-line Positioning System

CDE/CDB3000 Order Catalogue

Positioning and Drive Solutions
CDE3000 (2 A to 210 A)
CDB3000 (0.375 kW to 110 kW)
CDB3000-OL (0.75 kW to 90 kW)

Order Catalogue Positioning Systems CDE/CDB3000

ID no.: 1001.24B.9-00

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The drive controllers with **C-line** technology

The particular benefits to users of LTI Motion controllers lie in the expert solutions delivered for automation with electric drives and in the high level of control engineering know-how available to handle the control of a wide range of motor types. Always keeping an eye on the physics, looking to make electric drive engineering the core element of machine optimisation and automation.

It is a long-established fact in electric drives that the various control methods can complement each other effectively in handling complex automation tasks. The best method of handling complex movement tasks depends in each case very heavily on the individual requirements of the user - and on the experience and available equipment range of the supplier. Consequently, it is beneficial if all the options can be accessed easily and without changing equipment setup, or even supplier.

Our focus is on custom drive solutions with our:

- Positioning System 2 A to 210 A / 0.375 to 110 kW [CDE3000/CDB3000]
 - for asynchronous motors and
 - synchronous motors
 - with torque motors
 - with linear motors
- Inverter system 0.375 kW to 90 kW [CDB3000-OL]
 - for asynchronous motors

Servo controller and inverter based on same concept

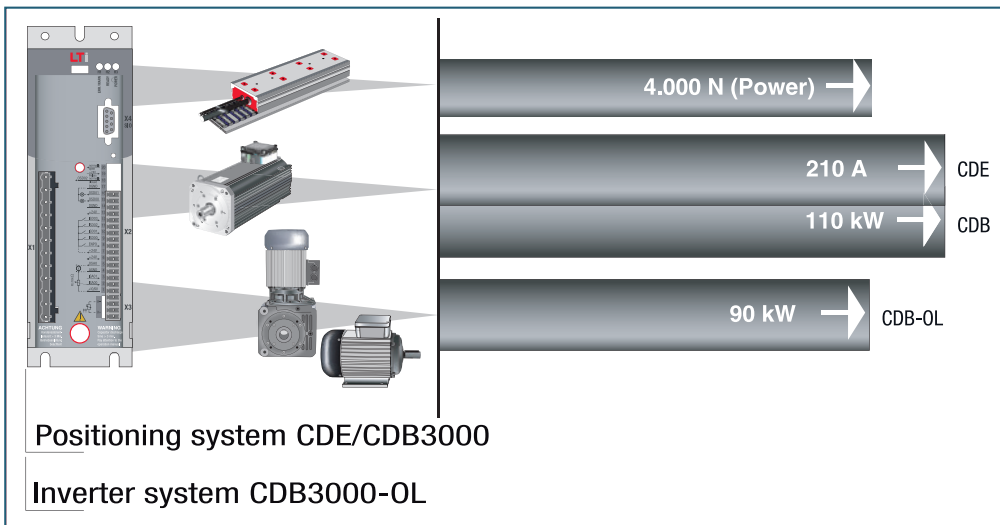
The **C-line** DRIVES are ideal for virtually any task. They include the CDE/CDB positioning controllers with the Voltage Frequency Control (VFC) method and Field Oriented Regulation (FOR) with encoder evaluation. The c-line Drives servocontrollers include a highly dynamic speed/torque/position control for high-torque motors and linear motors.

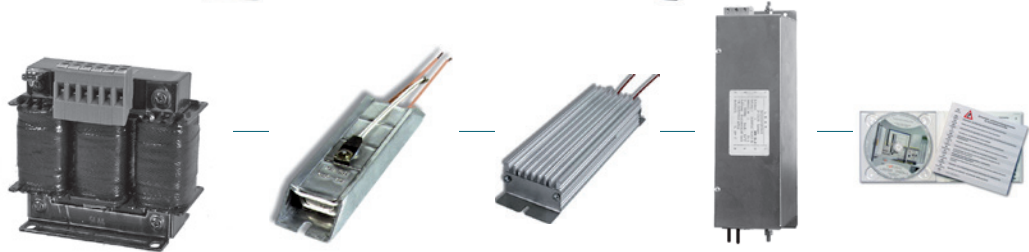
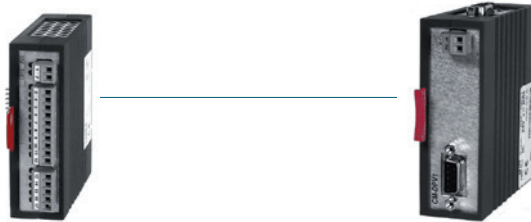
All **C-line** DRIVES drive controllers have the same basis, with a wide range of variants for specific solutions.

A platform of this kind enables rapid, cost-effective response to new developments.

Common features of **C-line** DRIVES:

- design, metal enclosure and cooling method for
 - wall mounting
 - cold plate
 - push-through heat sink
 - liquid cooling
- excellent EMC performances
- user-friendly operation with the PC tool DriveManager 3
- ease of series commissioning with KEYPAD KP300 and SmartCard
- modular networking concept
- comprehensive range of accessories and complementary components.





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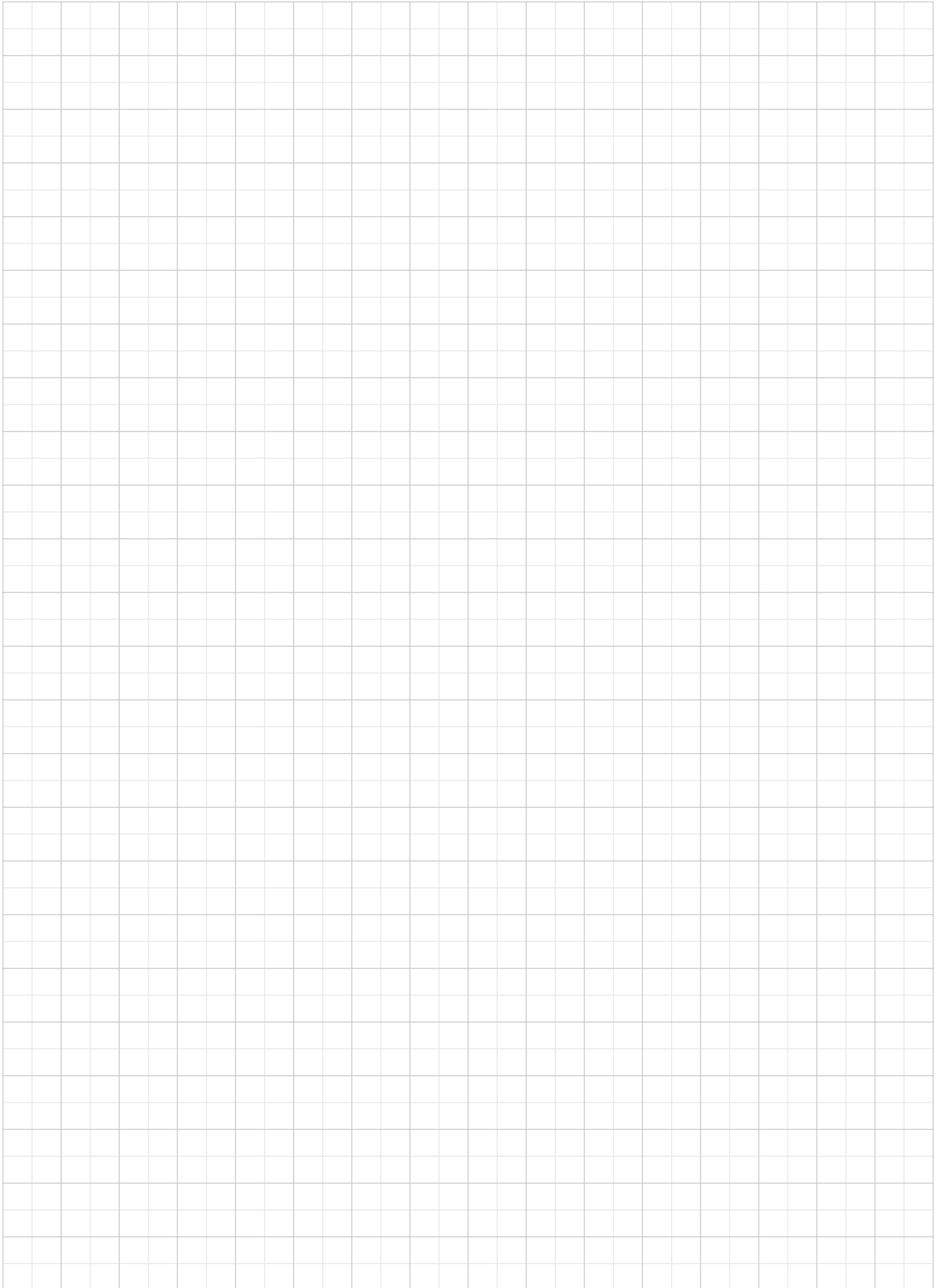
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(for details see Servomotors Ordering Catalogue) Article no.: 0814.05B.x

Space for your own notes



Features

Positioning controllers for 230 V systems:

| Size [BG] | Positioning controllers | Rec. 4-pole standard motor [kW] | Device connected load [kVA] | Rated current IN [A] |
|-----------|-------------------------|---------------------------------|-----------------------------|----------------------|
| BG1 | CDE/CDB32.003,C | 0.375 | 1.0 | 2.4 |
| BG1 | CDE/CDB32.004,C | 0.75 | 1.6 | 4.0 |
| BG2 | CDB32.008,C | 1.5 | 2.8 | 7.1 |
| BG2 | CDE/CDB32.008,W | 1.5 | 2.8 | 7.1 |

Mains voltage 1 x 230 V
Rotating field frequency 0 ... 400 Hz

Positioning controllers for 400 V systems:

| Size [BG] | Positioning controllers | Rec. 4-pole standard motor [kW] | Device connected load [kVA] | Rated current IN [A] |
|-----------|-------------------------------|---------------------------------|-----------------------------|----------------------|
| BG2 | CDE/CDB34.003,C ¹⁾ | 0.75 | 1.5 | 2.2 |
| BG2 | CDE/CDB34.005,W ¹⁾ | 1.5 | 2.8 | 4.1 |
| BG2 | CDE/CDB34.006,W ¹⁾ | 2.2 | 3.9 | 5.7 |
| BG3 | CDE/CDB34.008,W ¹⁾ | 3.0 | 5.4 | 7.8 |
| BG3 | CDE/CDB34.010,W ¹⁾ | 4.0 | 6.9 | 10 |
| BG4 | CDE/CDB34.014,W ¹⁾ | 5.5 | 9.7 | 14 |
| BG4 | CDE/CDB34.017,W ¹⁾ | 7.5 | 11.8 | 17 |
| BG5 | CDE/CDB34.024,W ¹⁾ | 11 | 16.6 | 24 |
| BG5 | CDE/CDB34.032,W ¹⁾ | 15 | 22.2 | 32 |
| BG6 | CDE/CDB34.044,W ²⁾ | 22 | 31 | 45 |
| BG6 | CDE/CDB34.058,W ²⁾ | 30 | 42 | 60 |
| BG6 | CDE/CDB34.070,W ²⁾ | 37 | 50 | 72 |
| BG7 | CDE/CDB34.088,W ²⁾ | 45 | 62 | 90 |
| BG7 | CDE/CDB34.108,W ²⁾ | 55 | 76 | 110 |
| BG7a | CDE/CDB34.140,W ²⁾ | 75 | 99 | 143 |
| BG7a | CDE/CDB34.168,W ²⁾ | 90 | 118 | 170 |
| BG6 | CDE/CDB34.044,L ²⁾ | 22 | 31 | 45 |
| BG6 | CDE/CDB34.058,L ²⁾ | 30 | 42 | 60 |
| BG6 | CDE/CDB34.070,L ²⁾ | 37 | 50 | 72 |
| BG7 | CDE/CDB34.088,L ²⁾ | 55 | 76 | 110 |
| BG7 | CDE/CDB34.108,L ²⁾ | 75 | 99 | 143 |
| BG7a | CDE/CDB34.140,L ²⁾ | 90 | 118 | 170 |
| BG7a | CDE/CDB34.168,L ²⁾ | 110 | 128 | 210 |
| BG7a | CDE/CDB34.208,L ²⁾ | 110 | 128 | 250 |

1) Mains voltage 3 x 400/460 V
2) Mains voltage 3 x 400/480 V

Rotating field frequency 0 ... 400 Hz
Cooling air temperature 45 °C (40 °C CDB34.003,Cx.x)
at power stage switching frequenc 4 kHz
40 °C at power stage switching frequenc 8 kHz
at power stage switching frequenc 12, 16 kHz with derating

Acceptance tests/Ambient conditions

CE mark

The positioning controllers CDE/CDB3000 conform to the requirements of the Low Voltage Directive 2006/95/EG and the product standard EN 61800-5-1.

The positioning controller therefore conform to the requirements for installation in a machine or plant under the terms of the Machinery Directive 2006/42/EG.

The positioning controllers CDE/CDB3000 are CE marked accordingly. The CE mark on the type plate indicates conformity with the above directives.

cUL approbation

The positioning controllers¹⁾ have been granted UL approbation. The cUL approbation is equivalent to UL and CSA approbation.

STO acceptance

The "STO" (Safe Torque Off) function integrated into the positioning drives CDE3000 and CDB3000 SH is certified in accordance with the following requirements:

- EN 61800-5-2
- EN ISO 13849-1 "PL e"
- EN 61508 / EN 62061 "SIL 3"

The acceptance was undertaken by the accredited certification body "TÜV Rheinland".

EMC acceptance tests

All positioning controllers have a sheet steel housing with an aluminium/zinc finish to enhance interference immunity (to EN 61800-3, environment classes 1 and 2).

All positioning controllers size BG1, 2, 3, 4 and 6 have built-in mains filters to limit mains-borne interference to a permitted level. This ensures compliance with the EMC Directive 2004/108/EG:

**Public low voltage system: "1st environment"
(residential areas C2) up to 10 m motor cable
length**

**Industrial low voltage system: "2nd environment"
(industrial areas C3) up to 30 m motor cable
length**

An extensive range of external mains filters is also available. For more details refer to the section "Supplementary components".

| Characteristic | | Positioning controllers | Accessories (KeyPad KP300 UM-xxxx and CM-xxxx module) |
|---------------------|--|--|---|
| Climatic conditions | in operation as per EN 61800-2, IEC 60721-3-3 class 3K3 | +5 ... 40 °C ¹⁾ at relative humidity of 5 ... 85 % without condensation | 0 ... 55 °C ¹⁾ at relative humidity of 5 ... 85 % without condensation |
| | in storage as per EN 61800-2, IEC 60721-3-1 class 1K3 and 1K4 | -25 ... +55 °C ²⁾ at relative humidity of 5 ... 95 % | |
| | in transport as per EN 61800-2, IEC 60721-3-2 class 2K3 | -25 ... +70 °C ³⁾ relative humidity 95 % at max. +40 °C | |
| Protection | Device | IP20 (terminals IP00) | |
| | Cooling method | old Plate IP20 Push-through heat sink IP54 | Convection IP20 |
| Touch protection | | BGV 3 | |
| Mounting height | | up to 1000 m above MSL, above 1000 m above MSL with power reduction, max. 2000 m above MSL | |

Vibration limit in transit, as per EN 61800-2, IEC 60721-3-2 class 2M1

| Frequency | Amplitude | Acceleration |
|------------------|----------------|---------------------|
| 2 < f < 9 Hz | 3.5 mm | not applicable |
| 9 < f < 200 Hz | not applicable | 10 m/s ² |
| 200 < f < 500 Hz | not applicable | 15 m/s ² |

Shock limit in transit, as per EN 61800-2, IEC 60721-2-2 class 2M1

Drop height of packed device max. 0.25 m

Vibration limit of system⁴⁾, as per EN 61800-2, IEC 60721-3-3 class 3M1

| Frequency | Amplitude | Acceleration |
|----------------|----------------|--------------------|
| 2 < f < 9 Hz | 0.3 mm | not applicable |
| 9 < f < 200 Hz | not applicable | 1 m/s ² |

¹⁾ The absolute humidity is limited to max. 25 g/m³. That means that the maximum values for temperature and relative air humidity stipulated in the table must not occur simultaneously.

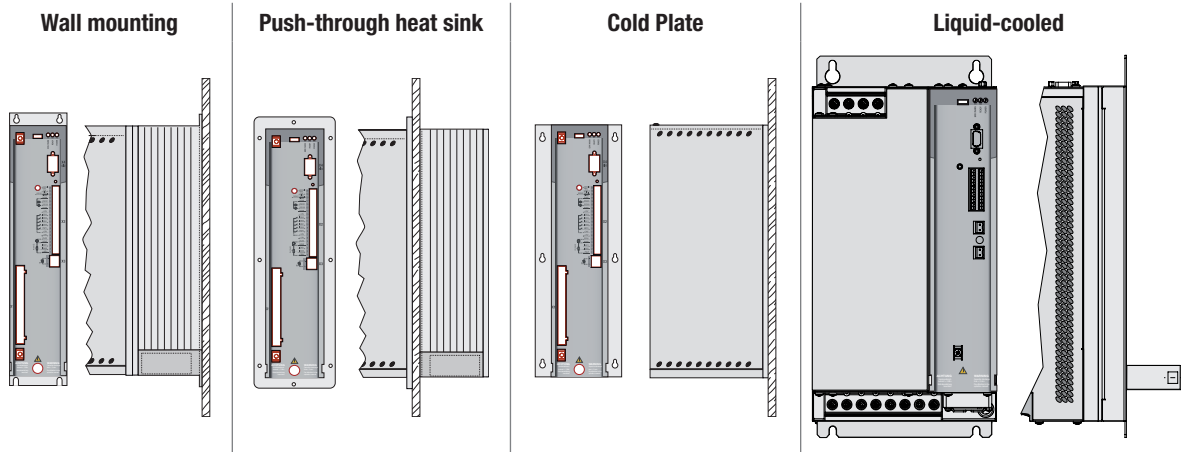
²⁾ The absolute humidity is limited to max. 29 g/m³. So the maximum values for temperature and relative air humidity stipulated in the table must not occur simultaneously.

³⁾ The absolute humidity is limited to max. 60 g/m³. This means, at 70 °C for example, that the humidity may only be max. 40%.

⁴⁾ The devices are only designed for stationary use.

Cooling methods

The positioning controllers offer two different mounting and cooling methods (example CDB3000, size 3).



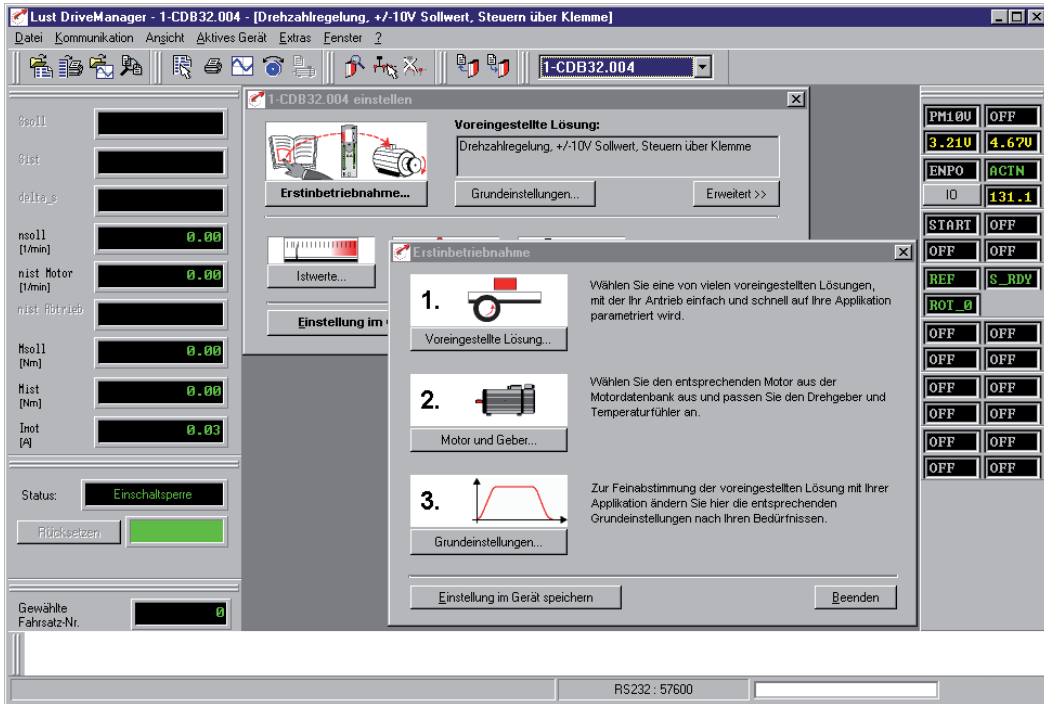
| Size | Power | Positioning controllers | Wall mounting | Push-through heat sink | Cold Plate | Liquid-cooled |
|------|-----------------------------|---|-------------------|------------------------|------------------|---------------|
| BG1 | 0.375 kW 0.75 kW | CDE/CDB32.003 CDE/CDB32.004 | YES ¹⁾ | NO | YES | NO |
| BG2 | 1.5 kW 0.75 kW 1.5 kW | CDE/CDB32.008 CDE/CDB34.003 CDE/CDB34.005 | YES | NO | YES | NO |
| BG2 | 2.2 kW | CDE/CDB34.006 | YES | NO | on request | NO |
| BG3 | 3.0 kW 4.0 kW | CDE/CDB34.008 CDE/CDB34.010 | YES | JA ²⁾ | on request | NO |
| BG4 | 5.5 kW 7.5 kW | CDE/CDB34.014 CDE/CDB34.017 | YES | YES ²⁾ | on request | NO |
| BG5 | 11 kW 15 kW | CDE/CDB34.024 CDE/CDB34.032 | YES | YES ²⁾ | on request | NO |
| BG6 | 22 kW 30 kW 37 kW | CDE/CDB34.044 CDE/CDB34.058 CDE/CDB34.070 | YES | YES ²⁾ | JA ²⁾ | YES |
| BG7 | 47 kW 55 kW | CDE/CDB34.088 CDE/CDB34.108 | YES | YES ²⁾ | NO | YES |
| BG7a | 75 kW 90 kW | CDE/CDB34.140 CDE/CDB34.168 | YES | YES ²⁾ | NO | YES |
| BG7a | 110 kW | CDE/CDB34.208 | NO | NO | NO | YES |

1) Equivalent to cold plate type with accessory heat sink HS3X.xxx
2) Protection IP54

Initial commissioning made easy

The DriveManager 3 user interface offers you a user-friendly setup and analysis tool for initial commissioning. Intuitive settings boxes and program sequences ensure rapid commissioning and precise diagnosis of the drive system. Virtually all you need to do is click through. The function screens together with the application-specific

default controller settings only show you the most important parameters. The underlying system complexity is largely concealed.



1. Preset solution

Opens a selection box where you simply click on the preset solution you require to select it. Your selection automatically configures the positioning controller. The parameters are preset for the following:

- Control point of the drive controller (e.g. I/O, field bus)
- Setpoint source (e.g. analogue, table or field bus)
- The assignment of the inputs and outputs for signal processing
- Control type (torque, RPM, position)

Using a “preset solution” makes commissioning of the positioning controller much quicker and easier. By changing individual parameters, the “preset solutions” can be adapted to the needs of the specific task. These modified “preset solutions” are stored in the device as customer-specific data sets. This helps you quickly achieve your desired motion solution.

2. Motor and encoder setting

Opens a menu which helps you to set the motor and encoder data.

