20-66318120	Automation & Controls Engineering Ltd 3, Royal Road, Le Hochet, Terre Rouge MAURITIUS Phone +230 248 8211 Telefax +230 248 8968	see MACEDONIA	Zahabi Co. 8/5 Shouhadaa Street P.O.Box 8262 ALEPO-SYRIA Phone +963 21 21 22 23 5 Telefax +963 21 21 22 23 7
<b>Kolkata Sales office</b> 2nd Floor, 3/1 Ashton Road KOLKATA - 700020 Phone +91-33-24190490 Telefax +91-33-24190562	<b>MEXICO</b>	<b>SINGAPORE *</b>	<b>TAIWAN *</b>
New Delhi Sales office Flat No - 101, Padma Tower - II 22, Rajendra Place NEW DELHI - 110008 Phone +91-11-25812113/15 Telefax +91-11-25812114	Sales: see AMERICAS HQ	see MALAYSIA	Lenze Taiwan Representative Office 6F-1, No.136, Sec. 3, Zhongxiao E. Rd. TAIPEI City, 10655, Taiwan Phone +886 / (0)2-2721-2161 Telefax +886 / (0)2-2721-2706
<b>INDONESIA</b>	<b>MOROCCO</b>	<b>SLOVAK REPUBLIC</b>	<b>THAILAND</b>
see MALAYSIA	GUORFET G.T.D.R. Automatisation Industrielle Bd Chechchaoui Route 110 km, 11.500 No. 353-Aïn-Sâbaâ CASABLANCA Phone +212/22-35 70 78 Telefax +212/22-35 71 04	ECS Sluzby spol. s.r.o. Staromlynska 29 82106 BRATISLAVA Phone +421 2 45 25 96 06 +421 2 45 64 31 47 +421 2 45 64 31 48 Telefax +421 2 45 25 96 06	see MALAYSIA
<b>IRAN</b>	<b>NETHERLANDS *</b>	<b>SLOVENIA</b>	<b>TUNESIA</b>
Tavan Ressan Co. P.O.Box 19395-5177 No. 18, Sh. Bakhtiari Str. South sh. Ghalandari Ave. Sadr High way, TEHRAN Phone +98-(21)-2260 6766 -2260 2655 -2260 9299 Telefax +98-(21)-2200 2883	LENZE B.V., Postbus 31 01 5203 DC S-HERTOGENBOSCH Ploegweg 15 5232 BR S-HERTOGENBOSCH Phone +31 (0)73 / 64 56 50 0 Telefax +31 (0)73 / 64 56 51 0	LENZE GmbH, Asten, Avstrija Područne Čelje Kidričeva 24 3000 CELJE Phone +386 03 426 46 40 Telefax +386 03 426 46 50	AMF Industrielle Sarl Route de Grema - Km 0,2 Immeuble El Madina, Centre Bloc B - 5 ème - aptt 52 3002 SFAX Phone +216 74 403 514 Telefax +216 74 402 516
<b>ISRAEL *</b>	<b>NEW ZEALAND *</b>	<b>SOUTH AFRICA *</b>	<b>TURKEY</b>
Zeef Melcer LTD P.O.B. 10011, HAIFA BAY 26110 36 Yosef Levi St., Kiriat Bialik Phone +972-(0)4-8757037 Telefax +972-(0)4-8742172	Tranz Corporation 343 Church Street P.O. Box 12-320, Penrose AUCKLAND Phone +64 (0)9 / 63 45 51 1 Telefax +64 (0)9 / 63 45 51 8	S.A. Power Services (Pty) Ltd. Unit 14, Meadowbrook Business Estates Jacaranda Ave, Olivadele Randburg 2158, P.O.Box 1137 RANDBURG 2125 Phone +27(11) 462-8810 Telefax +27(11) 704-5775	LSF Elektrik Elektronik Makina Otomasyon Mühendislik Sanayi ve Ticaret Ltd. Şti Atatürk mah. Cumhuriyet cad. Yurt sok. No: 7 ÜMRANIYE/İSTANBUL Phone +90 (0)216 / 316 5138 pbx Telefax +90 (0)216 / 443 4277
<b>ITALY *</b>	<b>NORWAY *</b>	<b>SOUTH KOREA *</b>	<b>UKRAINE</b>
Lenze Italia S.r.l. Viale Monza 338, 20128 MILANO Phone +39 02 / 270 98.1 Telefax +39 02 / 270 98 290	Dtc- Lenze as Stallbakken 5, 2005 RAELINGEN Phone +47 / 64 80 25 10 Telefax +47 / 64 80 25 11	Lenze Representative Office No. 606, Daeryung Technatown 6th, 493-6, Gasan-dong, Geumcheon-gu, SEOUL 153-774 Phone +82 2-792-7017 Telefax +82 2-792-7018	SV Altera, Ltd. Lepse ave., 4 KIEV, 03067 Phone +38 044 496 18 88 Telefax +38 044 496 18 88
<b>JAPAN *</b>	<b>PHILIPPINES</b>	<b>SPAIN *</b>	<b>UNITED ARAB EMIRATES</b>
Miki Pulley Co., Ltd. 1-39-7 Komatsubara, Zama-city KANAGAWA 228-8577 Phone +81 (0)462 / 58 16 61 Telefax +81 (0)462 / 58 17 04	see MALAYSIA	Lenze Transmisiones, S.A. (Headquarter) Milà i Fontanals, 135-139 08205 SABADELL Barcelona Phone +34 902 02 79 04 Telefax +34 937 122 541	LPT (FZC) X4 Building No. 37 Sharjah Airport Free Zone (SAF ZONE) SHARJAH Phone +971 6 5573205 Telefax +971 6 5573206
<b>LATVIA</b>	<b>POLAND</b>	<b>LENZE Delegación Levante</b>	<b>UNITED KINGDOM/EIRE *</b>