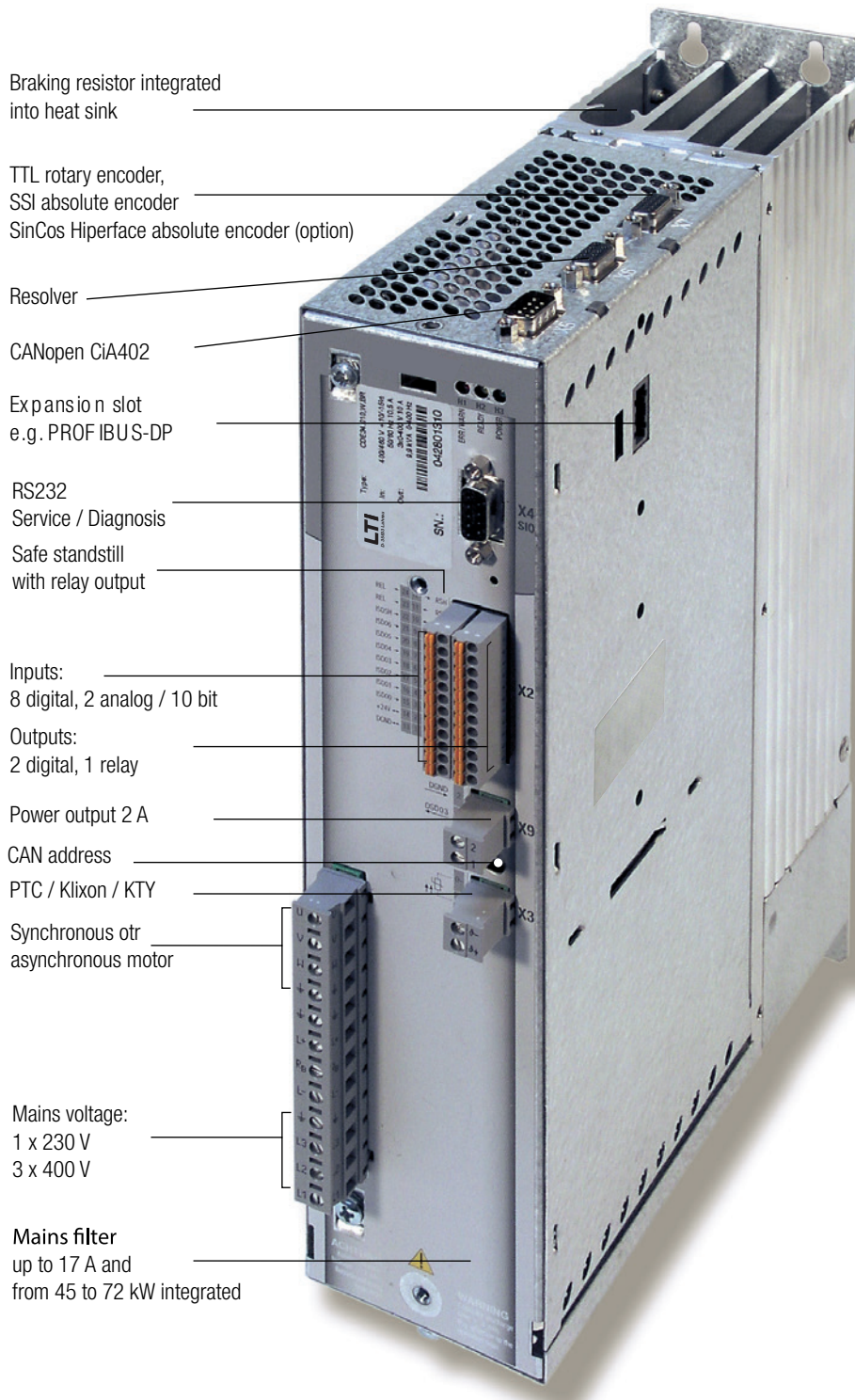
With synchronous or asynchronous motors the motor data and control loops are set using a data record that is stored in the database. With asynchronous motors, this data can also be set by the automatic identification of the connected motor.

3. Basic settings

Opens a menu in which you can fine-tune your drive.

All actions are of course documented and visualised. Other parameters such as limit values and ramps can be edited in the dialog box that is specially adapted to the preset solution. All data can then be stored in the connected device on a data carrier or simply on the SmartCard SC-XL chip card. This makes the commissioning of other controllers of the same type child’s play.

Specification CDE3000



Braking resistor integrated into heat sink

TTL rotary encoder, SSI absolute encoder SinCos Hiperface absolute encoder (option)

Resolver

CANopen CiA402

Expansion slot e.g. PROFIBUS-DP

RS232 Service / Diagnosis

Safe standstill with relay output

Inputs: 8 digital, 2 analog / 10 bit

Outputs: 2 digital, 1 relay

Power output 2 A

CAN address

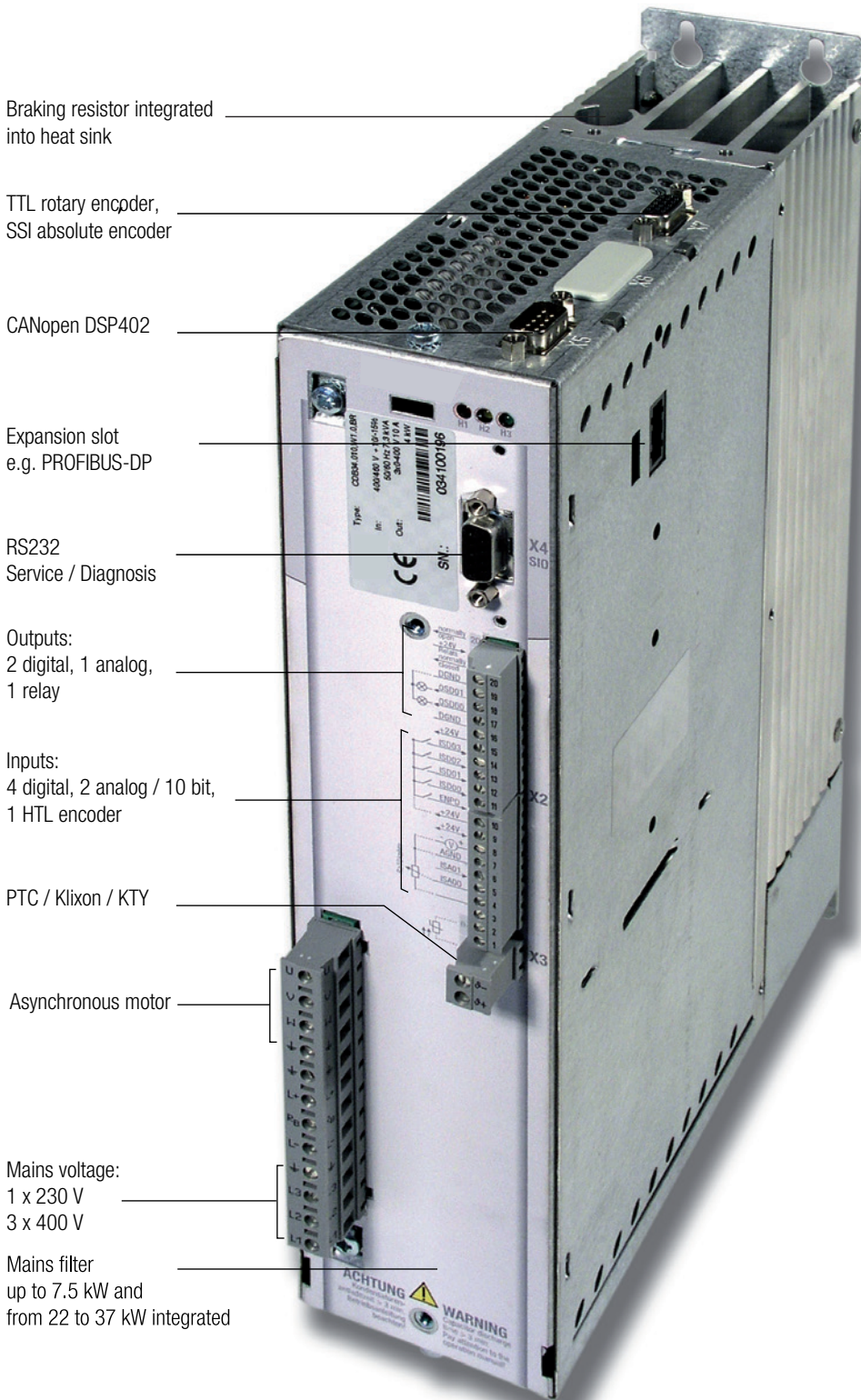
PTC / Klixon / KTY

Synchronous or asynchronous motor

Mains voltage: 1 x 230 V 3 x 400 V

Mains filter up to 17 A and from 45 to 72 kW integrated

Specification CDB3000



Braking resistor integrated into heat sink

TTL rotary encoder, SSI absolute encoder

CANopen DSP402

Expansion slot e.g. PROFIBUS-DP

RS232 Service / Diagnosis

Outputs: 2 digital, 1 analog, 1 relay

Inputs: 4 digital, 2 analog / 10 bit, 1 HTL encoder

PTC / Klixon / KTY

Asynchronous motor

Mains voltage: 1 x 230 V 3 x 400 V

Mains filter up to 7.5 kW and from 22 to 37 kW integrated

1

ECOpos — Positioning at its finest

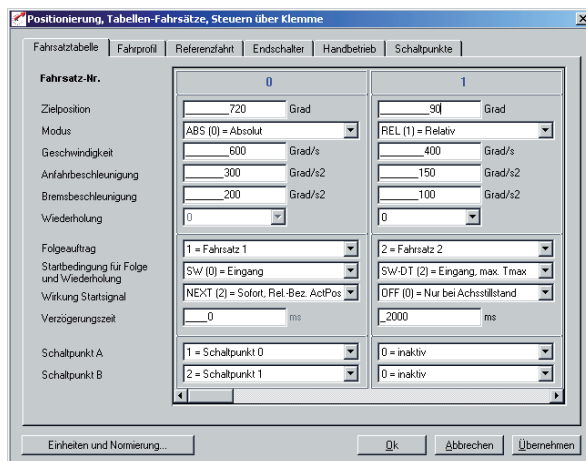
The CDE/CDB3000 drive controllers are optimized for the positioning of electric drives. Alternatively, operation of the drive can also be speed or torque controlled.

The preset solutions provide a wide range of options for setting the motion profile.

Motion set table with smart follow-up job logic

16 motion sets are stored in the controller in the form of table. These contain the target position, speed, startup and braking acceleration, positioning mode and the conditions for executing a follow-up job. This efficient follow-up job logic ensures the programming of automated event-controlled positioning sequences with functions such as:

- Multiple repetition of the motion set
- Time and/or signal-controlled requesting of the follow-up job
- Different position references of the follow-up job with relative positioning



Four switching points can be defined. Flags are set, reset or inverted at the programmed positions. The switching position reference is variable:

Absolute position reference

Relative to the start or end position of the driving set

Two switching points each can be assigned to a motion set. This means that up to 32 different switching points are theoretically possible.

Field bus motion profile selection with CANopen CiA402 or PROFIBUS

The built-in CANopen interface offers an inexpensive networking option. CANopen guarantees trouble-free interoperability with other network users by supporting CANopen CiA402 compliant triggers and

- Homing Mode,
- Profile Positioning Mode and
- Profile Velocity Mode.

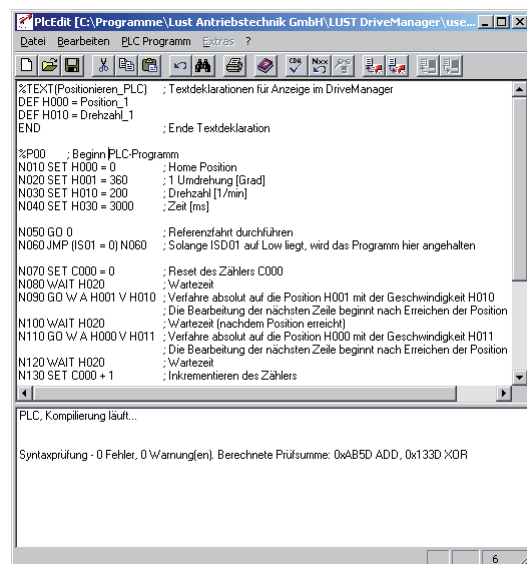
PDO control information is typically processed within 1 ms, making for very short response times.

With **PROFIBUS** networking, specially matched EasyDrive profiles are used for communications.

Motion profile with PLCmotion for complex motion automation

Should the programmable device functionality not be enough to solve the motion task, then a user-programmable software kernel is available to maximise the application's capability. Programming is done with a simple proprietary command syntax. The syntax is optimised for real time access to all internal device interfaces, process variables and parameters, so creating a wide selection of new control and monitoring options. The most complicated positioning sequences can be programmed with an effective positioning command set.

- Commands for absolute and relative positioning and endless traversing
- Execution of reference traverses
- Rapid hold function
- Changeover to angle-synchronous operation (electronic gearbox) with overlaid relative positions
- Output power stage on/off



The program stored in the controller is built just like a normal parameter, so when the device parameters are transferred the program is sent automatically with the other parameters, thereby significantly simplifying serial commissioning.

High dynamics and superior control quality

At the heart of the software is the position profile generator that computes the a smooth and time-optimised setpoint trajectory for the position controller from a selected motion set. The fact that the setpoint trajectory is generated online means that a new modified motion set can be transferred and started during ongoing positioning inside just 1 ms.

- Short cycle times thanks to a setup time of just 1 ms
- Absolute or relative positioning, endless traversing
- Linear acceleration and braking ramps or with adjustable jolt limiting for motions that are easy on the mechanics
- Jolt-limited changes to the motion job in just 1 ms even during ongoing positioning

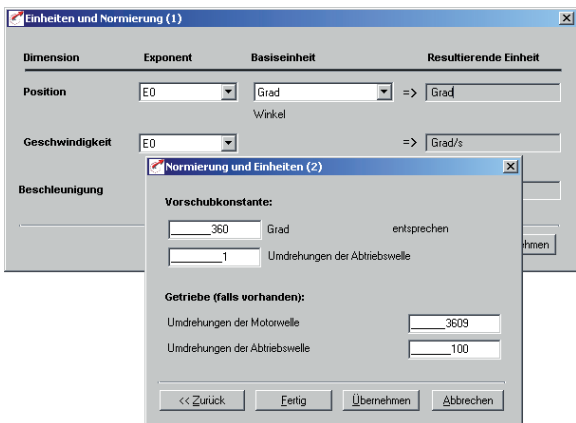
The position control loop with its sampling frequency of 4 kHz (250 µs) and an overlaid pilot control structure creates optimum dynamic characteristics and a high control quality.

Comprehensive basic functions for positioning

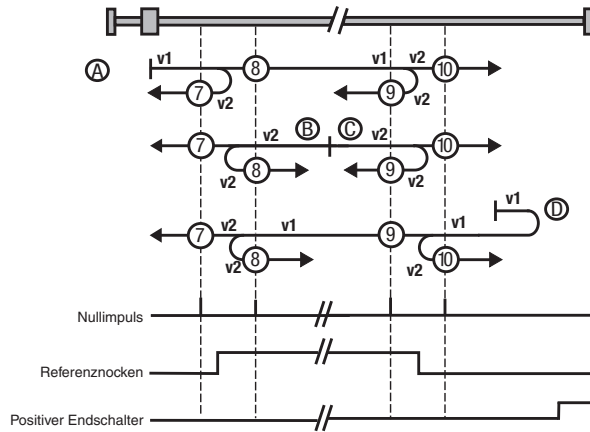
Positioning is based on comprehensive basic functions in the hardware or software which can be used independently of a preset solution.

Application-specific units such as mm, degrees or even user-specific units allow settings in your own language.

Correction-free calculation of uneven gear ratios for rotary tables or indexing conveyors.



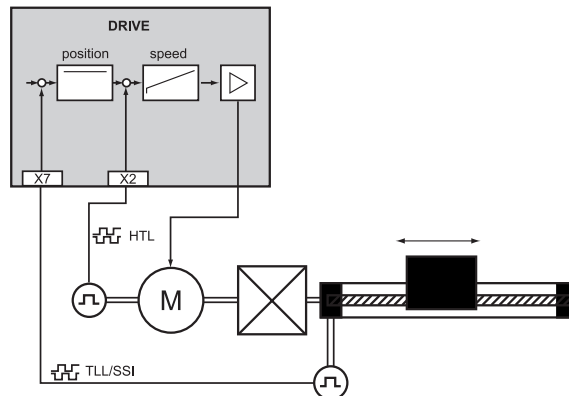
- Different types of reference traverses, including with continuous referencing for slip-prone systems such as conveyor belt.



- Rotary table function for the shortest-path positioning of rotary axes
- Limit switch logic
- Jog mode for manually controlling the drive
- Electronic cam controller with 16 cams for controlling connected machine peripherals

Two standard encoder interfaces create many different options for cost optimising or enhancing positioning quality.

- Evaluation of two position measuring systems for pin-point positioning with loose mechanisms.



- Evaluation of absolute encoders for positioning without referencing
- Configuring with just a single encoder on the output shaft when there is a fixed ratio between the input and output shafts
- Encoder connection as master encoder input

Services

LTI Motion GmbH offers a wide range of information on the Internet. Whether you are looking for more detailed technical information on our products or on project planning and design, or want to contact your nearest LTI Motion representative - just visit our website at

www.lti-motion.com

Software update service

As part of our product maintenance function we are continuously improving the quality of the drive system. Our "software update service" provides you with information on new releases and enhancements of the various firmware versions.

This information, together with the latest firmware, is available for downloading on our Info Server.

Design-in

Professional project management that keeps you to within deadlines and budgets is an important element of our joint success. The sooner you get to market with your new solution the better. That's why we can support you in

- analysing requirements
- planning the drive design
- creating the functional specification
- total cost analysis
- project management

Logistics

To make ordering a routine exercise and reduce or even eliminate unnecessary formalities, the entire process is co-ordinated, from planning through ordering to spare parts supplies.

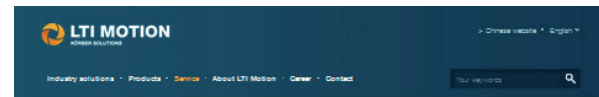
After-sales

You can call on our Service and Support wherever and whenever you need it. With our flexibility, fast response times, superior technical know-how and extensive user experience, we can offer a wide range of services, including

- on-site commissioning
- advice and training
- repairs/service concept

Downloads:

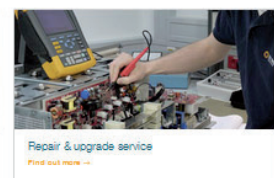
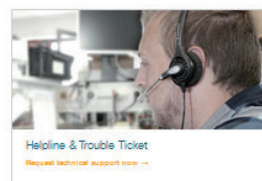
You will find detailed information on our products in the "Downloads" section of our website.



Support & Service

Our service concept for your success

The support and service at LTI Motion will support you across the entire life cycle of your drive and automation solution. Our team of specialists stand by your side with competent support & servicing from planning and design to start-up and maintenance - we are committed to individual service for all concerns.



Helpline

Our Helpline can assist you with:

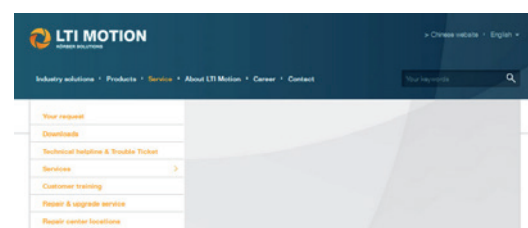
- Telephone commissioning of standard products and systems.
- Evaluating error and diagnostic displays.
- Locating and dealing with repeatable faults.
- Software Updates.

To contact the Helpline:

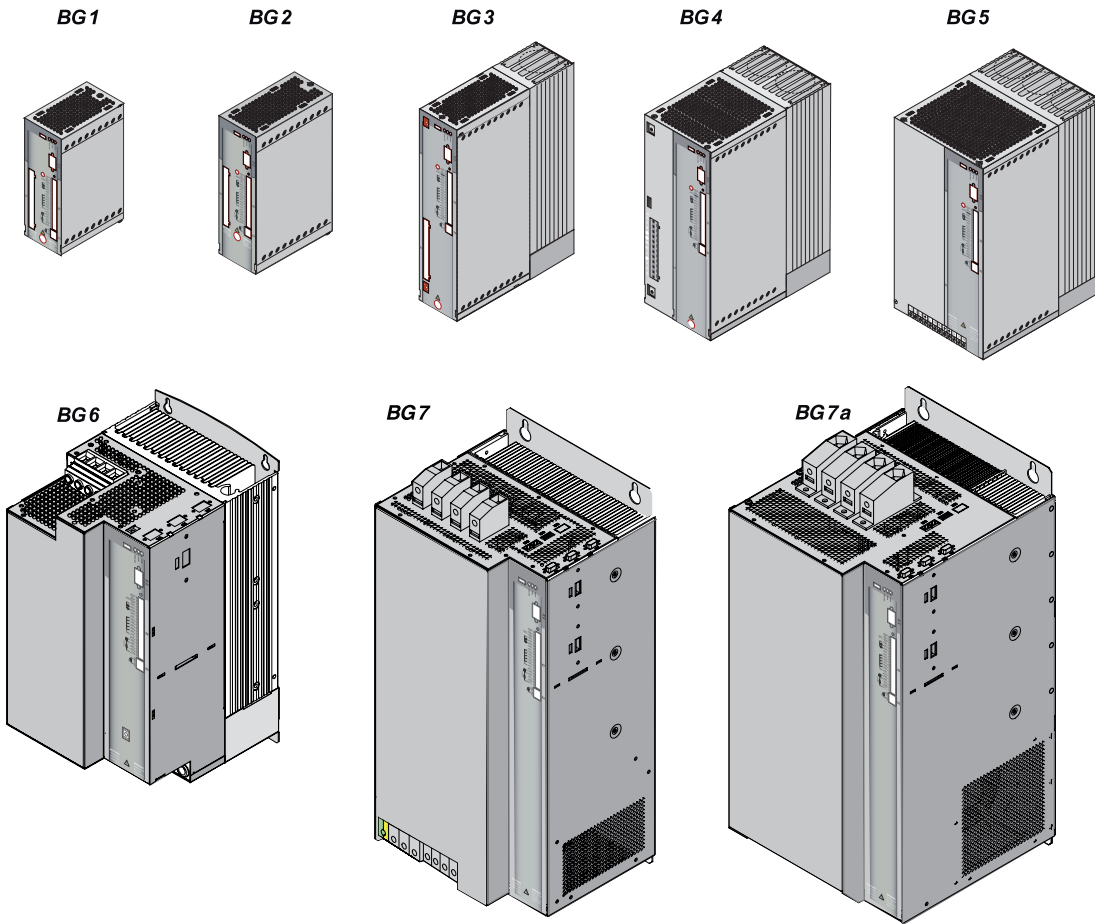
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Telephone: +49 (0) 6441 966-180
E-mail: helpline@lti-motion.com

Internet: www.lti-motion.com
▶ Support & Service
▶ Trouble Ticket



Positioning controllers 0.375 to 110 kW / 2.4 to 210 A

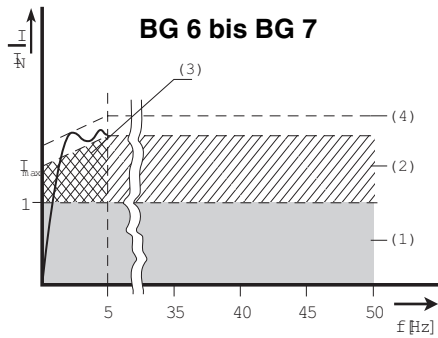
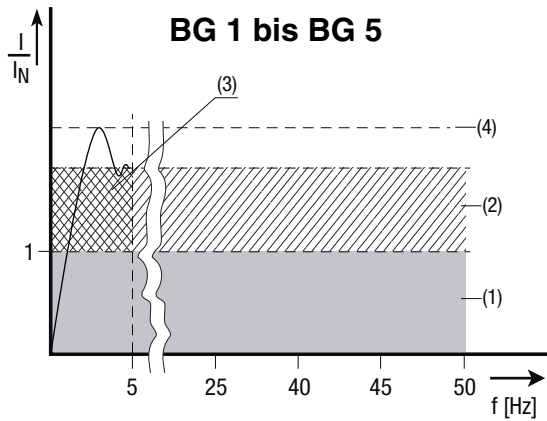


| CDE/CDB3000 Sizes | BG1 | BG2 | BG2 | BG3 | BG4 | BG5 | BG6 | BG7 | BG7a |
|----------------------------------|---------------------|--------|-----------------------------|-------------------|------------------|----------------|---------------------------|---------------------------------------|--|
| CDE3000 Power classes | 2.4 A 4.3 A | 7.1 A | 2.2 A 4.1 A 5.7 A | 7.8 A 10 A | 14 A 17 A | 24 A 32 A | 45 A 60 A 72 A | 90 A 110 A 143 A ¹⁾ | 143 A 170 A 210 A ¹⁾ |
| CDB3000 Power classes | 0.375 kW 0.75 kW | 1.5 kW | 0.75 kW 1.5 kW 2.2 kW | 3.0 kW 4.0 kW | 5.5 kW 7.5 kW | 11 kW 15 kW | 22 kW 30 kW 37 kW | 47 kW 55 kW 75 kW ¹⁾ | 75 kW 90 kW 110 kW ¹⁾ |
| Mains voltage | 1 x 230 V | | | 3 x 400 V / 460 V | | | 3 x 400 V / 460 V / 480 V | | |

1)) Only in liquid-cooled variant

Current capacity of positioning controllers

The maximum permissible inverter output current and the peak current are dependent on the mains voltage, the motor cable length, the power stage switching frequency and the ambient temperature. If service conditions change, then the maximum permissible current capacity of the positioning controllers also changes. Refer to the following charts and tables for details of which current load is permissible under which changed service conditions.



- (1) Continuous
- (2) Intermittent* > 5 Hz rotating field frequency
- (3) Intermittent 0 to 5 Hz rotating field frequency
- (4) Pulse mode

Positioning controllers 45 to 210 A (22 to 110 kW)
 $I/N = 2.1$ at 4/8/12/16 kHz

$$I_{\text{eff}} = \frac{1}{T} \cdot \sum_{i=1}^n I_i^2 \cdot t_i$$

Positioning controllers for 230 V systems:

| Servocontrollers | Switching frequency of power stage [kHz] | Ambient temperature [°C] | Rated current at 230 V [A _{eff}] | Peak current [A _{eff}] ³⁾ | | |
|--|--|--------------------------|---|--|-----------------------------------|----------------------------|
| | | | | for intermittent operation 0 to 5 Hz | for intermittent operation > 5 Hz | for time ⁴⁾ [s] |
| CDE/CDB 32.003, Cx.x (0.375 kW) | 4 | 45 | 2.4 | 4.3 | 4.3 | 30 |
| | 8 | 40 | 2.4 | 4.3 | 4.3 | |
| | 12 | 40 | 2.1 | 3.75 | 3.75 | |
| | 16 | 40 | 1.8 | 3.2 | 3.2 | |
| CDE/CDB 32.004, Cx.x ¹⁾ (0.75 kW) | 4 | 45 | 4 | 7.2 | 7.2 | 30 |
| | 8 | 40 | 4 | 7.2 | 7.2 | |
| | 12 | 40 | 3.5 | 5.7 | 6.3 | |
| | 16 | 40 | 3 | 5.0 | 5.4 | |
| CDB 32.008, Cx.x ¹⁾ CDE/CDB 32.008, Wx.x (1.5 kW) | 4 | 40 | 7.1 | 12.8 | 12.8 | 30 |
| | 8 | 40 | 7.1 | 12.8 | 12.8 | |
| | 12 | 40 | 6.3 | 10 | 11.35 | |
| | 16 | 40 | 5.5 | 8 | 9.9 | |

1) with heat sink HS3... or additional cooling surface
 3) for 230 V systems
 4) Shut-off as per I² x t characteristic

Motor cable length 10 m
 Mounting height 1000 m above MSL
 End-to-end mounting

Positioning controllers for 400/460 V systems, variant “W”:

| Servo-controller | Switching frequency of power stage | Ambient temperature | Rated current | | Peak current [A _{eff}] ³⁾ | | | |
|-------------------------------------|------------------------------------|---------------------|---------------------|---------------------|---|------|----------------------------|------------------------|
| | | | at 400 V | at 460 V | at rotating field frequency rising in linear mode 0 to 5 Hz | | for intermittent operation | for time ⁴⁾ |
| | | | [A _{eff}] | [A _{eff}] | 0 Hz | 5 Hz | > 5 Hz | [s] |
| CDE/CDB 34.003,Cx.x (0.75 kW) | 4 | 45 | 2.2 | 2.2 | 4 | 4 | 4 (1.8 I _N) | 30 |
| | 8 | 40 | 2.2 | 2.2 | 4 | 4 | 4 (1.8 I _N) | |
| | 12 | 40 | 1.6 | 1.6 | 2,9 | 2,9 | 2,9 (1.8 I _N) | |
| | 16 | 40 | 1.0 | 1.0 | 1.8 | 1.8 | 1.8 (1.8 I _N) | |
| CDE/CDB 34.005,Wx.x (1.5 kW) | 4 | 45 | 4.1 | 4.1 | 7.4 | 7.4 | 7.4 (1.8 I _N) | 30 |
| | 8 | 40 | 4.1 | 3.6 | 7.4 | 7.4 | 7.4 (1.8 I _N) | |
| | 12 | 40 | 3.2 | 2.4 | 5.7 | 5.7 | 5.7 (1.8 I _N) | |
| | 16 | 40 | 2.4 | 1.8 | 4.3 | 4.3 | 4.3 (1.8 I _N) | |
| CDE/CDB 34.006,Wx.x (2.2 kW) | 4 | 45 | 5.7 | 5.7 | 10.3 | 10.3 | 10.3 (1.8 I _N) | 30 |
| | 8 | 40 | 5.7 | 5.7 | 10.3 ¹⁾ /7.8 ²⁾ | 10.3 | 10.3 (1.8 I _N) | |
| | 12 | 40 | 4.15 | 3.1 | 7.5 ¹⁾ /6.4 ²⁾ | 7.5 | 7.5 (1.8 I _N) | |
| | 16 | 40 | 2.6 | 1,9 | 4.7 | 4.7 | 4.7 (1.8 I _N) | |
| CDE/CDB 34.008,Wx.x (3 kW) | 4 | 45 | 7.8 | 7.8 | 14 | 14 | 14 (1.8 I _N) | 30 |
| | 8 | 40 | 7.8 | 7.8 | 14 | 14 | 14 (1.8 I _N) | |
| | 12 | 40 | 6.4 | 4.8 | 11 | 11 | 11 (1.8 I _N) | |
| | 16 | 40 | 5.0 | 3.7 | 7.8 | 9 | 9 (1.8 I _N) | |
| CDE/CDB 34.010,Wx.x (4 kW) | 4 | 45 | 10 | 10 | 18 | 18 | 18 (1.8 I _N) | 30 |
| | 8 | 40 | 10 | 8.8 | 18 | 18 | 18 (1.8 I _N) | |
| | 12 | 40 | 8.1 | 6.0 | 13 | 14.5 | 14.5 (1.8 I _N) | |
| | 16 | 40 | 6.2 | 4.6 | 7.8 | 11 | 11 (1.8 I _N) | |
| CDE/CDB 34.014,Wx.x (5.5 kW) | 4 | 45 | 14 | 14 | 25 | 25 | 25 (1.8 I _N) | 30 |
| | 8 | 40 | 14 | 12.2 | 25 | 25 | 25 (1.8 I _N) | |
| | 12 | 40 | 10.3 | 7.7 | 18 | 18 | 18 (1.8 I _N) | |
| | 16 | 40 | 6.6 | 4,9 | 12 | 12 | 12 (1.8 I _N) | |
| CDE/CDB 34.017,Wx.x (7.5 kW) | 4 | 45 | 17 | 17 | 31 | 31 | 31 (1.8 I _N) | 30 |
| | 8 | 40 | 17 | 13.5 | 31 | 31 | 31 (1.8 I _N) | |
| | 12 | 40 | 12.5 | 9.3 | 23 | 23 | 23 (1.8 I _N) | |
| | 16 | 40 | 8.0 | 6.0 | 14 | 14 | 14 (1.8 I _N) | |
| CDE/CDB 34.024,Wx.x (11 kW) | 4 | 45 | 24.0 | 24 | 43 | 43 | 43 (1.8 I _N) | 30 |
| | 8 | 40 | 24.0 | 24 | 43 | 43 | 43 (1.8 I _N) | |
| | 12 | 40 | 19.5 | 14 | 35 | 35 | 35 (1.8 I _N) | |
| | 16 | 40 | 15 | 11 | 27 | 27 | 27 (1.8 I _N) | |
| CDE/CDB 34.032,Wx.x (15 kW) | 4 | 45 | 32 | 32 | 58 | 58 | 58 (1.8 I _N) | 30 |
| | 8 | 40 | 32 | 28 | 58 | 58 | 58 (1.8 I _N) | |
| | 12 | 40 | 26 | 20 | 39 | 47 | 47 (1.8 I _N) | |
| | 16 | 40 | 20 | 15 | 32 | 36 | 36 (1.8 I _N) | |

1) = CDE
 2) = CDB
 3) for 400 V systems
 4) Shut-off as per I² x t characteristic

Motor cable length 10 m
 Mounting height 1000 m above MSL
 End-to-end mounting

Positioning controllers for 400/480 V systems, variant "W":

| Servo-controller | Switching frequency of power stage | Ambient temperature | Rated current | | Peak current [A _{eff}] ³⁾ | | | |
|-----------------------------------|------------------------------------|--|---------------------|---------------------|---|----------------------------------|----------------------------|-----------------------------------|
| | | | at 400 V | at 460 V | at rotating field frequency rising in linear mode 0 to 5 Hz | | for intermittent operation | for time ⁴⁾ |
| | [kHz] | °C | [A _{eff}] | [A _{eff}] | 0 Hz | 5 Hz | > 5 Hz | [s] |
| CDE34.044,Wx.x (22 kW) | 4 | 45 | 45 | 41 | 90 | 90 | 90 (2.0 I _N) | 3 ⁵⁾ /10 ⁶⁾ |
| | 8 | 40 | 45 | 41 | 90 | 90 | 90 (2.0 I _N) | |
| | 12 | 40 | 45 | 41 | 90 | 90 | 90 (2.0 I _N) | |
| | 16 | 40 | 42 | 38 | 84 | 84 | 84 (2.0 I _N) | |
| CDE34.058,Wx.x (30 kW) | 4 | 45 | 60 | 54 | 120 | 120 | 120 (2.0 I _N) | 3 ⁵⁾ /10 ⁶⁾ |
| | 8 | 40 | 60 | 54 | 120 | 120 | 120 (2.0 I _N) | |
| | 12 | 40 | 58 | 52 | 116 | 116 | 116 (2.0 I _N) | |
| | 16 | 40 | 42 | 38 | 84 | 84 | 84 (2.0 I _N) | |
| CDE34.070,Wx.x (37 kW) | 4 | 45 | 72 | 65 | 144 | 144 | 144 (2.0 I _N) | 3 ⁵⁾ /10 ⁶⁾ |
| | 8 | 40 | 72 | 65 | 144 | 144 | 144 (2.0 I _N) | |
| | 12 | 40 | 58 | 52 | 116 | 116 | 116 (2.0 I _N) | |
| | 16 | 40 | 42 | 38 | 84 | 84 | 84 (2.0 I _N) | |
| CDB34.044,Wx.x (22 kW) | 4 | 45 | 45 | 41 | 68 | 67.5 | 67 (1.5 I _N) | 30 ⁵⁾ |
| | 8 | 40 | 45 | 41 | 45 | 45 | 67 (1.5 I _N) | |
| | 12 | 40 | 36 | 33 | 36 | 36 | 54 (1.5 I _N) | |
| | 16 | 40 | 27 | 24 | 27 | 27 | 41 (1.5 I _N) | |
| CDB34.058,Wx.x (30 kW) | 4 | 45 | 60 | 54 | 90 | 90 | 90 (1.5 I _N) | 30 ⁵⁾ |
| | 8 | 40 | 60 | 54 | 60 | 60 | 90 (1.5 I _N) | |
| | 12 | 40 | 48 | 43 | 48 | 48 | 72 (1.5 I _N) | |
| | 16 | 40 | 36 | 33 | 36 | 36 | 54 (1.5 I _N) | |
| CDB34.070,Wx.x (37 kW) | 4 | 45 | 72 | 65 | 108 | 108 | 108 (1.5 I _N) | 30 |
| | 8 | 40 | 72 | 65 | 72 | 72 | 108 (1.5 I _N) | |
| | 12 | 40 | 58 | 52 | 58 | 58 | 87 (1.5 I _N) | |
| | 16 | 40 | 42 | 38 | 42 | 42 | 63 (1.5 I _N) | |
| CDE/CDB 34.088,Wx.x (47 kW) | 4 | 45 | 90 | 81 | 170 | 180 | 180 (2.0 I _N) | 30 |
| | 8 | 40 | 90 | 81 | 134 | 180 | 180 (2.0 I _N) | |
| | 12 | 40 | 90 | 81 | 107 | 144 | 144 (1.6 I _N) | |
| | 16 | 40 | 72 | 65 | 86 | 115 | 115 (1.6 I _N) | |
| CDE/CDB 34.108,Wx.x (55 kW) | 4 | 45 | 110 | 99 | 170 | 220 | 220 (2.0 I _N) | 30 |
| | 8 | 40 | 110 | 99 | 134 | 165 | 165 (1.5 I _N) | |
| | 12 | 40 | 90 | 81 | 107 | 144 | 144 (1.6 I _N) | |
| | 16 | 40 | 72 | 65 | 86 | 115 | 115 (1.6 I _N) | |
| CDE/CDB 34.140,Wx.x (75 kW) | 4 | 45 | 143 | 129 | 270 | 286 | 286 (2.0 I _N) | 30 |
| | 8 | 40 | 143 | 129 | 215 | 215 | 215 (1.5 I _N) | |
| | 12 | 40 | 115 | 104 | 172 | 172 | 172 (1.5 I _N) | |
| | 16 | 40 | 92 | 83 | 138 | 138 | 138 (1.5 I _N) | |
| CDE/CDB 34.168,Wx.x (90 kW) | 4 | 45 | 170 | 153 | 190 | 315 | 315 (1.9 I _N) | 10 |
| | 8 | 40 | 170 | 153 | 151 | 220 | 220 (1.3 I _N) | |
| | 12 | 40 | 136 | 122 | 121 | 164 | 164 (1.2 I _N) | |
| | 16 | 40 | 109 | 98 | 97 | 131 | 131 (1.2 I _N) | |
| 1) = CDE | | 4) Shut-off as per I ² x t characteristic | | | | Motor cable length 10 m | | |
| 2) = CDB | | 5) Under pre-load of max. 70% | | | | Mounting height 1000 m above MSL | | |
| 3) for 400 V systems | | 6) At heat sink temperaturer < 45 °C | | | | End-to-end mounting | | |

Positioning controllers for 400/480 V systems, variant “L”:

| Servo-controller | Switching frequency of power stage | Ambient temperature | Rated current | | Peak current [A _{eff}] ³⁾ | | | |
|----------------------------------|------------------------------------|---------------------|---------------------|---------------------|---|------|----------------------------|------------------------|
| | | | at 400 V | at 460 V | at rotating field frequency rising in linear mode 0 to 5 Hz | | for intermittent operation | for time ⁴⁾ |
| | [kHz] | °C | [A _{eff}] | [A _{eff}] | 0 Hz | 5 Hz | > 5 Hz | [s] |
| CDB.x4.044,L (22 kW) | 4 | 45 | 45 | 41 | 67.5 | 67.5 | 67.5 (1.5 I _N) | 60 |
| | 8 | 40 | 45 | 41 | 45 | 45 | 67.5 (1.5 I _N) | |
| | 12 | 40 | 36 | 41 | 36 | 36 | 54 (1.5 I _N) | |
| | 16 | 40 | 27 | 24 | 27 | 27 | 41 (1.5 I _N) | |
| CDE.x4.044,L (22 kW) | 4 | 45 | 45 | 41 | 90 | 90 | 90 (2.0 I _N) | 30 |
| | 8 | 40 | 45 | 41 | 90 | 90 | 90 (2.0 I _N) | |
| | 12 | 40 | 45 | 41 | 90 | 90 | 90 (2.0 I _N) | |
| | 16 | 40 | 42 | 38 | 84 | 84 | 84 (2.0 I _N) | |
| CDB.x4.058,L (30 kW) | 4 | 45 | 60 | 54 | 90 | 90 | 90 (1.5 I _N) | 60 |
| | 8 | 40 | 60 | 54 | 60 | 60 | 90 (1.5 I _N) | |
| | 12 | 40 | 48 | 43 | 48 | 48 | 72 (1.5 I _N) | |
| | 16 | 40 | 36 | 33 | 36 | 36 | 54 (1.5 I _N) | |
| CDE.x4.058,L (30 kW) | 4 | 45 | 60 | 54 | 120 | 120 | 120 (2.0 I _N) | 30 |
| | 8 | 40 | 60 | 54 | 120 | 120 | 120 (2.0 I _N) | |
| | 12 | 40 | 58 | 52 | 116 | 116 | 116 (2.0 I _N) | |
| | 16 | 40 | 42 | 38 | 84 | 84 | 84 (2.0 I _N) | |
| CDB.x4.070,L (37 kW) | 4 | 45 | 72 | 65 | 108 | 108 | 108 (1.5 I _N) | 60 |
| | 8 | 40 | 72 | 65 | 72 | 72 | 108 (1.5 I _N) | |
| | 12 | 40 | 58 | 52 | 58 | 58 | 87 (1.5 I _N) | |
| | 16 | 40 | 42 | 38 | 42 | 42 | 63 (1.5 I _N) | |
| CDE.x4.070,L (37 kW) | 4 | 45 | 72 | 65 | 144 | 144 | 144 (2.0 I _N) | 30 |
| | 8 | 40 | 72 | 65 | 144 | 144 | 144 (2.0 I _N) | |
| | 12 | 40 | 58 | 52 | 116 | 116 | 116 (2.0 I _N) | |
| | 16 | 40 | 42 | 38 | 84 | 84 | 84 (2.0 I _N) | |
| CDB/CDE. x4.088,L (55 kW) | 4 | 45 | 110 | 99 | 205 | 220 | 220 (2.0 I _N) | 30 |
| | 8 | 45 | 110 | 99 | 165 | 187 | 187 (1.7 I _N) | |
| | 12 | 45 | 110 | 99 | 132 | 165 | 165 (1.5 I _N) | |
| | 16 | 45 | 90 | 81 | 106 | 135 | 135 (1.5 I _N) | |
| CDB/CDE. x4.108,L (75 kW) | 4 | 45 | 143 | 129 | 230 | 286 | 286 (2.0 I _N) | 30 |
| | 8 | 45 | 143 | 129 | 190 | 215 | 215 (1.5 I _N) | |
| | 12 | 45 | 114 | 103 | 152 | 172 | 172 (1.5 I _N) | |
| | 16 | 45 | 91 | 82 | 122 | 138 | 138 (1.5 I _N) | |
| CDB/CDE. x4.140,L (90 kW) | 4 | 45 | 170 | 153 | 230 | 340 | 340 (2.0 I _N) | 10 |
| | 8 | 45 | 170 | 153 | 190 | 255 | 255 (1.5 I _N) | |
| | 12 | 45 | 136 | 122 | 152 | 204 | 204 (1.5 I _N) | |
| | 16 | 45 | 109 | 98 | 122 | 163 | 163 (1.5 I _N) | |
| CDB/CDE. x4.168,L (110 kW) | 4 | 45 | 210 | 189 | 230 | 340 | 340 (1.6 I _N) | 10 |
| | 8 | 45 | 210 | 189 | 190 | 255 | 255 (1.2 I _N) | |
| | 12 | 45 | 168 | 151 | 152 | 204 | 204 (1.2 I _N) | |
| | 16 | 45 | 134 | 121 | 122 | 163 | 163 (1.2 I _N) | |
| CDB/CDE. x4.208,L (110 kW) | 4 | 45 | 250 | 225 | 230 | 325 | 325 (1.3 I _N) | 10 |
| | 8 | 45 | 250 | 225 | 190 | 255 | 255 (1.0 I _N) | |
| | 12 | 45 | 168 | 151 | 152 | 204 | 204 (1.2 I _N) | |
| | 16 | 45 | 134 | 121 | 122 | 163 | 163 (1.2 I _N) | |

3) for 400 V systems
 4) Shut-off as per I² x t characteristic

Motor cable length 10 m
 Mounting height 1000 m above MSL
 End-to-end mounting

Positioning controllers for 230 V systems, variant “CDB3000-OL” (Open Loop):

| Servocontroller | Switching frequency of power stage | Ambient temperature | Rated current | | Peak current [A _{eff}] ²⁾ | | | for time ⁴⁾ |
|--|------------------------------------|---------------------|----------------------------------|---|--|----------------------------|-----|------------------------|
| | | | at 230 V | at rotating field frequency rising in linear mode 0 to 5 Hz | for intermittent operation | for time ⁴⁾ | | |
| | [kHz] | °C | [A _{eff}] | 0 Hz | 5 Hz | > 5 Hz | [s] | |
| CDB 32.004,Cx.x,OL (0.75 kW) | 4 | 45 | 4 | 7.2 | 7.2 | 7.2 (1.8 I _N) | 30 | |
| | 8 | 40 | 4 | 7.2 | 7.2 | 7.2 (1.8 I _N) | | |
| | 12 | 40 | 3.5 | 5.7 | 6.3 | 6.3 (1.8 I _N) | | |
| | 16 | 40 | 3 | 5 | 5.4 | 5.4 (1.8 I _N) | | |
| CDB 32.008,Wx.x,OL (1.5 kW) | 4 | 40 | 7.1 | 12.8 | 12.8 | 12.8 (1.8 I _N) | 30 | |
| | 8 | 40 | 7.1 | 12.8 | 12.8 | 12.8 (1.8 I _N) | | |
| | 12 | 40 | 6.3 | 10 | 11.3 | 11.3 (1.8 I _N) | | |
| | 16 | 40 | 5.5 | 8 | 9.9 | 9.9 (1.8 I _N) | | |
| 2) for 230 V systems | | | Motor cable length 10 m | | | | | |
| 3) for 400 V systems | | | Mounting height 1000 m above MSL | | | | | |
| 4) Shut-off as per I ² x t characteristic | | | End-to-end mounting | | | | | |

Positioning controllers for 400/460 V systems, variant “CDB3000-OL” (Open Loop):

| Servo-controller | Switching frequency of power stage | Ambient temperature | Rated current | | Peak current [A _{eff}] ³⁾ | | | for time ⁴⁾ |
|------------------------------------|------------------------------------|---------------------|---------------------|---------------------|---|----------------------------|-----------------------------|------------------------|
| | | | at 400 V | at 460 V | at rotating field frequency rising in linear mode 0 to 5 Hz | for intermittent operation | for time ⁴⁾ | |
| | [kHz] | °C | [A _{eff}] | [A _{eff}] | 0 Hz | 5 Hz | > 5 Hz | [s] |
| CDB 34.003,Cx.x,OL (0.75 kW) | 4 | 45 | 2.2 | 2.2 | 4 | 4 | 4 (1.8 I _N) | 30 |
| | 8 | 40 | 2.2 | 2.2 | 4 | 4 | 4 (1.8 I _N) | |
| | 12 | 40 | 1.6 | 1.6 | 2.9 | 2.9 | 2.9 (1.8 I _N) | |
| | 16 | 40 | 1 | 1 | 1.8 | 1.8 | 1.8 (1.8 I _N) | |
| CDB 34.005,Wx.x,OL (1.5 kW) | 4 | 45 | 4.1 | 4.1 | 7.4 | 7.4 | 7.4 (1.8 I _N) | 30 |
| | 8 | 40 | 4.1 | 3.6 | 7.4 | 7.4 | 7.4 (1.8 I _N) | |
| | 12 | 40 | 3.2 | 2.4 | 5.7 | 5.7 | 5.7 (1.8 I _N) | |
| | 16 | 40 | 2.4 | 1.8 | 4.3 | 4.3 | 4.3 (1.8 I _N) | |
| CDB 34.006,Wx.x,OL (2.2 kW) | 4 | 45 | 5.7 | 5.7 | 10.3 | 10.3 | 10.3 (1.8 I _N) | 30 |
| | 8 | 40 | 5.7 | 5.7 | 7.8 | 10.3 | 10.3 (1.8 I _N) | |
| | 12 | 40 | 4.1 | 3.1 | 6.4 | 7.5 | 7.5 (1.8 I _N) | |
| | 16 | 40 | 2.6 | 1.9 | 4.7 | 4.7 | 4.7 (1.8 I _N) | |
| CDB 34.008,Wx.x,OL (3 kW) | 4 | 45 | 7.8 | 7.8 | 14 | 14 | 14 (1.8 I _N) | 30 |
| | 8 | 40 | 7.8 | 7.8 | 14 | 14 | 14 (1.8 I _N) | |
| | 12 | 40 | 6.4 | 4.8 | 11 | 11 | 11 (1.8 I _N) | |
| | 16 | 40 | 5 | 3.7 | 7.8 | 7.8 | 7.8 (1.8 I _N) | |
| CDB 34.010,Wx.x,OL (4 kW) | 4 | 45 | 10 | 10 | 18 | 18 | 18 (1.8 I _N) | 30 |
| | 8 | 40 | 10 | 8.8 | 15.9 | 16.5 | 16.5 (1.65 I _N) | |
| | 12 | 40 | 8.1 | 6 | 12.5 | 13.3 | 13.3 (1.65 I _N) | |
| | 16 | 40 | 6.2 | 4.6 | 7.2 | 7.7 | 7.7 (1.25 I _N) | |