see LITHUANIA	Lenze Polska Sp. z o.o. Ul. Roździeńskiego 188b 40-203 KATOWICE Phone +48 (0) 32 203 97 73 Telefax +48 (0) 32 781 01 80	Cullera, 73-4ºD 46035 BENIMAMET Valencia Phone +34 963 905 225 Telefax +34 963 900 647	Lenze Ltd. Fraser Road Priory Business Park BEDFORD MK44 3WH Phone +44 (0)1234 / 75 32 00 Telefax +44 (0)1234 / 75 32 20
<b>LEBANON</b>	<b>TORON</b>	<b>LENZE Delegación Madrid</b>	<b>USA *</b>
I. Network Automation s.a.l. Ground floor - United insurance building Facing Mercedes Show room Dora - High Way, BEIRUT-METEN P.O.Box 835 - Jounieh - Lebanon Phone +961-1-249562 Telefax +961-1-249563	Lenze Polska Sp. z o.o. Ul. Rydygiera 47 87-100 TORUŃ Phone +48 (0) 56 658 28 00 Telefax +48 (0) 56 645 33 56	Poema Sinfónico, 25-27, Esc.1, Plta.B, Loc.3 28054 MADRID Phone +34 915 103 341 Telefax +34 915 102 061	AMERICAS HQ Lenze Americas Corporation 630 Douglas Street UXBRIDGE, MA 01569 Phone +1 508 278 9100 Telefax +1 508 278 7873
<b>LITHUANIA</b>	<b>PORTUGAL *</b>	<b>SWEDEN *</b>	<b>Sales:</b> see Americas HQ
Lenze UAB Breslaujos g.3, 44403 KAUNAS Phone +370 37 407174 Telefax +370 37 407175	Costa Leal el Victor Electronica-Pneumatica, Lda. Rua Prof. Augusto Lessa, 269, Apart. 52053 4202-801 PORTO Phone +351-22 / 5 50 85 20 Telefax +351-22 / 5 02 40 05	Lenze Transmissioner AB P.O.Box 10 74, Attorpsgatan, Tornby Ind. 58110 LINKÖPING Phone +46 (0)13 / 35 58 00 Telefax +46 (0)13 / 10 36 23	<b>Operations:</b> Lenze AC Tech Corporation 630 Douglas Street UXBRIDGE, MA 01569 Phone +1 508 278 9100 Telefax +1 508 278 9294
<b>LUXEMBOURG *</b>	<b>ROMANIA</b>	<b>SWITZERLAND *</b>	<b>Lenze DETO Drive Systems</b> see Americas HQ
see BELGIUM	see AUSTRIA	Lenze Bachofen AG Ackerstrasse 45 8610 USTER Phone +41 (0) 43 399 14 14 Telefax +41 (0) 43 399 14 24	Vente Suisse Romande: Route de Prilly 25 1023 CRASSIER Phone +41 (0)21 / 63 72 19 00 Telefax +41 (0)21 / 63 54 76 2
<b>MACEDONIA</b>	<b>RUSSIA</b>		<b>VIETNAM</b>
Lenze Antriebstechnik GmbH Prestavništvo Skopje ul. Nikola Rusinski 3/A, 1000 SKOPJE Phone +389 2 30 90 090 Telefax +389 2 30 90 091	OOO Lenze Shchelkovskoye shosse 5 105122 MOSCOW Phone +7 495 921 3250 Telefax +7 495 921 3259		see MALAYSIA
<b>MALAYSIA</b>			
Lenze S.E.A. Sdn Bhd No. 28 Jalan PJU 3/47 Sunway Damansara, Technology Park 47810 PETALING JAYA SELANGOR DARUL EHSAN Phone +60 3 7803 1428 Telefax +60 3 7806 3728			

\* Countries connected to the free expert helpline **008000 24 hours (008000 24 46877)**

# 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."*



*"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 60 years now we have been gathering experience in various fields and implementing it consistently and rigorously in our products, motion functions and pre-configured solutions for industry."*



*"The world is our marketplace. Wherever you are in the world, we are nearby, providing you with our drive and automation solutions."*

Algeria · Argentina · Australia · Austria · Belarus · Belgium · Bosnia-Herzegovina · Brazil · Bulgaria · Canada · Central America · Chile · China · Colombia · Croatia · Czech Republic · Denmark · Egypt · Estonia · Finland · France · Germany · Greece · Hungary · Iceland · India · Indonesia · Iran · Israel · Italy · Japan · Latvia · Lebanon · Lithuania · Luxembourg · Macedonia · Malaysia · Mauritius · Mexico · Morocco · Netherlands · New Zealand · Norway · Philippines · Poland · Portugal · Romania · Russia · Serbia-Montenegro · Singapore · Slovac Republic · Slovenia · South Africa · South Korea · Spain · Sweden · Switzerland · Syria · Taiwan · Thailand · Tunesia · Turkey · Ukraine · United Arab Emirates · United Kingdom/Eire · USA · Vietnam

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).