| Servo-controller | Switching frequency of power stage | Ambient temperature | Rated current | | Peak current [A _{eff}] ³⁾ | | | |
|--|------------------------------------|---------------------|----------------------------------|---------------------|---|------|----------------------------|------------------------|
| | | | at 400 V | at 460 V | at rotating field frequency rising in linear mode 0 to 5 Hz | | for intermittent operation | for time ⁴⁾ |
| | [kHz] | °C | [A _{eff}] | [A _{eff}] | 0 Hz | 5 Hz | > 5 Hz | [s] |
| CDB 34.014,Wx.x,OL (5.5 kW) | 4 | 45 | 14 | 14 | 25 | 25 | 25 (1.8 I _N) | 30 |
| | 8 | 40 | 14 | 12.5 | 21 | 25 | 25 (1.8 I _N) | |
| | 12 | 40 | 10.3 | 8.8 | 15.1 | 18.5 | 18.5 (1.8 I _N) | |
| | 16 | 40 | 6.6 | 5.5 | 9.2 | 11.9 | 11.9 (1.8 I _N) | |
| CDB 34.017,Wx.x,OL (7.5 kW) | 4 | 45 | 17 | 17 | 31 | 30.6 | 30.6 (1.8 I _N) | 30 |
| | 8 | 40 | 17 | 13.5 | 21.2 | 30.6 | 30.6 (1.8 I _N) | |
| | 12 | 40 | 12.5 | 9.6 | 9.2 | 22.5 | 22.5 (1.8 I _N) | |
| | 16 | 40 | 8 | 6 | 9.2 | 14.4 | 14.4 (1.8 I _N) | |
| CDB 34.024,Wx.x,OL (11 kW) | 4 | 45 | 24 | 24 | 43 | 43 | 43 (1.8 I _N) | 30 |
| | 8 | 40 | 24 | 24 | 40 | 43 | 43 (1.8 I _N) | |
| | 12 | 40 | 21 | 16 | 29 | 38 | 38 (1.8 I _N) | |
| | 16 | 40 | 15 | 11 | 21 | 27 | 27 (1.8 I _N) | |
| CDB 34.032,Wx.x,OL (15 kW) | 4 | 45 | 32 | 32 | 58 | 58 | 58 (1.8 I _N) | 30 |
| | 8 | 40 | 32 | 28 | 40 | 58 | 58 (1.8 I _N) | |
| | 12 | 40 | 25 | 17 | 30 | 45 | 45 (1.8 I _N) | |
| | 16 | 40 | 20 | 12 | 22 | 36 | 36 (1.8 I _N) | |
| CDB 34.044,Wx.x,OL (22 kW) | 4 | 45 | 45 | 41 | 68 | 67.5 | 67 (1.5 I _N) | 30 |
| | 8 | 40 | 45 | 41 | 45 | 67 | 67 (1.5 I _N) | |
| | 12 | 40 | 36 | 33 | 36 | 54 | 54 (1.5 I _N) | |
| | 16 | 40 | 27 | 24 | 27 | 41 | 41 (1.5 I _N) | |
| CDB 34.058,Wx.x,OL (30 kW) | 4 | 45 | 60 | 54 | 90 | 90 | 90 (1.5 I _N) | 30 |
| | 8 | 40 | 60 | 54 | 60 | 90 | 90 (1.5 I _N) | |
| | 12 | 40 | 48 | 43 | 48 | 72 | 72 (1.5 I _N) | |
| | 16 | 40 | 36 | 33 | 36 | 54 | 54 (1.5 I _N) | |
| CDB 34.070,Wx.x,OL (37 kW) | 4 | 45 | 72 | 65 | 108 | 108 | 108 (1.5 I _N) | 30 |
| | 8 | 40 | 72 | 65 | 72 | 108 | 108 (1.5 I _N) | |
| | 12 | 40 | 58 | 52 | 58 | 87 | 87 (1.5 I _N) | |
| | 16 | 40 | 42 | 38 | 42 | 63 | 63 (1.5 I _N) | |
| CDB 34.088,Wx.x,OL (45 kW) | 4 | 45 | 90 | 81 | 170 | 180 | 180 (2.0 I _N) | 30 |
| | 8 | 40 | 90 | 81 | 134 | 180 | 180 (2.0 I _N) | |
| | 12 | 40 | 90 | 81 | 107 | 144 | 144 (1.6 I _N) | |
| | 16 | 40 | 72 | 65 | 86 | 115 | 115 (1.6 I _N) | |
| CDB 34.108,Wx.x,OL (55 kW) | 4 | 45 | 110 | 99 | 170 | 220 | 220 (2.0 I _N) | 30 |
| | 8 | 40 | 110 | 99 | 134 | 165 | 165 (1.5 I _N) | |
| | 12 | 40 | 90 | 81 | 107 | 144 | 144 (1.6 I _N) | |
| | 16 | 40 | 72 | 65 | 86 | 115 | 115 (1.6 I _N) | |
| CDB 34.140,Wx.x,OL (75 kW) | 4 | 45 | 143 | 129 | 270 | 286 | 286 (2.0 I _N) | 30 |
| | 8 | 40 | 143 | 129 | 215 | 215 | 215 (1.5 I _N) | |
| | 12 | 40 | 115 | 104 | 172 | 172 | 172 (1.5 I _N) | |
| | 16 | 40 | 92 | 83 | 138 | 138 | 138 (1.5 I _N) | |
| CDB 34.168,Wx.x,OL (90 kW) | 4 | 45 | 170 | 153 | 190 | 315 | 315 (1.9 I _N) | 10 |
| | 8 | 40 | 170 | 153 | 151 | 220 | 220 (1.3 I _N) | |
| | 12 | 40 | 136 | 122 | 121 | 164 | 164 (1.2 I _N) | |
| | 16 | 40 | 109 | 98 | 97 | 131 | 131 (1.2 I _N) | |
| 3) for 400 V systems | | | Motor cable length 10 m | | | | | |
| 4) Shut-off as per I ² x t characteristic | | | Mounting height 1000 m above MSL | | | | | |
| | | | End-to-end mounting | | | | | |

Positioning controllers (BG1 + 2) CDE3000 2.2 to 4.0 A CDB3000 0.375 to 0.75 kW



CDE/CDB3 □.□□□, □x,x,□□, ... □□

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-32.004,C

Order code

| Tech. data ¹⁾ | CDE/CDB32.003 | CDE/CDB32.004 | CDE/CDB34.003 |
|--|--|---------------------|---------------------|
| Output, motor side | | | |
| Recommended rated power with 4-pole standard motor | 0.375 kW | 0.75 kW | 0.75 kW |
| Voltage | 3 x 0 ... 230 V | | 3 x 0 ... 400/460 V |
| Effective rated current (I_N at 4/8 kHz) | 2.4 A ²⁾ | 4.0 A ²⁾ | 2.2 A ²⁾ |
| Peak current | see table on page 2-3 | | |
| Rotating field frequency | 0 ... 400 Hz | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz) | | |
| Input, mains side | | | |
| Mains voltage | 1 x 230 V | | 3 x 400 V / 460 V |
| Device connected load | 1.0 kVA | 1.6 kVA | 1.5 kVA |
| Asymmetry of mains voltage | - | - | ±3 % max. |
| Frequency | 50/60 Hz ±10 % | | |
| Power loss (4 / 8, 12, 16 kHz) | | | |
| CDE3000 | 49 / 52 W | 63 / 70 W | 90 / 97 W |
| CDB3000 | 30 / 35 W | 48 / 55 W | 55 / 70 W |
| Braking chopper power electronics | | | |
| Minimum ohmic resistance of an externally installed braking resistor | 100 Ω | 100 Ω | 180 Ω |

¹⁾ all data apply to 1-phase units at 230 V to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-3

| Cooling method | CDB32.003, C x.x | CDB32.004, C x.x | CDB34.003, C x.x |
|--|---|---|------------------|
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) | | 40 °C |
| Weight | 1.6 kg | | 2.3 kg |
| Single mounting | - | Additional cooling via mounting plate (unpainted) of 0.065 m ² | - |
| End-to-end mounting of several positioning controllers | - | with accessories HS32.1BR, HS32.100 | - |
| Dimensions | BG1 [mm] | | BG2 [mm] |
| B (width) | 70 | | 70 |
| H (height) | 193 | | 218 |
| T (depth) | 120 | | 145 |
| A | 50 | | 50 |
| C | 205 | | 230 |
| E | 215 | | 240 |
| DØ | Ø 4.8 | | Ø 4.8 |
| Dimensional drawings | | | |

| Cooling method | CDE32.003, C x.x | CDE32.004, C x.x | CDE34.003, C x.x |
|--|---|---|------------------|
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) | | 45 °C |
| Weight | 1.6 kg | | 2.3 kg |
| Single mounting | - | Additional cooling via mounting plate (unpainted) of 0.065 m ² | - |
| End-to-end mounting of several positioning controllers | - | with accessories HS32.1BR, HS32.100 | - |
| Dimensions | BG1 [mm] | | BG2 [mm] |
| B (width) | 70 | | 70 |
| H (height) | 220 | | 245 |
| T (depth) | 120 | | 145 |
| A | 50 | | 50 |
| C | 230 | | 230 |
| E | 215 | | 240 |
| DØ | Ø 4.8 | | Ø 4.8 |
| Dimensional drawings | | | |

Positioning controllers CDE3000 4.1 to 7.1 A (BG2)



CDE/CDB3 □·□□□, □x.x, □□, ... □□

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDE-32.006,W

Order Code

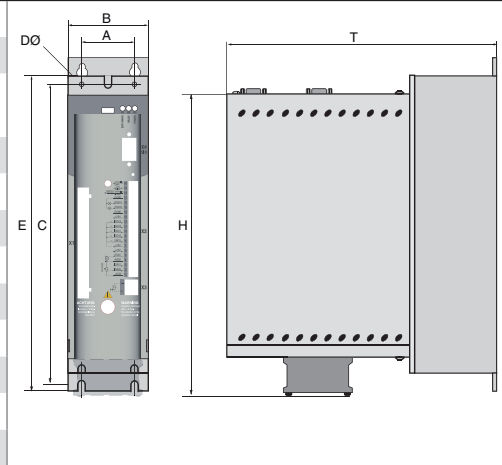
| Tech. data ¹⁾ | CDE32.008 | CDE34.005 | CDE34.006 |
|---|--|---------------------|---------------------|
| Output, motor side | | | |
| Recommended rated power with 4-pole standard motor | 1.5 kW | 1.5 kW | 2.2 kW |
| Voltage | 3 x 0 ... 230 V | 3 x 0 ... 400/460 V | 3 x 0 ... 400/460 V |
| Effective rated current (I_N at 4/8 kHz) | 7.1 A ²⁾ | 4.1 A ²⁾ | 5.7 A ²⁾ |
| Peak current | see table page 2-3 | | |
| Rotating field frequency | 0 ... 400 Hz | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz) | | |
| Input, mains side | | | |
| Mains voltage | 1 x 230 V | 3 x 400 V / 460 V | |
| Device connected load | 3.0 kVA | 3.0 kVA | 4.2 kVA |
| Asymmetry of mains voltage | - | ±3 % max. | |
| Frequency | 50/60 Hz ±10 % | | |
| Power loss (4 / 8, 12, 16 kHz) | 110 / 120 W | 95 / 127 W | 121 / 163 W |
| Braking chopper power electronic | | | |
| Peak braking power with int. braking resistor (only with variant CDE34 ..., Wx.x, BR) | 1.7 kW at 90 Ω | 1.6 kW at 360 Ω | 1.6 kW at 360 Ω |
| Minimum ohmic resistance of an externally installed braking resistor | 56 Ω | 180 Ω | 180 Ω |

¹⁾ all data apply
to 1-phase units at 230 V
to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-3

| Cooling method | CDE32.008, <u>W</u> x.x | CDE34.005, <u>W</u> x.x | CDE34.006, <u>W</u> x.x | Dimensional drawing |
|----------------|----------------------------|----------------------------|----------------------------|---------------------|
|----------------|----------------------------|----------------------------|----------------------------|---------------------|

| Mechanism | | | | |
|-------------------------|--|-----------------|-----------------|--|
| Mounting method | Vertical assembly, end-to-end | | | |
| Cooling air temperature | 45 °C (at 4 kHz switching frequency of power stage) | | | |
| Weight | 3.5 kg | 3.5 kg | 3.5 kg | |
| Dimensions | BG2 [mm] | BG2 [mm] | BG2 [mm] | |
| B (width) | 70 | | | |
| H (height) | 240 | | | |
| T (depth) | 220 | | | |
| A | 40 | | | |
| C | 260 | | | |
| E | 270 | | | |
| DØ | Ø 4.8 | | | |



| Variant | Characteristic |
|-------------------|---------------------------|
| CDE32.008,Wx.x,BR | Internal braking resistor |
| CDE34.005,Wx.x,BR | Internal braking resistor |
| CDE34.006,Wx.x,BR | Internal braking resistor |

Positioning controllers CDB3000 1.5 to 2.2 kW (BG2)



CDE/CDB3 · , x.x, , ...

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-32.008,C

Order code

| Tech. data ¹⁾ | CDB32.008 | CDB34.005 | CDB34.006 |
|---|--|---------------------|---------------------|
| Output, motor side | | | |
| Recommended rated power with 4-pole standard motor | 1.5 kW | 1.5 kW | 2.2 kW |
| Voltage | 3 x 0 ... 230 V | 3 x 0 ... 400/460 V | 3 x 0 ... 400/460 V |
| Effective rated current (I_N at 4/8 kHz) | 7.1 A ²⁾ | 4.1 A ²⁾ | 5.7 A ²⁾ |
| Peak current | see table page 2-3 | | |
| Rotating field frequency | 0 ... 400 Hz | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz) | | |
| Input, mains side | | | |
| Mains voltage | 1 x 230 V | 3 x 400 V / 460 V | |
| Device connected load | 3.0 kVA | 3.0 kVA | 4.2 kVA |
| Asymmetry of mains voltage | - | ±3 % max. | |
| Frequency | 50/60 Hz ±10 % | | |
| Power loss (4 / 8, 12, 16 kHz) | 95/ 105 W | 80/ 112 W | 106/ 148 W |
| Braking chopper power electronic | | | |
| Peak braking power with int. braking resistor (only with variant CDE34 ..., Wx.x, BR) | 1.7 kW at 90 Ω | 1.6 kW at 360 Ω | 1.6 kW at 360 Ω |
| Minimum ohmic resistance of an externally installed braking resistor | 56 Ω | 180 Ω | 180 Ω |

¹⁾ all data apply to 1-phase units at 230 V to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-3

| Cooling method | | CDB32.008,C x.x | Dimensional drawing | |
|--|---|-----------------|---------------------|--|
| Mechanism | | | | |
| Mounting method | Vertical assembly, end-to-end | | | |
| Cooling air temperature | 40°C | | | |
| Weight | 2.3 kg | | | |
| Mounting method | | | | |
| Single mounting | Additional cooling via cabinet mounting plate (unpainted) of 0.3 m ² | | | |
| End-to-end mounting of several positioning controllers | with CDB 32.008,W only | | | |
| Dimensions | | | | |
| | BG2 [mm] | | | |
| B (width) | 70 | | | |
| H (height) | 218 | | | |
| T (depth) | 145 | | | |
| A | 50 | | | |
| C | 230 | | | |
| E | 240 | | | |
| DØ | Ø 4.8 | | | |

| Cooling method | CDB32.008, W | CDB34.005, W | CDB34.006, W | Dimensional drawing |
|-------------------------|--|--------------|--------------|---------------------|
| Mechanism | | | | |
| Mounting method | Vertical assembly, end-to-end | | | |
| Cooling air temperature | 45°C (at 4 kHz switching frequency of power stage) | | | |
| Weight | 3.5 kg | | | |
| Dimensions | | | | |
| | BG2[mm] | | | |
| B (width) | 70 | | | |
| H (height) | 247 | | | |
| T (depth) | 220 | | | |
| A | 40 | | | |
| C | 260 | | | |
| E | 270 | | | |
| DØ | Ø 4.8 | | | |

| Variant | Characteristic |
|-------------------|---------------------------|
| CDB32.008,Wx.x,BR | Internal braking resistor |
| CDB34.005,Wx.x,BR | Internal braking resistor |
| CDB34.006,Wx.x,BR | Internal braking resistor |



You will find the matching heat sinks on page 3-9.

Positioning controllers (BG3) CDE3000 7.8 to 10 A CDB3000 3.0 to 4.0 kW



CDE/CDB3 □-□□□, □x.x, □□, ... □□

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-34.008,W

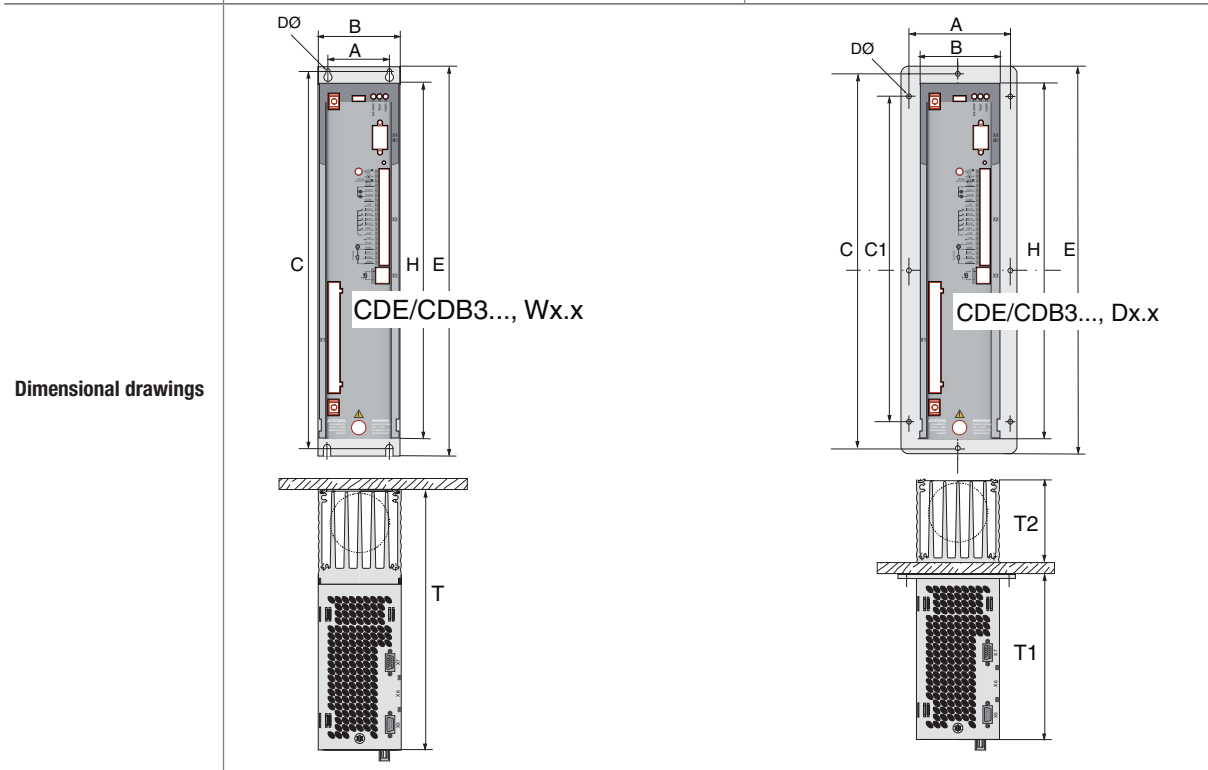
Order code

| Tech. data ¹⁾ | CDE/CDB34.008 | CDE/CDB34.010 |
|--|---|--------------------|
| Output, motor side | | |
| Recommended rated power with 4-pole standard motor | 3.0 kW | 4.0 kW |
| Voltage | 3 x 0 ... 400/460 V | |
| Effective rated current (I _N at 4/8 kHz) | 7.8 A ²⁾ | 10 A ²⁾ |
| Peak current | see table page 2-3 | |
| Rotating field frequency | 0 ... 400 Hz | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz at 40 °C cooling air temperature) | |
| Input, mains side | | |
| Mains voltage | 3 x 400 V / 460 V | |
| Device connected load | 5.7 kVA | 7.3 kVA |
| Asymmetry of mains voltage | ±3 % max. | |
| Frequency | 50/60 Hz ±10 % | |
| Power loss (4 / 8, 12, 16 kHz) | | |
| CDE3000 | 150 / 177 W | 187 / 222 W |
| CDB3000 | 135 / 162 W | 172 / 207 W |
| Braking chopper power electronic | | |
| Peak braking power with int. braking resistor (only with variant CDE/CDB34 ... , Wx.x, BR) | 6.0 kW at 90 Ω | 6.0 kW at 90 Ω |
| Minimum ohmic resistance of an externally installed braking resistor | 81 Ω | 81 Ω |

¹⁾ all data apply to 1-phase units at 230 V to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-3

| | CDE/CDB34 ..., W x.x | CDE/CDB34 ..., D x.x |
|-------------------------|---|--|
| Cooling method | Wall mounting | Push-through heat sink |
| Mounting method | Vertical assembly, end-to-end | Vertical mounting, end-to-end, heat sink pushed through mounting plate |
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) | |
| Weight | 4.4 kg | 4.6 kg |
| Dimensions | BG3 [mm] | BG3 [mm] |
| B (width) | 70 | 70 (110) |
| H (height) | 300 | 300 |
| T (depth) | 218 | T1 138, T2 80 |
| A | 40 | 90 |
| C | 320 | 320 |
| C1 | - | 200 |
| E | 330 | 340 |
| DØ | Ø 4.8 | Ø 4.8 |



Positioning controllers (BG4) CDE3000 14 to 17 A CDB3000 5.5 to 7.5 kW



CDE/CDB3 ., x.x, , ...

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-34.014,W

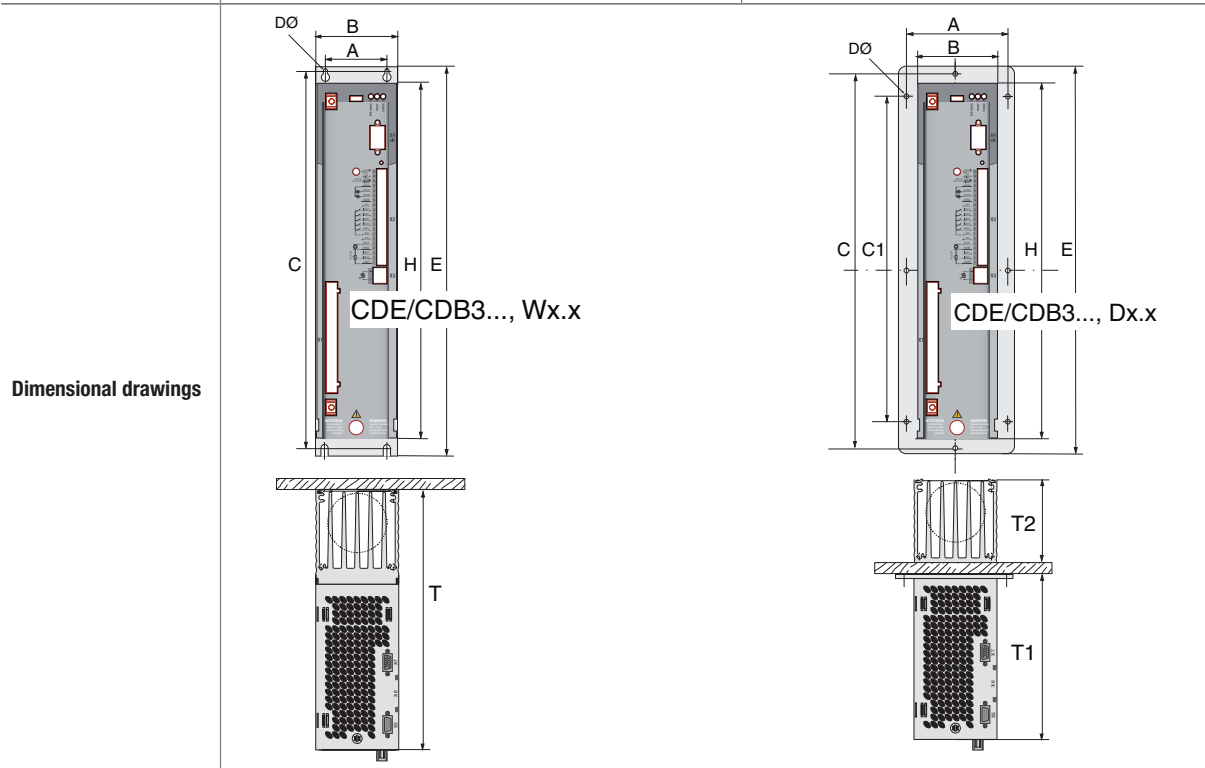
Order code

| Tech. data ¹⁾ | CDE/CDB34.014 | CDE/CDB34.017 |
|---|---|--------------------|
| Output, motor side | | |
| Recommended rated power with 4-pole standard motor | 5.5 kW | 7.5 kW |
| Voltage | 3 x 0 ... 400/460V | |
| Effective rated current (I_N at 4/8 kHz) | 14 A ²⁾ | 17 A ²⁾ |
| Peak current | see table page 2-3 | |
| Rotating field frequency | 0 ... 400 Hz | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz at 40 °C cooling air temperature) | |
| Input, mains side | | |
| Mains voltage | 3 x 400 V / 460 V | |
| Device connected load | 5.7 kVA | 7.3 kVA |
| Asymmetry of mains voltage | ±3 % max. | |
| Frequency | 50/60 Hz ±10 % | |
| Power loss (4 / 8, 12, 16 kHz) | | |
| CDE3000 | 150 / 177 W | 187 / 222 W |
| CDB3000 | 135 / 162 W | 172 / 207 W |
| Braking chopper power electronic | | |
| Peak braking power with int. braking resistor (only with variant CDE/CDB34 ..., Wx.x, BR) | 6.0 kW at 90 Ω | 6.0 kW at 90 Ω |
| Minimum ohmic resistance of an externally installed braking resistor | 47 Ω | 47 Ω |

¹⁾ all data apply to 1-phase units at 230 V to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-3

| | CDE/CDB34 ..., W x.x | CDE/CDB34 ..., D x.x |
|-------------------------|---|--|
| Cooling method | Wall mounting | Push-through heat sink |
| Mounting method | Vertical assembly, end-to-end | Vertical mounting, end-to-end, heat sink pushed through mounting plate |
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) | |
| Weight | 4.4 kg | 4.6 kg |
| Dimensions | BG3 [mm] | BG3 [mm] |
| B (width) | 70 | 70 (110) |
| H (height) | 300 | 300 |
| T (depth) | 218 | T1 138, T2 80 |
| A | 40 | 90 |
| C | 320 | 320 |
| C1 | - | 200 |
| E | 330 | 340 |
| DØ | Ø 4.8 | Ø 4.8 |



Positioning controllers (BG5) CDE3000 24 to 32 A CDB3000 11 to 15 kW



CDE/CDB3 □-□□□, □x.x, □□, ... □□

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-34.024,W

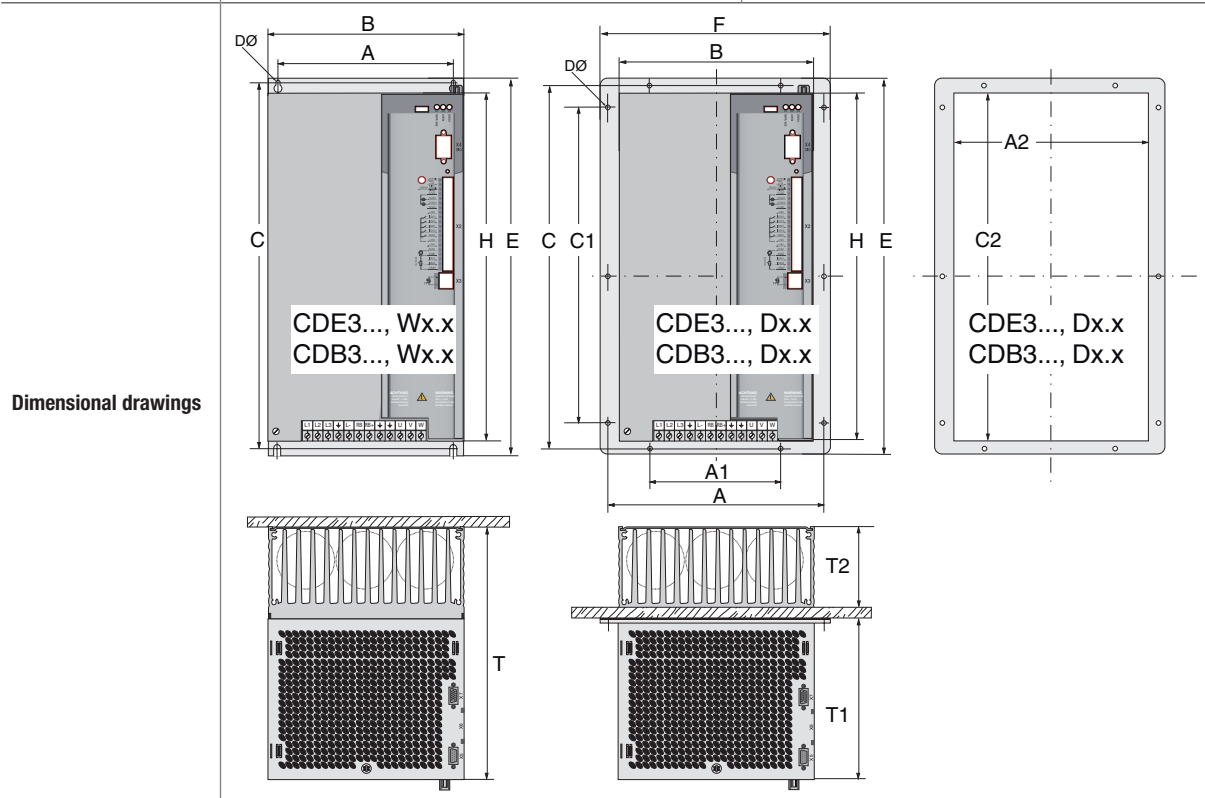
Order code

| Tech. data ¹⁾ | CDE/CDB34.024 | CDE/CDB34.032 |
|--|--|--------------------|
| Output, motor side | | |
| Recommended rated power with 4-pole standard motor | 11 kW | 15 kW |
| Voltage | 3 x 0 ... 400/460 V | |
| Effective rated current (I_N at 4/8 kHz) | 24 A ²⁾ | 32 A ²⁾ |
| Peak current | see table page 2-3 | |
| Rotating field frequency | 0 ... 400 Hz | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz) | |
| Input, mains side | | |
| Mains voltage | 3 x 400 V / 460 V | |
| Device connected load | 17.5 kVA | 23.3 kVA |
| Asymmetry of mains voltage | ±3 % max. | |
| Frequency | 50/60 Hz ±10 % | |
| Power loss (4 / 8, 12, 16 kHz) | | |
| CDE3000 | 330 / 415 W | 415 / 525 W |
| CDB3000 | 315 / 400 W | 400 / 510 W |
| Braking chopper power electronic | | |
| Peak braking power with int. braking resistor (only with variant CDE/CDB34 ... Wx.x, BR) | 6.0 kW at 90 Ω | 6.0 kW at 90 Ω |
| Minimum ohmic resistance of an externally installed braking resistor | 22 Ω | 22 Ω |

1) all data apply to 1-phase units at 230 V to 3-phase units at 400 V

2) For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-3

| | CDE/CDB3 ..., W x.x | CDE/CDB3 ..., D x.x |
|-------------------------|---|--|
| Cooling method | Wall mounting | Push-through heat sink |
| Mounting method | Vertical assembly, end-to-end | Vertical mounting, end-to-end, heat sink pushed through mounting plate |
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) | |
| Weight | 7.2 kg | 7.4 kg |
| Dimensions | BG5 [mm] | BG5 [mm] |
| B (width) | 170 | 170 |
| H (height) | 300 | 300 |
| T (depth) | 218 | T1 = 138, T2 = 135 |
| A | 130 | A = 190 , A1 = 100 |
| A2 (wall cut-out) | - | 175 |
| C | 320 | C = 320 / C1 = 200 |
| C2 (wall cut-out) | - | 305 |
| E | 330 | 340 |
| F | - | 210 |
| DØ | Ø 4.8 | Ø 4.8 |



Positioning controllers (BG6) CDE3000 45 to 72 A CDB3000 22 to 37 kW



CDE/CDB3 □.□□□, □x.x, □□, ... □□

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-34.044,W

Order code

| Tech. data ¹⁾ | CDE/CDB34.044 | CDE/CDB34.058 | CDE/CDB34.070 |
|--|--|------------------------|-------------------------|
| Output, motor side CDE3000 | | | |
| Voltage ³⁾ | 3 x 0 ... 400/480 V | | |
| Effective rated current (I _N at 8 kHz) | 45 A ²⁾ | 60 A ²⁾ | 72 A ²⁾ |
| Peak current | see table page 2-4 | | |
| Rotating field frequency | 0 ... 400 Hz | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz) | | |
| Output, motor side CDB3000 | | | |
| Device connected load ¹⁾ | 22 kW | 30 kW | 37 kW |
| Voltage ³⁾ | 3 x 0 ... 400/480 V | | |
| Effective rated current (I _N bei 8 kHz) ¹⁾ | 45 A ²⁾ | 60 A ²⁾ | 72 A ²⁾ |
| Peak current | see table page 2-4 | | |
| Rotating field frequency | 0 ... 400 Hz | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 4 kHz) | | |
| Input, mains side | | | |
| Mains voltage | 3 x 400 V / 460V / 480 V | | |
| Device connected load | 31 kVA | 42 kVA | 50 kVA |
| Asymmetry of mains voltage | ±3 % max. | | |
| Frequency | 50 / 60 Hz ±10 % | | |
| Power loss (4 kHz) | 610 / 520 W CDE/CDB | 830 / 700 W CDE/CDB | 1010 / 860 W CDE/CDB |
| Braking chopper power electronic | | | |
| Minimum ohmic resistance of an externally installed braking resistor | 18 Ω | 18 Ω | 13 Ω |

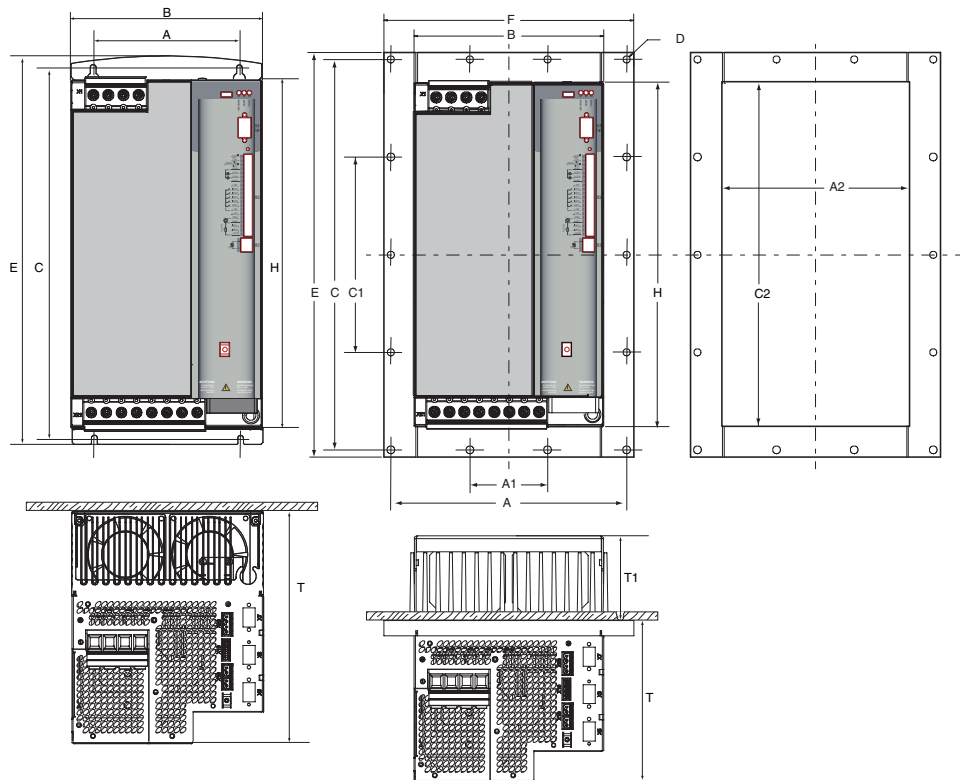
¹⁾ all data apply
to 1-phase units at 230 V
to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-4

³⁾ 3 x U_{Mains} x 0,95

| | CDE/CDB3 ..., W x.x | CDE/CDB3 ..., D x.x |
|-------------------------|--|--|
| Cooling method | Wall mounting | Push-through heat sink |
| Mounting method | Vertical mounting with unimpeded air flow, end-to-end | Vertical mounting, heat sink pushed through mounting plate, end-to-end |
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) 40 °C (at >8 kHz) | |
| Weight | 13 kg | 15 kg |
| Dimensions | BG6 [mm] | BG6 [mm] |
| B (width) | 190 | 190 |
| H (height) | 345 | 345 |
| T (depth) | 230 | 161 / T1 = 85 |
| A | 150 | A = 236 / A1 = 78 |
| A2 (wall cut-out) | - | 204 |
| C | 365 | C = 391 / C1 = 195.5 |
| C2 (wall cut-out) | - | 360 |
| E | - | 405 |
| F | - | 250 |
| DØ | Ø 5.6 | Ø 7.5 |

Dimensional drawings



Positioning controllers (BG7 / 7a) CDE3000 90 to 170 A CDB3000 47 to 90 kW



CDE/CDB3 · , x,x, , ...

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-34.088,W

Order code

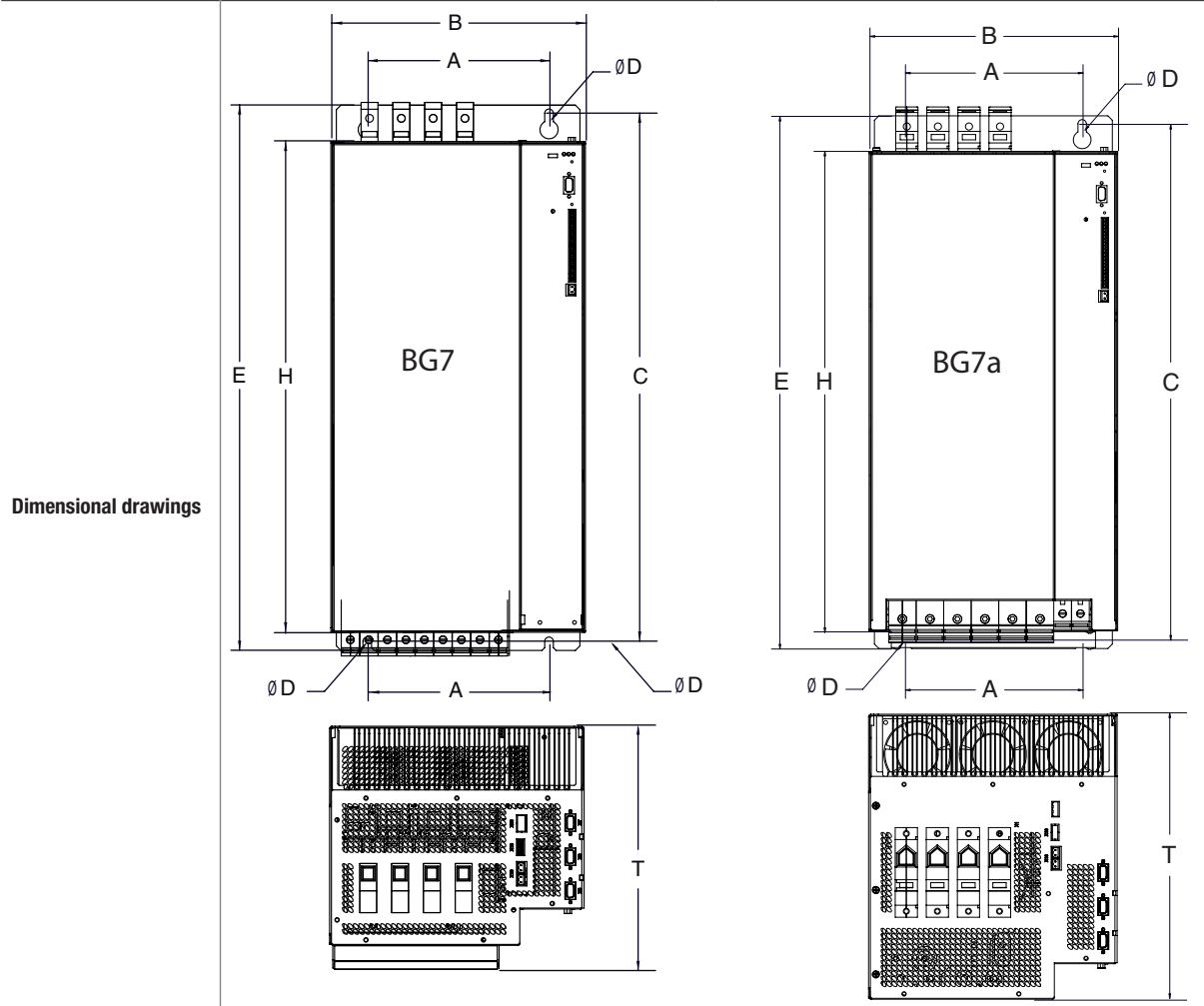
| Tech. data ¹⁾ | CDE/CDB34.088 | CDE/CDB34.108 | CDE/CDB34.140 | CDE/CDB34.168 |
|--|--|----------------------------|----------------------------|----------------------------|
| Output, motor side | | | | |
| Device connected load ¹⁾ | 47 kW | 55 kW | 75 kW | 90 kW |
| Voltage ³⁾ | 3 x 0 ... 400/480 V | | | |
| Effective rated current (I_N at 8 kHz) | 90 A ²⁾ | 110 A ²⁾ | 143 A ²⁾ | 170 A ²⁾ |
| Peak current | see table page 2-4 | | | |
| Rotating field frequency | 0 ... 400 Hz | | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 4 kHz) | | | |
| Input, mains side | | | | |
| Mains voltage | 3 x 400 V / 460 V / 480 V | | | |
| Device connected load | 62 kVA | 76 kVA | 99 kVA | 118 kVA |
| Asymmetry of mains voltage | ±3 % max. | | | |
| Frequency | 50 / 60 Hz ±10 % | | | |
| Power loss (4 kHz) | 1300 / 1050 W CDE / CDB | 1600 / 1300 W CDE / CDB | 2100 / 1700 W CDE / CDB | 2500 / 2000 W CDE / CDB |
| Braking chopper power electronic | | | | |
| Minimum ohmic resistance of an externally installed braking resistor | 12 Ω | 10 Ω | 8.5 Ω | 6.5 Ω |

¹⁾ all data apply to 1-phase units at 230 V to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-4

³⁾ $3 \times U_{Mains} \times 0,95$

| | CDE/CDB34.088, W x.x bis CDE/CDB34.108, W x.x | CDE/CDB34.140, Wx.x bis ,CDE/CDB34.168, W x.x |
|-------------------------|--|--|
| Cooling method | Wall mounting | Wall mounting |
| Mounting method | Vertical mounting with unhindered air flow, end-to-end | Vertical mounting with unhindered air flow, end-to-end |
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) | 45 °C (at 4 kHz power stage switching frequency) |
| Weight | 28 kg | 32 kg |
| Dimensions | BG7 [mm] | BG7a [mm] |
| B (width) | 280 | 280 |
| H (height) | 540 | 540 |
| T (depth) | 241 | 321 |
| A | 200 | 200 |
| C | 581 | 581 |
| E | 600 | 600 |
| DØ | Ø 9.5 | Ø 9.5 |



Positioning controllers (BG6) CDE3000,L 45 to 72 A Liquid-cooled CDB3000,L 22 to 37 kW



CDE/CDB3 □.□□□, □x.x,□□, ... □□

Technical
data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-34.088,W

Order code

| Tech. data ¹⁾ | CDE/CDB34.044,L | CDE/CDB34.058,L | CDE/CDB34.070,L |
|--|--|--------------------|--------------------|
| Output, motor side CDE3000 | | | |
| Voltage ³⁾ | 3 x 0 ... 400/480 V | | |
| Effective rated current (I_N at 8 kHz) | 45 A ²⁾ | 60 A ²⁾ | 72 A ²⁾ |
| Peak current | see table page 2-5 | | |
| Rotating field frequency | 0 ... 400 Hz | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz) | | |
| Output, motor side CDB3000 | | | |
| Device connected load (400 V) | 22 kW | 30 kW | 37 kW |
| Voltage ³⁾ | 3 x 0 ... 400/480 V | | |
| Effective rated current (I_N at 8 kHz) | 45 A ²⁾ | 60 A ²⁾ | 72 A ²⁾ |
| Peak current | see table page 2-4 | | |
| Rotating field frequency | 0 ... 400 Hz | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz) | | |
| Input, mains side | | | |
| Mains voltage | 3 x 400 V / 460V / 480 V | | |
| Device connected load | 31 kVA | 42 kVA | 50 kVA |
| Asymmetry of mains voltage | + 3% max. | | |
| Frequency | 50/60 Hz +10% | | |
| Power loss (4 kHz) | 610 W | 830 W | 1010 W |
| Braking chopper power electronic | | | |
| Minimum ohmic resistance of an externally installed braking resistor | 10 Ω | 10 Ω | 10 Ω |

¹⁾ all data apply
to 1-phase units at 230 V
to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-5

³⁾ $3 \times U_{\text{Mains}} \times 0,95$

| CDE/CDB3...,L x.x | |
|--------------------------|---|
| Cooling method | Liquid-cooled |
| Mounting method | Vertical mounting with unhindered air flow, end-to-end |
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) 40 °C (at > 8 kHz) |
| Weight | 15 kg |
| Dimensions | BG6 [mm] |
| B (width) | 190 |
| H (height) | 394.75 |
| T (depth) | 190 |
| A ₁ | 148 |
| A ₂ | 148 |
| C | 377.25 |
| E ₁ | 61.75 |
| F ₁ | 130 |
| F ₂ | 70 |
| G | 73.5 |
| SØ | 3/8" |
| D1Ø | Ø 7 |
| D2Ø | Ø 15 |

Dimensional drawings

| Variant | Resistance [Ω] | Continuous braking power [kW] | Peak braking power [kW] |
|-------------------|----------------|-------------------------------|-------------------------|
| CDE/B 34.044,L,BR | 20 (2 x 10 Ω) | 1.5 | 55.5 |
| CDE/B 34.058,L,BR | | 2.0 | 55.5 |
| CDE/B 34.070,L,BR | | 2.0 | 55.5 |

Positioning controllers (BG7 / 7a) CDE3000,L 110 to 210 A Liquid-cooled CDB3000,L 55 to 110 kW



CDE/CDB3 □.□□□□, □x.x,□□, ... □□

Technical
data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-34.088,W

Order code

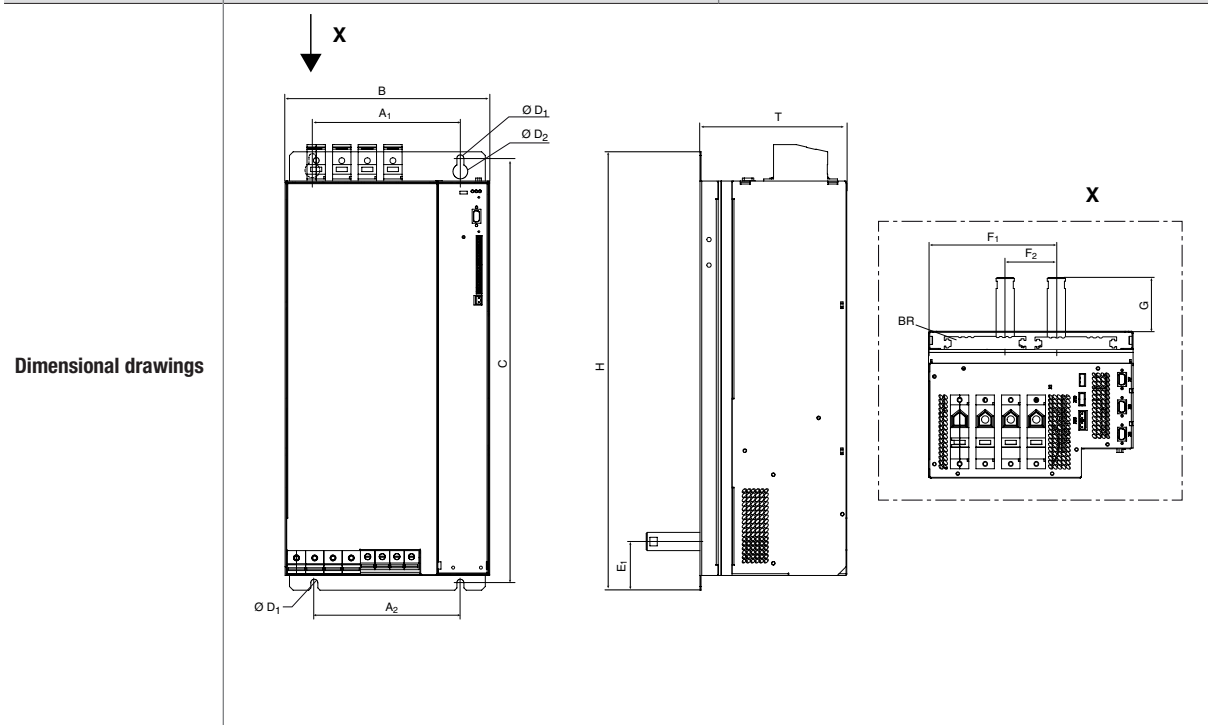
| Tech. data ¹⁾ | CDE/CDB 34.088,L | CDE/CDB 34.108,L | CDE/CDB 34.140,L | CDE/CDB 34.168,L | CDE/CDB 34.208,L |
|--|--|---------------------|---------------------|---------------------|---------------------|
| Output, motor side | | | | | |
| Device connected load ¹⁾ | 55 kW | 75 kW | 90 kW | 110 kW | 110 kW |
| Voltage ²⁾ | 3 x 0 ... 400/480 V | | | | |
| Effective rated current (I_N at 8 kHz) | 110 A ²⁾ | 143 A ²⁾ | 170 A ²⁾ | 210 A ²⁾ | 250 A ²⁾ |
| Peak current | see table page 2-5 | | | | |
| Rotating field frequency | 0...400 Hz | | | | |
| Switching frequency of power stage | 4, 8, 12, 16 kHz (factory setting 8 kHz) | | | | |
| Input, mains side | | | | | |
| Mains voltage | 3 x 400 V / 460 V / 480 V | | | | |
| Device connected load | 76 kVA | 99 kVA | 118 kVA | 128 kVA | 128 kVA |
| Asymmetry of mains voltage | + 3% max. | | | | |
| Frequency | 50/60 Hz +10% | | | | |
| Power loss (4 kHz) | 1950 W | 2300 W | 2550 W | 3000 W | 3000 W |
| Braking chopper power electronic | | | | | |
| Minimum ohmic resistance of an externally installed braking resistor | 12 Ω | 10 Ω | 8.5 Ω | 6.5 Ω | 5 Ω |

¹⁾ all data apply
to 1-phase units at 230 V
to 3-phase units at 400 V

²⁾ For detailed current data relating to differing supply voltages and higher switching frequencies see table on page 2-5

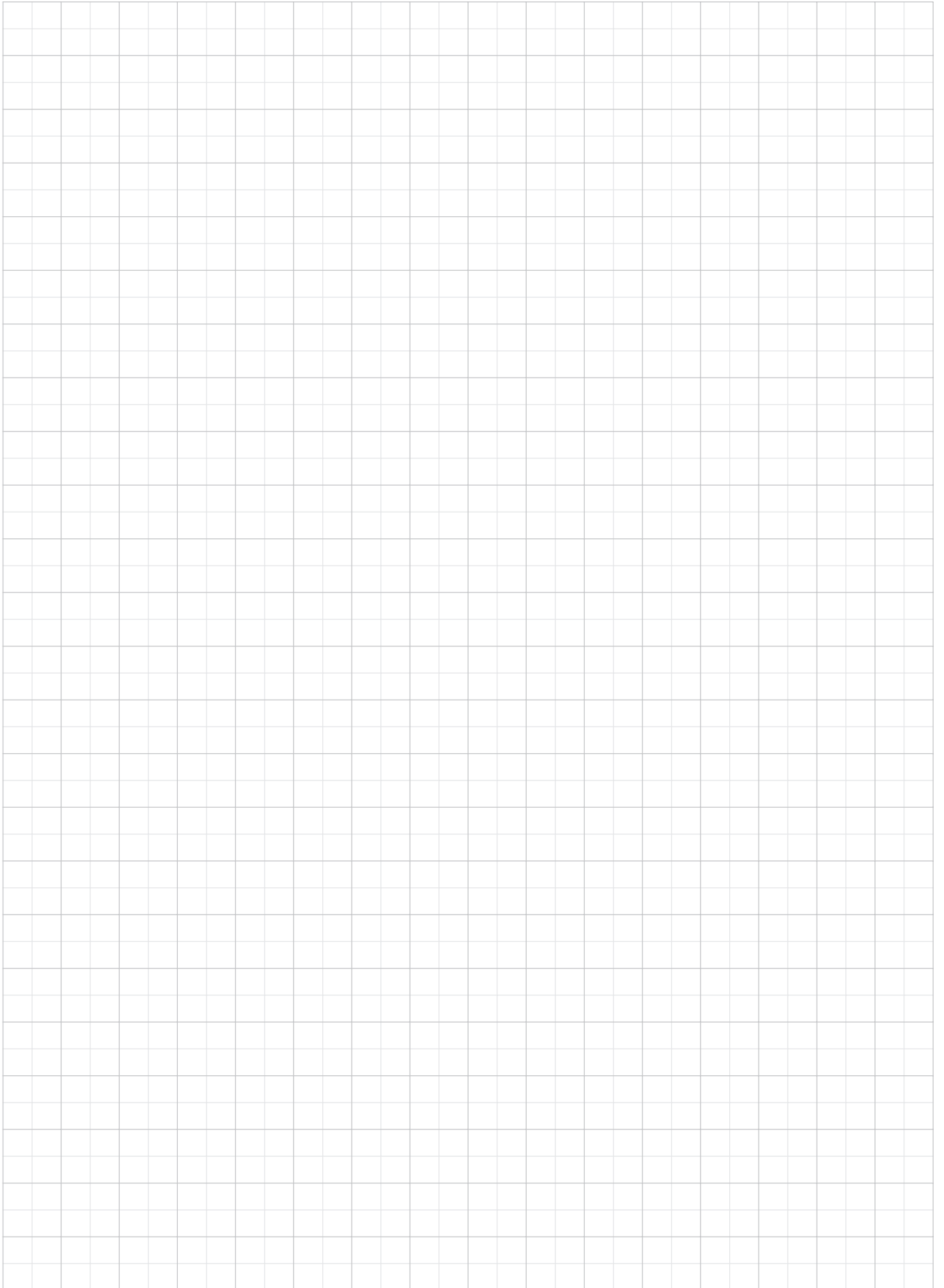
³⁾ $3 \times U_{\text{Mains}} \times 0,95$

| | CDE/CDB34.088,L CDE/CDB34.108,L | CDE/CDB34.140,L CDE/CDB34.168,L CDE/CDB34.208,L |
|-------------------------|---|---|
| Cooling method | Liquid-cooled | |
| Mounting method | Vertical mounting with unhindered air flow, end-to-end | |
| Cooling air temperature | 45 °C (at 4 kHz power stage switching frequency) 40 °C (at >8 kHz) | |
| Weight | 28 kg | 32 kg |
| Dimensions | BG7 [mm] | BG7a [mm] |
| B (width) | 280 | 280 |
| H (height) | 600 | 600 |
| T (depth) | 201 | 281 |
| A ₁ | 200 | 200 |
| A ₂ | 200 | 200 |
| C | 581 | 581 |
| E ₁ | 66.5 | 66.5 |
| F ₁ | 175 | 175 |
| F ₂ | 70 | 70 |
| G | 73.5 | 73.5 |
| SØ | 3/8" | 3/8" |
| D1Ø | Ø 9.5 | Ø 9.5 |
| D2Ø | Ø 15 | Ø 15 |

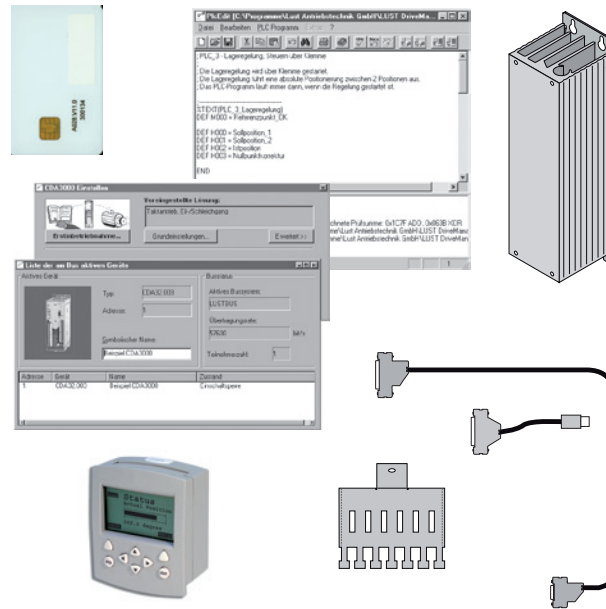


| Variant | Resistance [Ω] | Continuous braking power [kW] | Peak braking power [kW] |
|-------------------|----------------|-------------------------------|-------------------------|
| CDE/B 34.088,L,BR | 15 (3 x 5 Ω) | 3.0 | 111 |
| CDE/B 34.108,L,BR | | 3.0 | 111 |
| CDE/B 34.140,L,BR | | 3.0 | 111 |
| CDE/B 34.168,L,BR | | 3.0 | 111 |
| CDE/B 34.208,L,BR | | 3.0 | 111 |

Space for your own notes

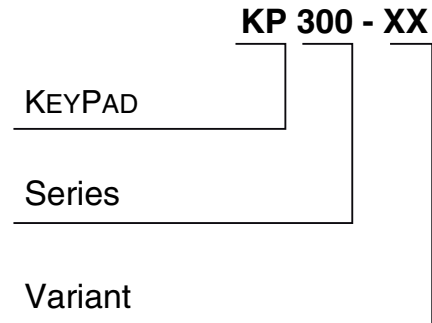


Accessories for Positioning Controllers



| Contents | Type | Page |
|----------------------------|-------------------------------|------|
| Operator control modules | KP300 | 46 |
| Memory card | SC-XL | 47 |
| PLC programming | PLC Editor | 48 |
| PC environment | DriveManager | 49 |
| Connecting cable | CCD-SUB90X | 50 |
| Shield connection | ST02 ... ST06 / SMC50 / SMB50 | 51 |
| Heat sinks for BG1 and BG2 | HS32.1BR / HS32.100 | 53 |

Operator control modules

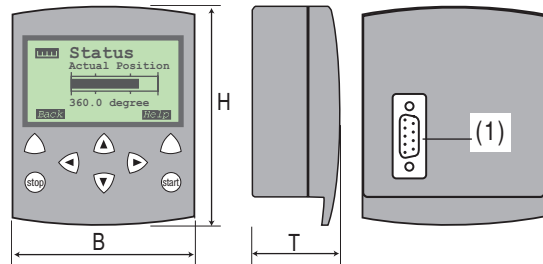


KP300

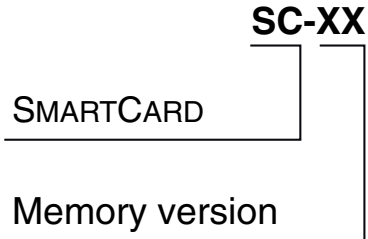
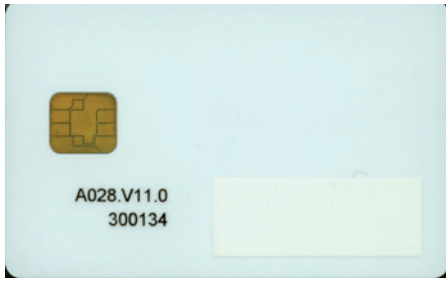
Order code

| Order designation | Summary |
|-------------------|---|
| KP300 | KeyPad with graphical display (128 x 64 pixels) for parameter setting, actual value display and serial commissioning of positioning controllers. Graphical display including device status and parameter texts. Language: German or English (configurable). The KeyPad supports the SmartCard "SC-XL". |

| Mechanism KP300 | |
|-------------------------|---|
| Dimensions (see figure) | 70 x 84 x 37 mm (B x H x T) |
| Weight | 120 g |
| Connection (RS232) | |
| Standard (1) | Can be plugged directly into drive unit |



SmartCard memory card



| Order designation | Summary |
|-------------------|---|
| SC-XL | The data set of the positioning controller can be stored and easily transferred to other positioning controllers. Suitable for KP300. |

| System layout | Explanation |
|---------------|---|
| | <ul style="list-style-type: none"> (1) Terminal X4 for operator control modules or PC port (RS232 interface) (2) SC-XL chip card (3) Operator control module KP300 (4) PC with DriveManager user software |

PLC software package



PLC Editor

PC user software

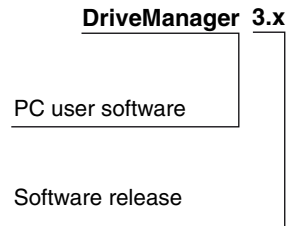
PLC Editor

Order code

| Tech. data | | PLC Editor |
|------------------------------------|--|------------|
| Software features | The "PLC Editor" PC user software is an addition to the DriveManager: <ul style="list-style-type: none"> • Editor for creating a PLC sequential program • Program handling <ul style="list-style-type: none"> - Loads/stores/prints/creates programs - Loads/stores a program from/to a DriveManager record - Loads/stores a program from/to a connected drive device • Online help with for PLC Editor and for the command syntax, with examples | |
| Hardware and software requirements | <ul style="list-style-type: none"> • Microsoft Windows® 95/98/ME or Windows® NT, 2000, XP • At least 32 MB RAM (64 MB recommended) • CD-ROM drive (recommended min. 24x read) | |
| Supply package | <ul style="list-style-type: none"> • 1 CD-ROM with PLC program editor | |
| Languages | <ul style="list-style-type: none"> • On installation you can choose between German or English. | |

| Order designation | | Licences |
|-------------------|--|----------|
| PLC Editor | <ul style="list-style-type: none"> - Contains the full functionality for programming the PLC. The software licence permits simultaneous use at any number of workstations.. | |

PC user software



DriveManager 3.x Order code

| Tech. data | | DriveManager 3.x |
|------------------------------------|---|------------------|
| Software features | The "DriveManager" PC user software provides the following functions <ul style="list-style-type: none"> • Setup screen based highly user-friendly handling • Status display to monitor the operation-specific actual and reference values • Direct control of the inverter by PC • User-friendly four-channel digital scope for real-time recording of actual values such as current curve or v/t diagram • Comparison function for problem solving, data administration and print functions | |
| Hardware and software requirements | <ul style="list-style-type: none"> • Microsoft Windows® 95/98/ME or Windows® NT, 2000, XP • At least 32 MB RAM (64 MB recommended) • CD-ROM drive (recommended min. 24x read) | |
| Supply package | <ul style="list-style-type: none"> • 1 CD-ROM for installation of the DriveManager user software • All user manuals and software descriptions for the various device series as PDF documents | |
| Languages | <ul style="list-style-type: none"> • On installation you can choose between German or English. | |

| Order designation | | Licences |
|-----------------------|---|----------|
| DriveManager 3.x TEST | <ul style="list-style-type: none"> • Contains the full functionality and is intended for test and demo purposes. The runtime is limited to 180 days from date of installation. | |
| DriveManager 3.x | <ul style="list-style-type: none"> • Contains the full functionality for parameter-setting, control and monitoring. The runtime is unlimited. The software licence permits simultaneous use on any number of workstations. | |

Connecting cable



CCD-SUB 90x

Connecting Cable

Cable type D-SUB

Cable length in metres

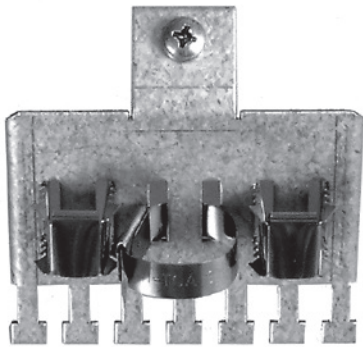
CCD-SUB 90x

Order code

| Order designation | Summary |
|-------------------|---|
| CCD-SUB 901 | Cable for link between servocontroller and KeyPad or drive controller and PC wit DriveManager, length 1 m |
| CCD-SUB 902 | Cable for link between servocontroller and KeyPad or drive controller and PC wit DriveManager, length 2 m |
| CCD-SUB 903 | Cable for link between servocontroller and KeyPad or drive controller and PC wit DriveManager, length 3 m |

| System layout | Explanation |
|---------------|---|
| | <ul style="list-style-type: none"> (1) Terminal X4 for KeyPad or PC port (RS232 interface) (2) SC-XL chip card (3) Operator control module KP300 (4) PC with DriveManager user software (5) Connecting cable CCD-SUB90X, x.x |

Shield connection



ST

Shield Terminator

Size

ST02 (incl. metal clips, metal cable band and screw)

Order code

| Order des. | ST02 | | ST04 | | ST05 | ST06 |
|--------------------------------------|--------------------------------|--|--------------------------------|--------------------------------|--------------------------------|--|
| Suitable for positioning controllers | CDE/CDB32.003 CDE/CDB32.004 | CDE/CDB32.008 CDE/CDB34.003 CDE/CDB34.005 CDE/CDB34.006 | CDE/CDB34.008 CDE/CDB34.010 | CDE/CDB34.014 CDE/CDB34.017 | CDE/CDB34.024 CDE/CDB34.032 | CDE/CDB 34.044 CDE/CDB 34.058 CDE/CDB 34.070 |
| Power of positioning controllers | 0.375...0.75 kW | 0.75 .. 2.2 kW | 3.0 ... 4.0 kW | 5.5 ... 7.5 kW | 11.0 ... 15.0 kW | 22 ... 37 kW |
| H (height) | 238 mm | 263 mm | 345 mm | 345 mm | 355 mm | 510 mm |
| Diagram | | | | | | |

3



NOTE: the positioning controllers in size 7 (cable cross-sections > 32 mm²) we recommend connecting the shields of the motor/mains lead directly to a shield rail in the cabinet.

Metal clips



SMC

Shield Metal Clip

360° contacts

**Quantity of
Packing unit**

SMC50

Order code

| Order designation | Packing unit | Suitable for EMC shielding | Usable for cable shield diameter | Material |
|-------------------|--------------|----------------------------|----------------------------------|--------------|
| SMC50 | Pack of 50 | ST xx | < 12 mm ² | Spring steel |

Metal cable band



SMB

Shield Metal Binder

360° contacts

**Quantity of
Packing unit**

SMC50

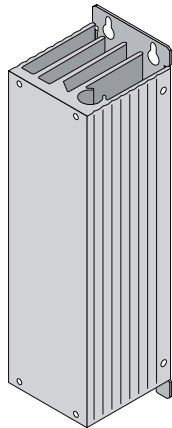
Order code

| Order designation | Packing unit | Suitable for EMC shielding | Usable for cable shield diameter | Material |
|-------------------|--------------|----------------------------|----------------------------------|--------------|
| SMC50 | Pck of 50 | ST xx | < 12 mm ² | Spring steel |

System layout



Heat sink/braking resistor for BG1



SMC50

HS 3 .

Heat Sink

Series and Voltage

Size

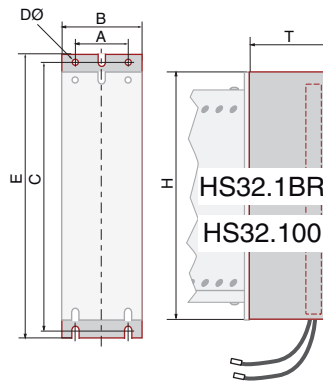
Braking resistor

Order code

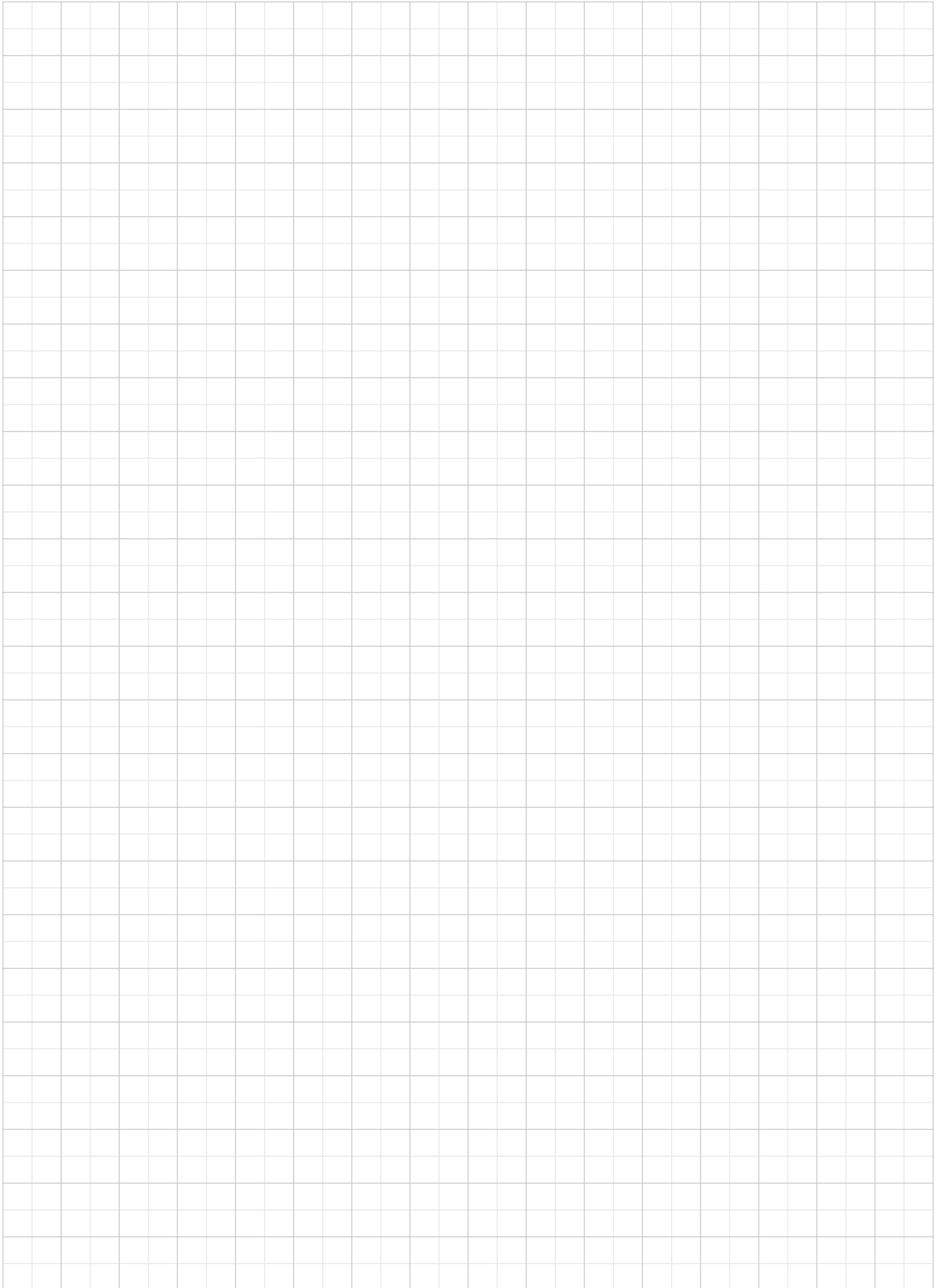
| Tech. data | HS32.1BR | HS32.100 |
|---|----------------------|--------------------------------|
| Continuous braking power when mounted on positioning controller | CDE/CDB32.004 / 25 W | - |
| Braking resistor | 162 Ω | - |
| Peak braking power | 0.9 kW | - |
| Heat sink for end-to-end mounting of positioning controllers | - | CDE/CDB32.003 CDE/CDB32.004 |

| Order des. | Dimensions | B (width) [mm] | H (height) [mm] | T (depth) [mm] | A [mm] | C [mm] | D [mm] | E [mm] |
|------------|---|----------------|-----------------|----------------|--------|--------|--------|--------|
| HS32.1BR | Heat sink with integrated braking resistor (230 V system) | 70 | 215 | 75 | 40 | 235 | ∅ 4.8 | 245 |
| HS32.100 | heat sink | | | | | | | |

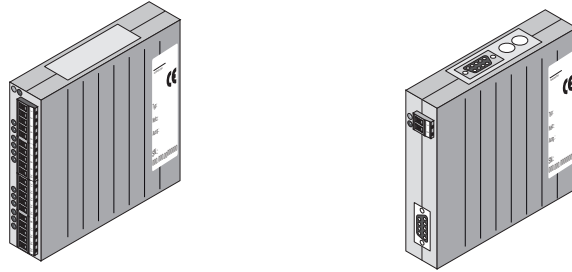
Dimensional drawing



Space for your own notes

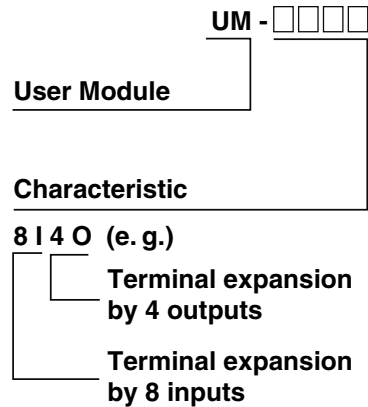


User and communication modules



| Contents | Type | Page |
|-----------------------|---------|------|
| User modules | UM-8140 | 56 |
| Communication modules | CM-DPV1 | 57 |

User module (I/O expansion)

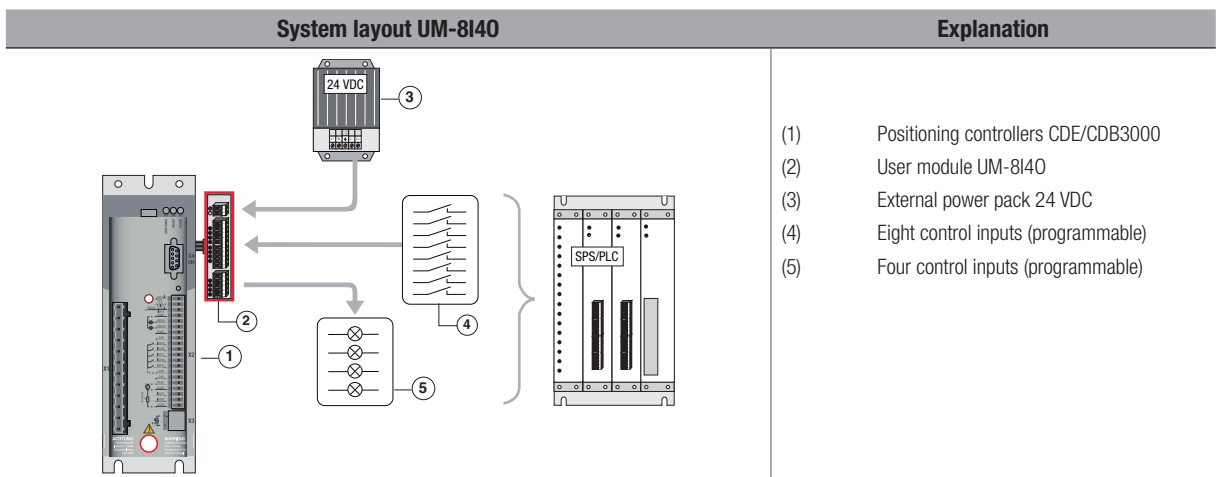


UM-8140

Order code

| Order designation | Summary |
|-------------------|--|
| UM-8140 | Terminal expansion by eight inputs and four outputs, function of inputs/outputs programmable |

| Technical data | | UM-8140 | |
|------------------------|-------------------------------|-----------------------------------|--|
| Voltage supply | | 24 VDC ±20 % | |
| Current consumption | | 0.6 A | |
| Eight inputs | Input voltage for signal "0" | from 0 to 5 V | |
| | Input voltage for signal "1" | >15 V | |
| | Input current with signal "1" | 3.5 mA to 7.0 mA (6 mA at 24 VDC) | |
| Four outputs | Output current | Permissible range with signal "1" | min. 5 mA max. 0.5 A |
| | | Mean | 125 mA |
| | | Total current | 0.5 A |
| | | Short-circuit current per output | max. 1.2 A short-time, short-circuit-proof |
| Dimensions (w x h x d) | | 28 x 90 x 90 [mm] | |



Communication module (PROFIBUS)



CM-

Communication Module

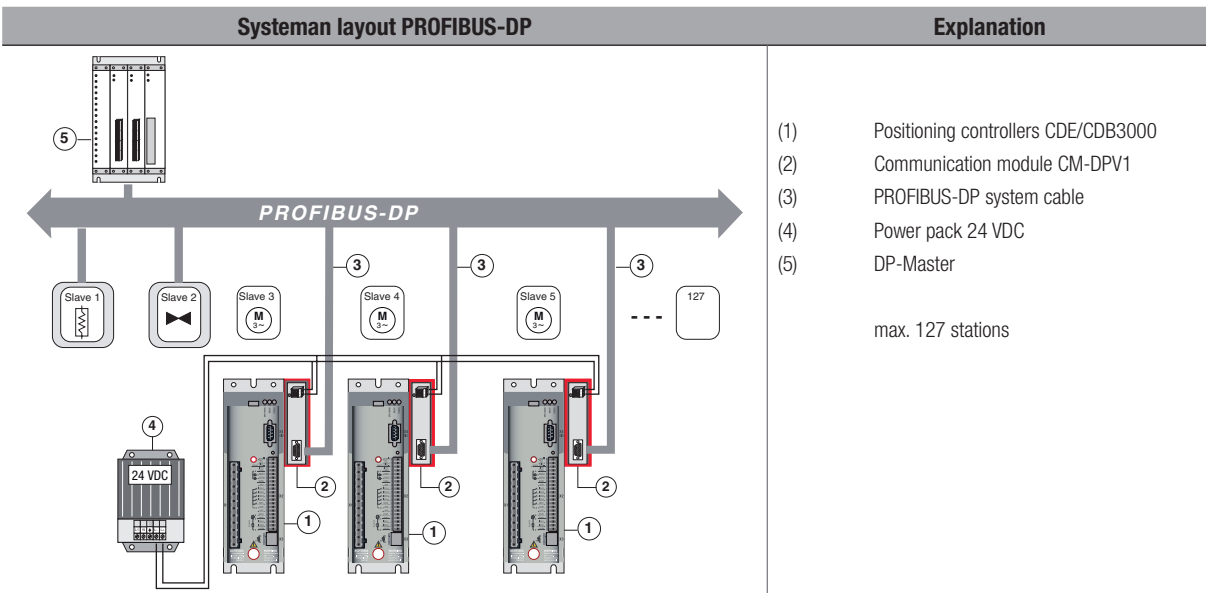
Bus and/or protocol

CM-DPV1

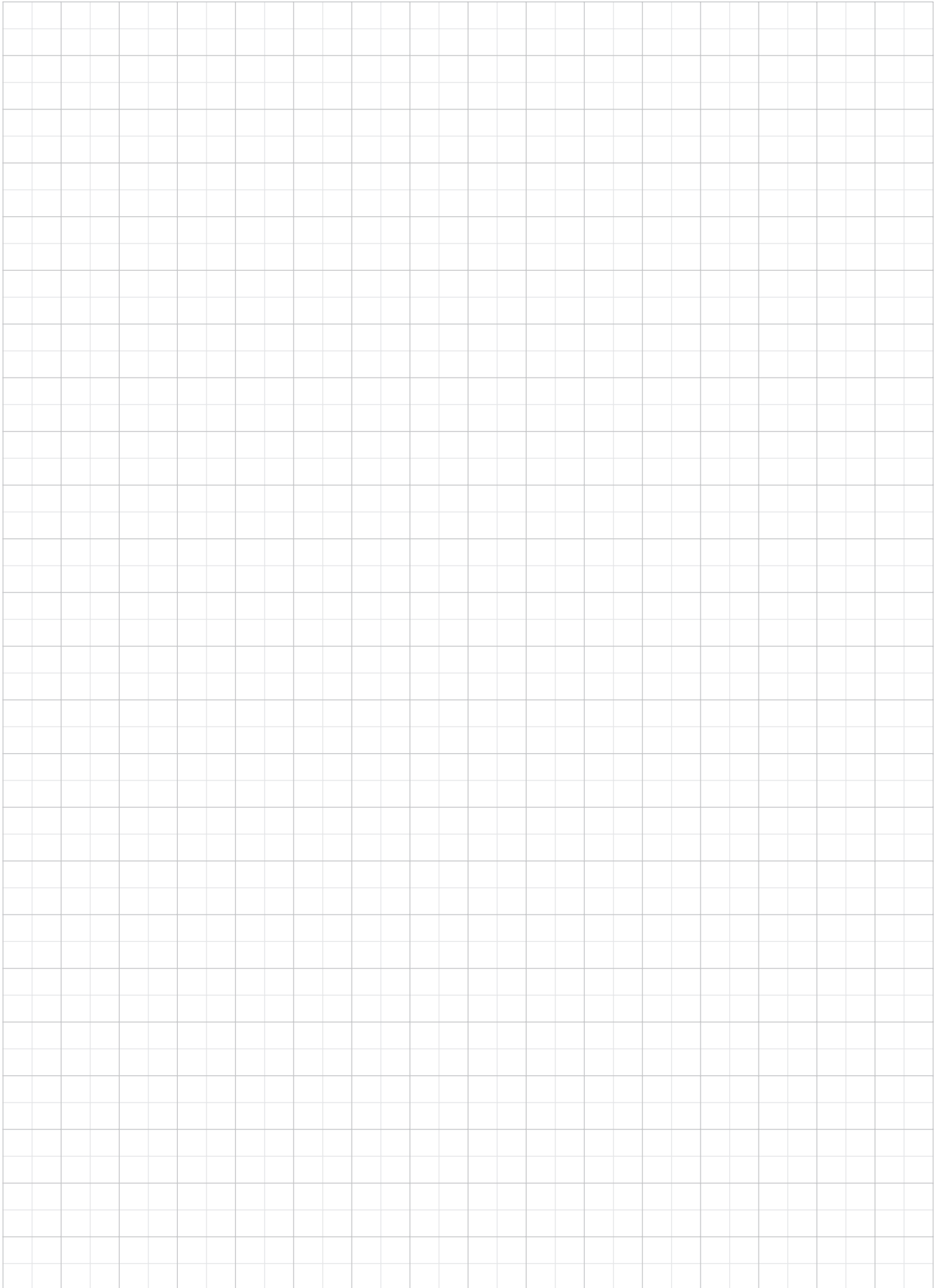
Order code

| Order designation | Summary |
|-------------------|--|
| CM-DPV1 | Communication module for PROFIBUS-DPV1 (you will find the current GSD file at www.lti-i.com) |

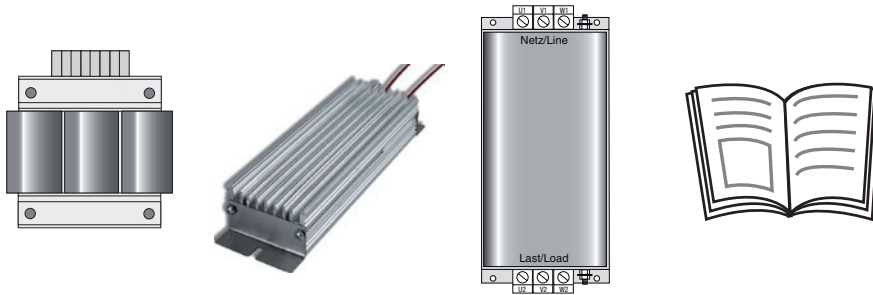
| Technical data | CM-DPV1 |
|----------------------------|---|
| Standardization | EN 50170 |
| Communication | Directive 2.084 |
| Device profile | PROFIBUS |
| Transfer rate/ line length | 9.6 kBit/s up to 1200 m / 12 MBit/s up to 100 m |
| Voltage supply | 18 ... 30 VDC |
| Current consumption | max. 250 mA |
| Dimensions (w x h x d) | 28 x 90 x 90 [mm] |



Space for your own notes



Supplementary Components



| Contents | Type | Page |
|-------------------|---|------|
| Line reactors | LR 32.5 ... LR32.14-UR / LR34.4-UR ... LR34.168-UR | 60 |
| Braking resistors | BR-200.01, 540, UR ... BR-026.10, 650, UR | 63 |
| Mains filters | EMCxxx.X - UR | 66 |
| User information | Product DVD | 69 |

Line reactors



LR34.10

LR 3 . . . - . . .

Line Reactor

Series and Voltage

Rated current

UL recognition

Order code

| Ambient conditions | LR 32. xxx-UR | LR 34. xxx-UR |
|---------------------------|---|---|
| Rated voltage | 1 x 230 V, 50/60 Hz ¹⁾ | 3 x 400 V / 460 V / 480 V, 50/60 Hz ¹⁾ |
| Overload factor | 1.8 x I _N for 40 s | 2 x I _N for 30 s |
| Ambient temperature | -25 °C to +45 °C, with power reduction up to 60 °C (1.3 % / °C) | |
| Mounting height | 1000 m, with power reduction up to 4000 m (6 % / 1000 m) | |
| Relative air humidity | 15 ... 95 %, condensation not permitted | |
| Storage temperatur | -25 °C up to +70 °C | |
| Protection | IP00 | |
| Short-circuit voltage | U _K = 4 % at 230 V = 9.2 V | U _K 4 % (corresponding to 9.24 V at 400 V) applies to controllers with I _N = 4.0 A to 32 A U _K 2 % (corresponding to 4.6 V at 400 V) applies to controllers with I _N = 45 A to 210 A |
| Permissible contamination | P2 a per EN 61558-1 | P2 as per EN 61558-1 |
| Thermal configuration | I _{eff} < I _N | |
| UL recognition | Variant LR3X.xxx-UR has UL recognition for the USA and Canadian markets | |

1) At mains frequency 60 Hz the power loss increases by approx. 5 - 10 %

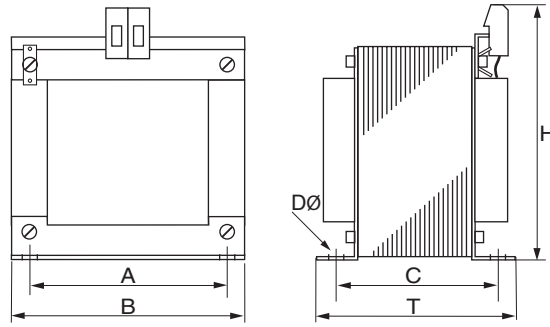
Single-phase line reactors

| Suitable for positioning controllers | Tech. data | Rated current [A] | Power loss tot. [W] | Inductance [mH] | Weight | Connection [mm ²] |
|--------------------------------------|------------|-------------------|---------------------|-----------------|--------|-------------------------------|
| CDE/CDB32.003 CDE/CDB32.004 | LR32.5 | 5 | 11 | 9.76 | 0.7 | 4 |
| CDE/CDB32.004 CDE/CDB32.006 | LR32.8 | 8 | 10 | 3.66 | 0.8 | 4 |
| CDE/CDB32.008 | LR32.14-UR | 14 | 16 | 2.1 | 1.5 | 4 |

Single-phase line reactors

| Dimension [mm] | LR32.5 | LR32.8 | LR32.14-UR |
|----------------|--------|--------|------------|
| B (width) | 60 | 60 | 85 |
| H (height) | 75 | 75 | 100 |
| T (depth) | 57 | 57 | 65 |
| A | 44 | 44 | 64 |
| C | 46 | 46 | 50 |
| D Ø | 3.6 | 4.8 | 4.8 |

Dimensional drawings



Three-phase line reactors

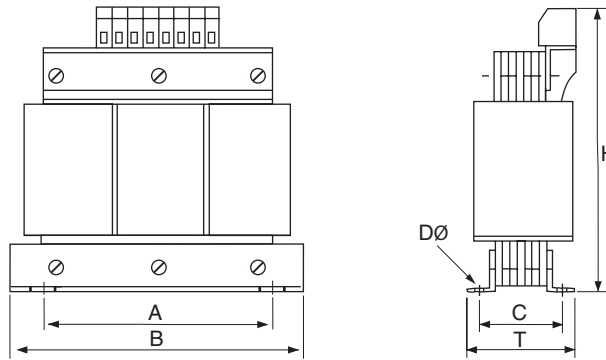
| Suitable for positioning controllers | Tech. data | Rated current [A] | Power loss tot. [W] | Inductance [mH] | Weight | Connection [mm ²] |
|--------------------------------------|---------------------------|-------------------|---------------------|-----------------|--------|-------------------------------|
| CDE/CDB34.003 | LR34.4-UR | 4.2 | 20 | 7 | 2.5 | 4 |
| CDE/CDB34.005 CDE/CDB34.006 | LR34.6-UR | 6 | 25 | 4.88 | 2.5 | 4 |
| CDE/CDB34.008 | LR34.8-UR | 8 | 25 | 3.66 | 2.5 | 4 |
| CDE/CDB34.010 | LR34.10-UR | 10 | 35 | 2,93 | 2.5 | 4 |
| CDE/CDB34.014 | LR34.14-UR | 14 | 45 | 2.09 | 4.0 | 4 |
| CDE/CDB34.017 | LR34.17-UR | 17 | 45 | 1.72 | 4.0 | 4 |
| CDE/CDB34.024 | LR34.24-UR | 24 | 50 | 1.22 | 5.0 | 16 |
| CDE/CDB34.032 | LR34.32-UR | 32 | 70 | 0,92 | 6.0 | 16 |
| CDE/CDB34.044 | LR34.44-UR ¹⁾ | 45 | 60 | 0.33 | 5.0 | 16 |
| CDE/CDB34.058 | LR34.58-UR ¹⁾ | 60 | 70 | 0.25 | 7.0 | 16 |
| CDE/CDB34.070 | LR34.70-UR ¹⁾ | 72 | 80 | 0.20 | 10.0 | 16 |
| CDE/CDB34.088 | LR34.88-UR ¹⁾ | 90 | 120 | 0.16 | 13 | 35 |
| CDE/CDB34.108 | LR34.108-UR ¹⁾ | 110 | 140 | 0.13 | 15 | 35 |
| CDE/CDB34.140 | LR34.140-UR ¹⁾ | 143 | 160 | 0.10 | 25 | 70 |
| CDE/CDB34.168 | LR34.168-UR ¹⁾ | 170 | 170 | 0.09 | 25 | 70 |
| CDE/CDB34.208 | LR.34.210-UR | 210 | 270 | 0.07 | 28 | M10 ²⁾ |

1) Short-circuit voltage 2 % uk bei 400 V = 4,6 V
 2) Connection to Cu strap with bore for thread

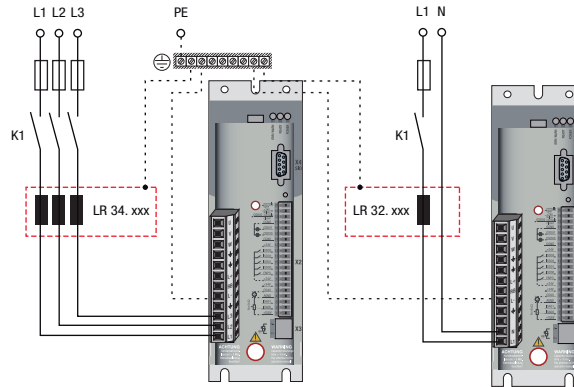
Three-phase line reactors

| Dimension [mm] | LR34.4-UR | LR34.6-UR | LR34.8-UR | LR34.10-UR | LR34.14-UR | LR34.17-UR | LR34.24-UR | LR34.32-UR | LR34.44-UR | LR34.58-UR | LR34.70-UR | LR34.88-UR | LR34.108-UR | LR34.140-UR | LR34.168-UR | LR34.210-UR |
|----------------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|
| B (width) | 125 | 125 | 125 | 125 | 155 | 155 | 155 | 190 | 155 | 190 | 190 | 230 | 230 | 240 | 240 | 265 |
| H (height) | 130 | 130 | 130 | 130 | 160 | 160 | 170 | 200 | 170 | 200 | 240 | 300 | 300 | 330 | 330 | 230 |
| T (depth) | 75 | 75 | 75 | 75 | 80 | 80 | 120 | 110 | 120 | 120 | 110 | 160 | 180 | 190 | 190 | 210 |
| A | 100 | 100 | 100 | 100 | 130 | 130 | 130 | 170 | 130 | 170 | 170 | 180 | 180 | 190 | 190 | 265 |
| C | 55 | 55 | 55 | 55 | 59 | 59 | 72 | 58 | 72 | 68 | 78 | 98 | 122 | 125 | 125 | 126 |
| D Ø | 5 | 5 | 5 | 5 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 11 | 11 | 11 |

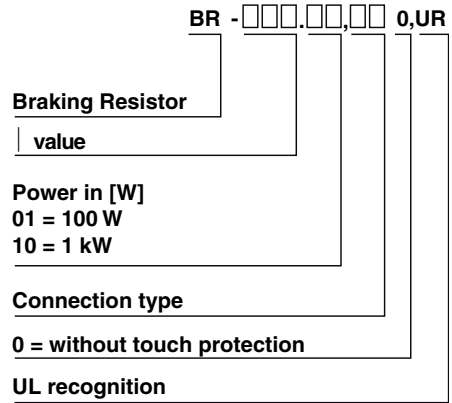
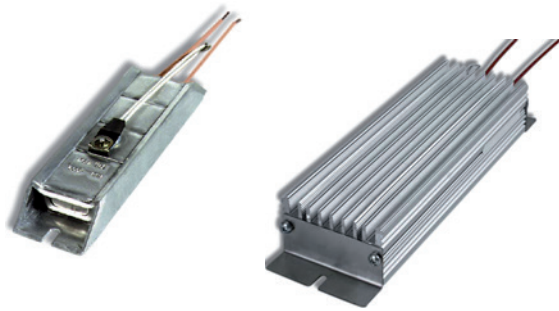
Dimensional drawing:



System layout



Braking resistors



BR-090.01.540,UR

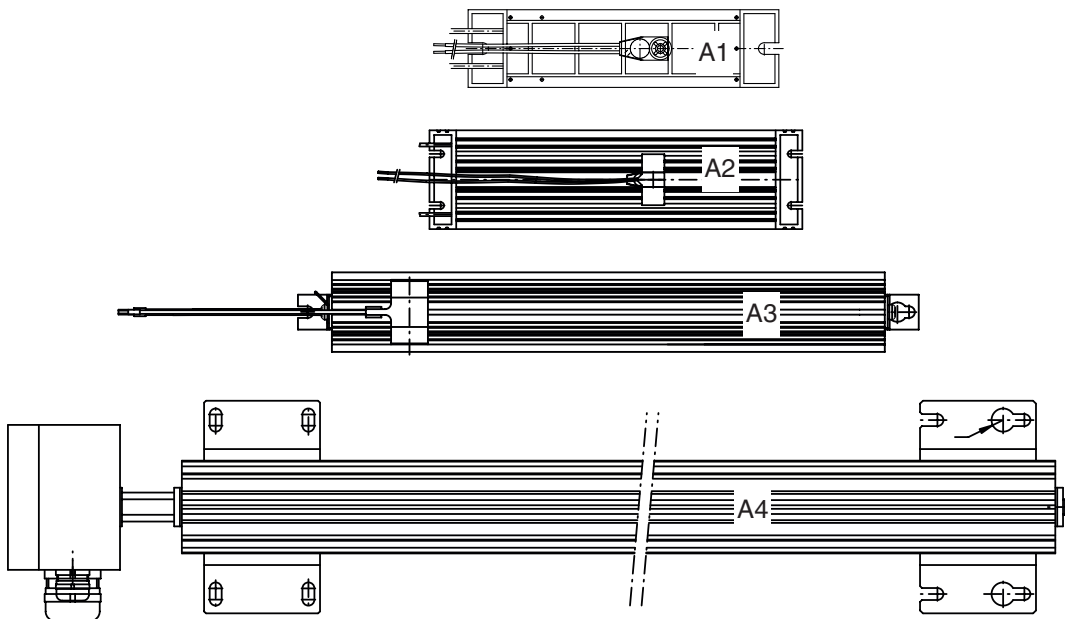
BR-090.03.540,UR

Order code

Technical data

| Design | as per diagram A1 | as per diagram A2 | as per diagram A3 | as per diagram A4 |
|------------------------|---|-------------------|-------------------|----------------------------|
| Surface temperature | > 250 °C | > 250 °C | > 250 °C | > 250 °C |
| Touch protection | no | no | no | no |
| Voltage | max. 970 V DC | max. 970 V DC | max. 970 V DC | max. 970 V DC |
| High-voltage strength | 4000 V DC | 4000 V DC | 4000 V DC | 4000 V DC |
| Temperature monitoring | yes, with bimetallic protector (breaking capacity 0.5 A/ 230 V) | | | |
| Acceptance tests | CE-compliant; UL recognition | | | |
| Connection | 1 m long PTFE-insulated flex wire | | | Terminal box with PG gland |

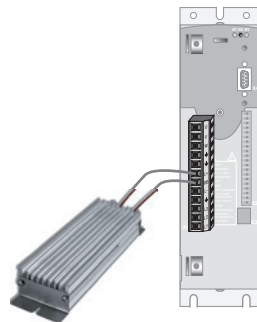
Diagrams



Braking resistor

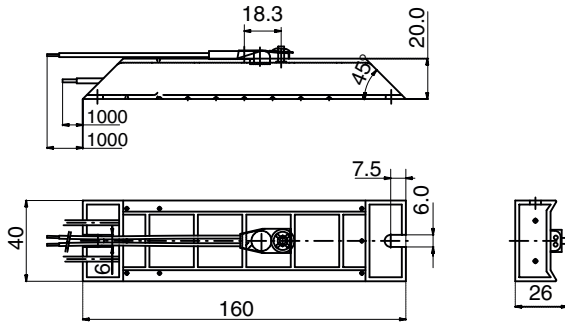
| Order designation | Continuous braking power [W] | Resistance [$\Omega \pm 10\%$] | Peak braking power [W] | Protection | Dimensional drawing |
|-------------------|------------------------------|----------------------------------|------------------------|------------|---------------------|
| | | | 750 VDC | | |
| BR-200.01, 540,UR | 35 | 200 | 2800 | IP54 | A1 |
| BR-200.02, 540,UR | 150 | 200 | 2800 | IP54 | A2 |
| BR-200.03, 540,UR | 300 | 200 | 2800 | IP54 | A3 |
| BR-090.01, 540,UR | 35 | 90 | 6250 | IP54 | A1 |
| BR-090.02, 540,UR | 150 | 90 | 6250 | IP54 | A2 |
| BR-090.03, 540,UR | 300 | 90 | 6250 | IP54 | A3 |
| BR-090.10, 650,UR | 1000 | 90 | 6250 | IP65 | A4 |
| BR-026.01.540,UR | 35 | 26 | 21600 | IP54 | A1 |
| BR-026.02.540,UR | 150 | 26 | 21600 | IP54 | A2 |
| BR-026.03.540,UR | 300 | 26 | 21600 | IP54 | A3 |
| BR-026.10.650,UR | 1000 | 26 | 21600 | IP65 | A4 |

System layout

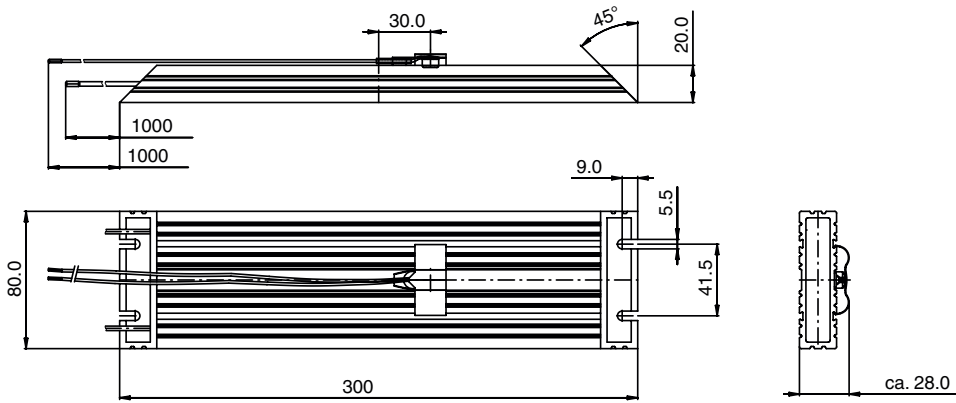


| Dimension [mm] | BR-XXX.01.540,UR | BR-XXX.02.540,UR | BR-XXX.03.540,UR | BR-0XX.10.650,UR |
|----------------|------------------|------------------|------------------|------------------|
| B (width) | 40 | 80 | 42 | 114 |
| H (height) | 160 | 300 | 320 | 865 |
| T (depth) | 26 | 28 | 122 | 105 |
| Diagram | A1 | A2 | A3 | A4 |

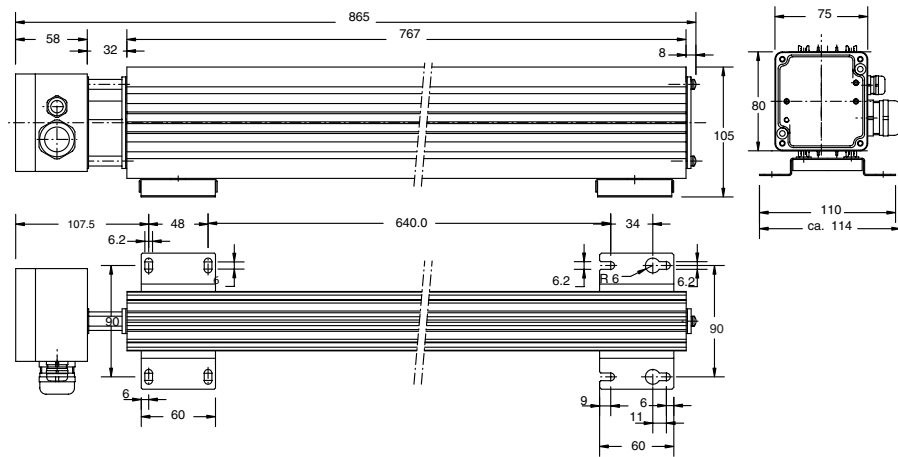
Dimensional drawing A1



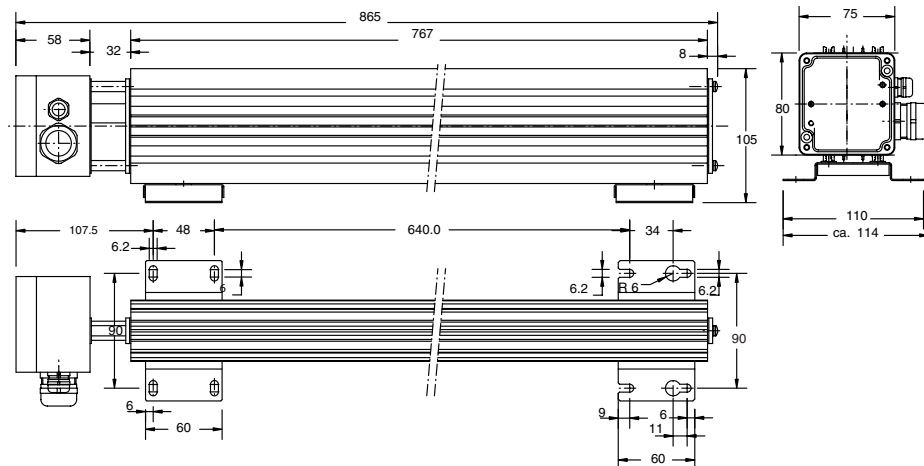
Dimensional drawing A2



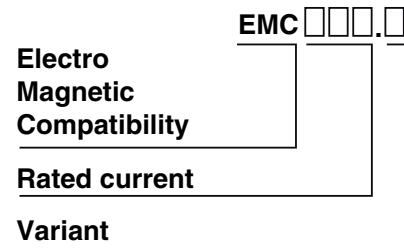
Dimensional drawing A3



Dimensional drawing A4



Mains filters



EMC180.1-UR

Order code

| Ambient conditions | EMCxxx.x-UR |
|--|--|
| Rated voltage | 3 x 400 V / 460 V / 480 V, 50/60 Hz |
| Ambient temperature | typically -25 °C to +40 °C (max. +45 °C) |
| Mounting height | 1000 m, with power reduction up to 4000 m (6 % pro 1000 m) |
| Relative air humidity | 15 ... 85 %, condensation not permitted |
| Storage/Transport temperature | -25 °C to +70 °C / -40 °C to +85 °C |
| Protection | IP00 |
| Permissible contamination | P2 as per EN 61558-1 |
| UL recognition | CE-conformant; UL recognition |
| Radio frequency interference suppression to EN61800-3 -residential- | Motor cable length up to 100 m permitted |
| Radio frequency interference suppression to EN61800-3 -industrial- | Motor cable length up to 100 m permitted |

Three-phase mains filters

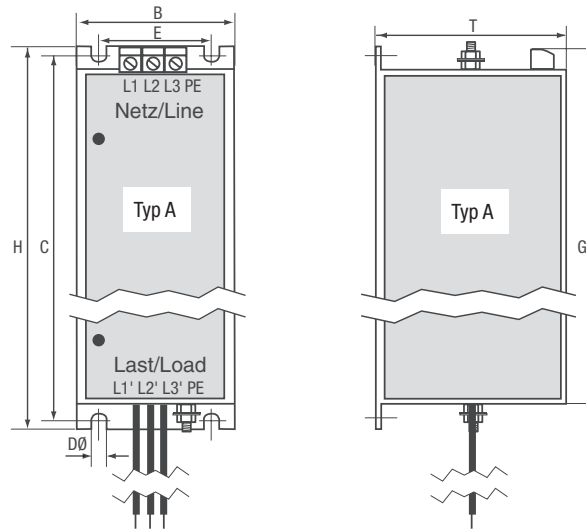
| Suitable for positioning controllers | Type | Rated current [A] | Power loss tot. [W] | Touch current [mA] | Weight [kg] | Terminals [mm ²] |
|--------------------------------------|-------------|-------------------|---------------------|--------------------|-------------|--------------------------------|
| CDE/B34.008 CDE/B34.010 | EMC10.0-UR | 10 | 12.5 | 1.2 | 1.7 | 0.2...4.0, PE M5 ¹⁾ |
| CDE/B34.014 CDE/B34.017 | EMC17.0-UR | 17 | 21 | 1.5 | 1.8 | 0.2...4.0, PE M5 ²⁾ |
| CDE/B34.024 CDE/B34.032 | EMC35.0-UR | 35 | 27 | 1.2 | 2.5 | 0.2...6.0, PE M5 ³⁾ |
| CDE/B34.044 CDE/B34.058 | EMC63.1-UR | 63 | 30 | 6.8 | 5.0 | 0.5...6.0, PE M6 |
| CDE/B34.070 CDE/B34.088 | EMC100.1-UR | 100 | 40 | 9.8 | 6.0 | 16...50, PE M8 |
| CDE/B34.108 CDE/B34.140 | EMC150.1-UR | 150 | 55 | 9.8 | 6.8 | 35...95, PE M8 |
| CDE/B34.168 | EMC180.1-UR | 180 | 15 | 9.6 | 7.0 | Busbars and PE M10 |
| CDE/B34.208 | EMC220.1-UR | 220 | 20 | 7.2 | 7.5 | Busbars and PE M10 |

1) Load side: Litz wire AWG 14, 2.08 mm², length 400 mm2) Load side: Litz wire AWG 12, 3.32 mm², length 400 mm3) Load side: Litz wire AWG 10, 5.26 mm², length 400 mm

Three-phase mains filters, dimensional drawings A1 and A2

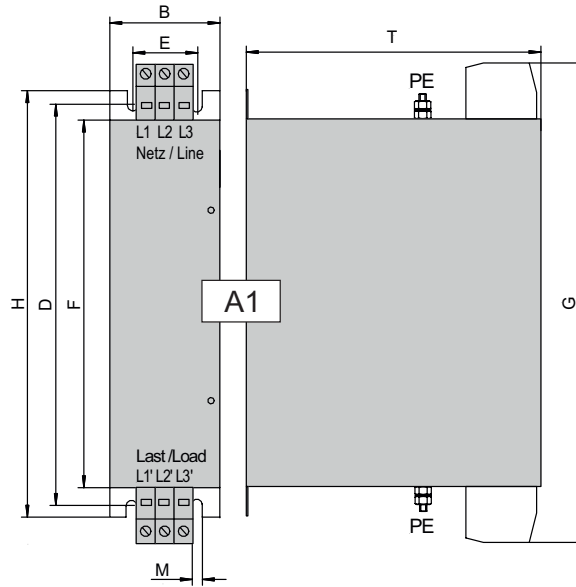
| Dimension [mm] | EMC 10.0 -UR | EMC 17.0 -UR | EMC 35.0 -UR | EMC 50.0 -UR | EMC 63.1 -UR | EMC 100.1 -UR | EMC 150.1 -UR | EMC 180.1 -UR | EMC 220.1 -UR |
|---------------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|
| Dimensional drawing | A | | | A1 | | | | A2 | |
| H (height) | 270 | 270 | 270 | 290 | 280 | 290 | 320 | 313 | 310 |
| B (width) | 55 | 55 | 55 | 90 | 62 | 75 | 90 | 200 | 200 |
| T (depth) | 100 | 100 | 100 | 98 | 180 | 200 | 220 | 120 | 120 |
| D | 260 | 260 | 260 | 275 | 270 | 270 | 300 | 180 | 180 |
| E | 36 | 36 | 36 | 76 | 40 | 45 | 60 | 180 | 180 |
| F | - | - | - | 260 | 240 | 250 | 280 | 160 | 160 |
| G | 260 | 260 | 260 | 290 | 305 | 336 | 380 | 410 | 410 |
| D Ø | 5,5 | 5,5 | 5,5 | 4,5 | M6 | M6 | M6 | 8,5 | 8,5 |
| H | - | - | - | - | - | - | - | 45 | 45 |
| I | - | - | - | - | - | - | - | 86 | 86 |
| K | - | - | - | - | - | - | - | 30 | 30 |
| L | - | - | - | - | - | - | - | 91 | 91 |

Dimensional drawing A

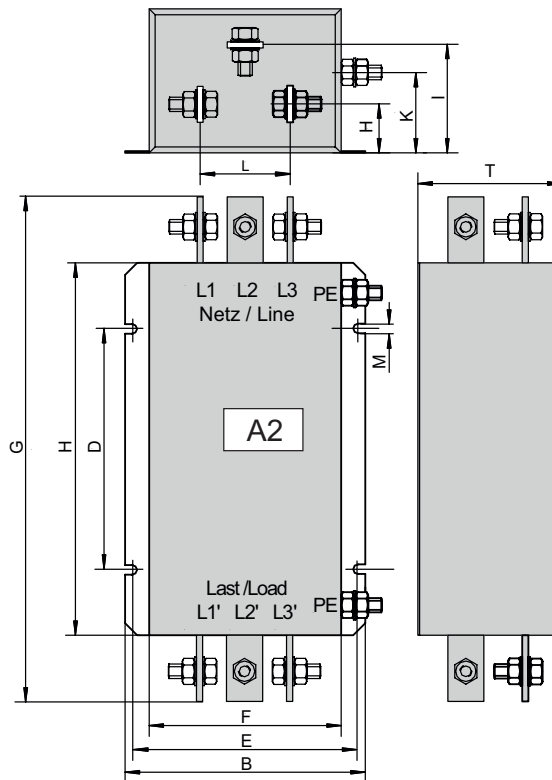


| Dimension [mm] | EMC 10.0 -UR | EMC 17.0 -UR | EMC 35.0 -UR | EMC 50.0 -UR | EMC 63.1 -UR | EMC 100.1 -UR | EMC 150.1 -UR | EMC 180.1 -UR | EMC 220.1 -UR |
|----------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|
|----------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|

Dimensional drawing A1



Dimensional drawing A2



User information on product DVD



Order no.: 1020.21B.x-xx

Note: Every CDE/CDB3000 unit shipped is accompanied by a product DVD.

Product DVD

The LTI Motion product DVD includes all the documents available for the CDE/CDB3000 series (see table). You will also find on it documentation relating to other product series, such as ServoOne and the catalogue for motor series LSH and LST. The product DVD incorporates additional information in sections headed “Company”, “Product”, “Support & Service” and “PR/News”.

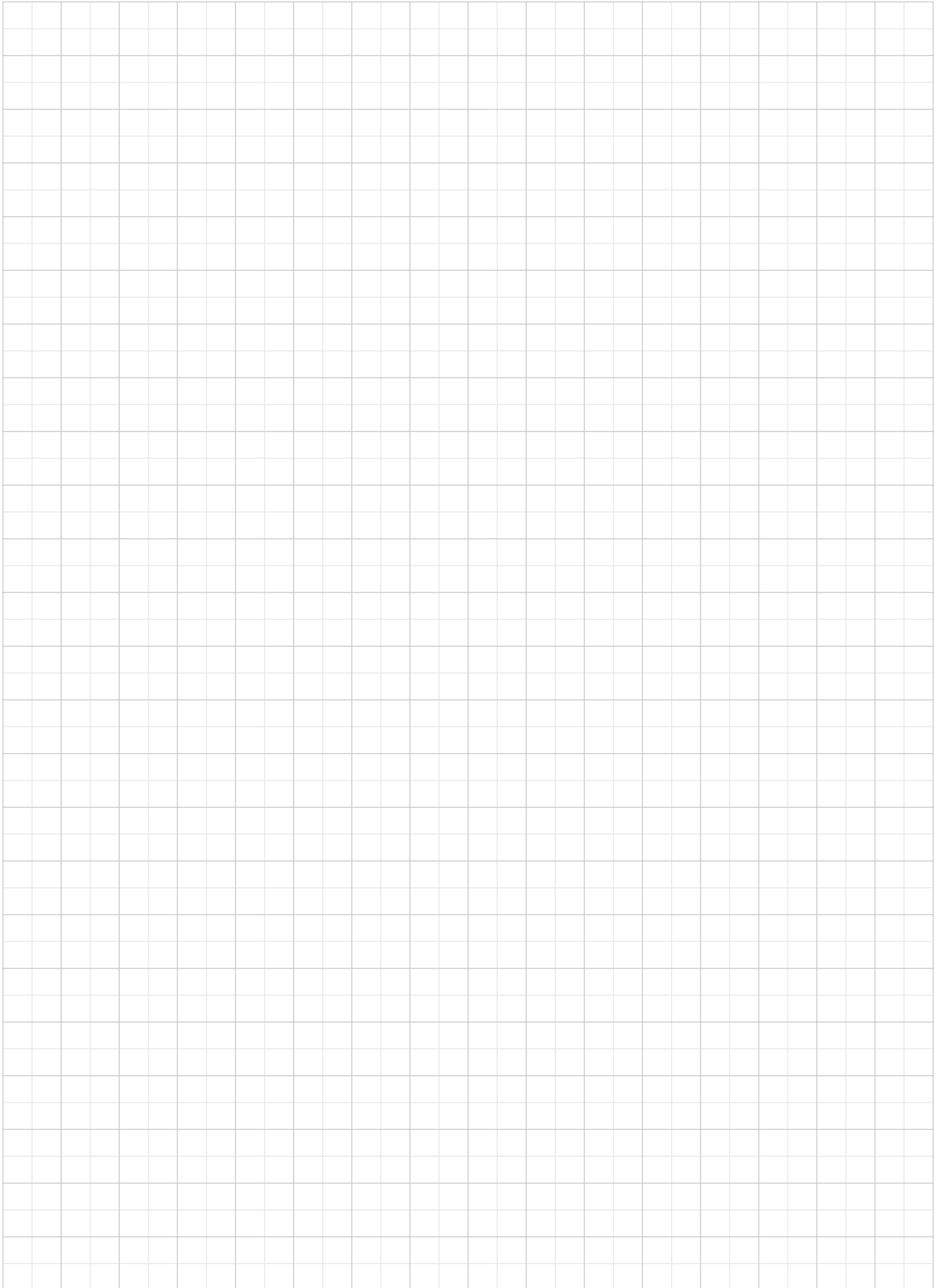
The following documents are included for the products presented in this catalogue:

| User information | User/Contents | Language |
|---------------------------------|---|-------------------------------|
| Operation Manual CDE/CDB3000 | Presents the mechanical and electrical installation of the CDE/CDB3000 positioning controller. Guide to quick and easy initial commissioning. | German/English/French/Italian |
| Application Manual CDE/CDB3000 | Describes adaptation of the drive system to the application (software-based). | German English |
| Prospekt CDE/CDB3000 | Die Positionierkünstler in der Economy Class | German |
| Brochure CDE/CDB3000 | The Positioning Experts in the Economy Class | English |
| Engineering Guide c-line Drives | This Guide is intended for users looking for background information relating to the engineering of drive system projects. | German English |
| Benutzerhandbuch | CANopen-Kommunikation | German |
| User Manual | CANopen communication | English |
| Benutzerhandbuch | CM-DPV1 Kommunikationsmodul für PROFIBUS-DP | German |
| User Manual | CM-DPV1 Communication module for PROFIBUS-DP | English |

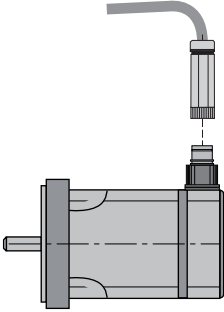


Note: The latest updated documents can be obtained from the “Downloads” section of our website (www.lt-i.com).

Space for your own notes



Servomotors

| Sketch | Contents | Type | Page |
|---|---|---------|------|
|  | LSH servomotor | LSH-050 | 72 |
| | | LSH-074 | |
| | | LSH-097 | |
| | | LSH-127 | |
| | LST servomotor | LST-037 | 73 |
| | | LST-050 | |
| | | LST-074 | |
| | | LST-097 | |
| | | LST-127 | |
| | | LST-158 | |
| | LSx motors - for functional extra low voltage 24/48 V | LST-037 | 74 |
| | | LSH-050 | |
| | | LSH-074 | |

The LSH motor - the power pack

Using a completely new winding technology known as concentrated winding, the new LSH generation of motors improves power density by between 30 % and 70 % compared with conventional technologies.

For the user this means up 100 % improvement in dynamics and significantly reduced space requirements combined with smooth running.

| Technical Data | Standstill torque | Rated torque | Rated current at 560 V | Rated current at 320 V | Rated speed |
|-------------------------|-------------------|--------------|------------------------|------------------------|----------------------------|
| Motor | M_0 [Nm] | M_N [Nm] | I_N [A] | I_N [A] | n_N [min ⁻¹] |
| LSH-050-1 ¹⁾ | 0.26 | 0.24 | - | 0.68 | 4500 |
| LSH-050-2 ¹⁾ | 0.53 | 0.45 | - | 1.11 | 4500 |
| LSH-050-3 ¹⁾ | 0.74 | 0.67 | - | 1.55 | 4500 |
| LSH-050-4 ¹⁾ | 0,95 | 0.84 | - | 1,90 | 4500 |
| LSH-074-1 ²⁾ | 0,95 | 0.86 | 1.28 | 1.43 | 3000 |
| LSH-074-2 ²⁾ | 1,90 | 1.60 | 1.46 | 2.40 | 3000 |
| LSH-074-3 ²⁾ | 3.30 | 2,90 | 2.30 | 4.00 | 3000 |
| LSH-074-4 ²⁾ | 4.20 | 3.10 | 2.30 | 3.70 | 3000 |
| LSH-097-1 ²⁾ | 4.10 | 3.20 | 2.80 | 5.00 | 3000 |
| LSH-097-2 ²⁾ | 6.30 | 4.60 | 3.60 | 7.00 | 3000 |
| LSH-097-3 ²⁾ | 8.60 | 6.10 | 4.80 | 8.3 | 3000 |
| LSH-127-1 ³⁾ | 11.60 | 8.40 | 7,90 | - | 3000 |
| LSH-127-2 ³⁾ | 14,90 | 10,90 | 9.60 | - | 3000 |
| LSH-127-3 ³⁾ | 18.70 | 14.30 | 13.10 | - | 3000 |
| LSH-127-4 ³⁾ | 27.30 | 21.00 | 14,90 | - | 3000 |

¹⁾ DC link voltage 320 V

²⁾ DC link voltage 320 V / 560 V

³⁾ DC link voltage 560 V



Note: For detailed electrical data and accessories, such as system cables, refer to the Servomotors order catalogue (article no.: 0814.05B.X-XX).

The LST motor - the versatile one

Featuring conventional winding technology, the LST motor combines all the advantages of a 6-pole synchronous servomotor.

- Well suited to speeds up to 9000 rpm. Special windings are possible on request.
- High overload capacity even at standstill based on efficient heat distribution in the stator packet.
- Increased rotor moment of inertia for torque adaptation.

| Technical Data | Standstill torque | Rated torque | Rated current at 560 V | Rated current at 320 V | Rated speed |
|----------------|-------------------|--------------|------------------------|------------------------|----------------------------|
| Motor | M_0 [Nm] | M_N [Nm] | I_N [A] | I_N [A] | n_N [min ⁻¹] |
| LST-037-1 | 0.10 | 0.09 | - | 0.56 | 6000 |
| LST-037-2 | 0.20 | 0.18 | - | 0,92 | 6000 |
| LST-037-3 | 0.30 | 0.27 | - | 0.89 | 6000 |
| LST-050-1 | 0.20 | 0.19 | - | 0.60 | 4500 |
| LST-050-2 | 0.40 | 0.36 | - | 0.88 | 4500 |
| LST-050-3 | 0.60 | 0.55 | - | 1.18 | 4500 |
| LST-050-4 | 0.80 | 0.72 | - | 1.47 | 4500 |
| LST-050-5 | 0,95 | 0.85 | - | 1.71 | 4500 |
| LST-074-1 | 0.65 | 0.60 | 0.64 | 1.04 | 3000 |
| LST-074-2 | 1.30 | 1.15 | 0,95 | 1.58 | 3000 |
| LST-074-3 | 1,90 | 1.60 | 1.26 | 2.20 | 3000 |
| LST-074-4 | 2.50 | 2.20 | 1.62 | 2.70 | 3000 |
| LST-074-5 | 3.00 | 2.50 | 1.82 | 3.00 | 3000 |
| LST-097-1 | 2.60 | 2.30 | 1.85 | 3.00 | 3000 |
| LST-097-2 | 3,90 | 3.30 | 2.60 | 4.30 | 3000 |
| LST-097-3 | 5.30 | 4.60 | 3.80 | 5,90 | 3000 |
| LST-097-4 | 7.50 | 6.40 | 4.40 | 8.10 | 3000 |
| LST-097-5 | 9.50 | 8.50 | 6.20 | 10.5 | 3000 |
| LST-127-1 | 6.60 | 5.70 | 4.00 | - | 3000 |
| LST-127-2 | 10.5 | 8.80 | 6.30 | - | 3000 |
| LST-127-3 | 13.5 | 11.0 | 9.50 | - | 3000 |
| LST-127-4 | 17.0 | 14.5 | 10.0 | - | 3000 |
| LST-127-5 | 22.0 | 17.0 | 13.0 | - | 3000 |
| LST-158-1 | 13.5 | 13.0 | 8.20 | - | 3000 |
| LST-158-2 | 19.0 | 17.0 | 10.6 | - | 3000 |
| LST-158-3 | 22.0 | 19.0 | 12.3 | - | 3000 |
| LST-158-4 | 29.0 | 24.0 | 14.7 | - | 3000 |
| LST-158-5 | 35.0 | 26.0 | 18.2 | - | 3000 |
| LST-190-1 | 27.0 | 21.0 | 13.5 | - | 3000 |
| LST-190-2 | 32.0 | 23.0 | 15.0 | - | 3000 |
| LST-190-3 | 40.0 | 26.0 | 17,9 | - | 3000 |
| LST-220-1 | 40.0 | 30.0 | 17.8 | - | 3000 |
| LST-220-2 | 68.0 | 50.0 | 31.1 | - | 3000 |
| LST-220-3 | 93.0 | 60.0 | 43.6 | - | 3000 |
| LST-220-4 | 115.0 | 50.0 | 29.3 | - | 3000 |



Note: For detailed electrical data and accessories, such as system cables, refer to the Servomotors order catalogue (article no.: 0814.05B.X-XX).

LSx motors - for functional extra-low voltage

The servomotors of the LSH and LST series are also available with motor windings for functional extra-low voltage to IEC 364 (VDE0100, part 410). Together with the servocontroller CDF3000, they offer the optimum combination for this voltage range.

| Technical Data | Standstill torque | Rated torque | Rated current at 24 V | Rated current at 48 V | Rated speed n_N [min ⁻¹] | |
|-----------------|-------------------|--------------|-----------------------|-----------------------|--|---------|
| Motor | M_0 [Nm] | M_N [Nm] | I_N [A] | I_N [A] | at 24 V | at 48 V |
| LST-037-1-80-24 | 0.10 | 0.09 | 5.4 | 5.4 | 8000 | |
| LST-037-2-60-24 | 0.20 | 0.18 | 6,9 | 6,9 | 6000 | |
| LSH-050-1-30-48 | 0.25 | 0.24 | 3.1 | 3.1 | 1000 | 3000 |
| LSH-050-2-30-48 | 0.50 | 0.47 | 5.5 | 5.4 | 1000 | 3000 |
| LSH-050-3-30-48 | 0.70 | 0.67 | 7.1 | 6,9 | 1000 | 3000 |
| LSH-074-1-15-24 | 0.80 | 0.75 | 8.3 | 8.3 | 1500 | |



Note: For detailed electrical data and accessories, such as system cables, refer to the Servomotors order catalogue (article no.: 0814.05B.X-XX).

Subject to change without prior notice.

The contents of our order catalogue have been compiled with greatest care and in compliance with our present status of information. Nevertheless we would like to point out that this document cannot always be updated parallel to the technical further development of our products. Informationen and specifications may be changed at any time. For information on the latest version please refer to www.lti-motion.com. The german version is the original of the order catalogue.

Order Catalogue Positioningsystem
CDE/CDB3000

Id.-No.: 1001.24B.9-00 • Stand: 12/2016

