

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)



-line Positioning System

LTI DRIVES

Order Catalogue Positioning Systems CDE/CDB3000

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Date: 04/2014

We reserve the right to make technical changes.

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

The particular benefits to users of LTi drive 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

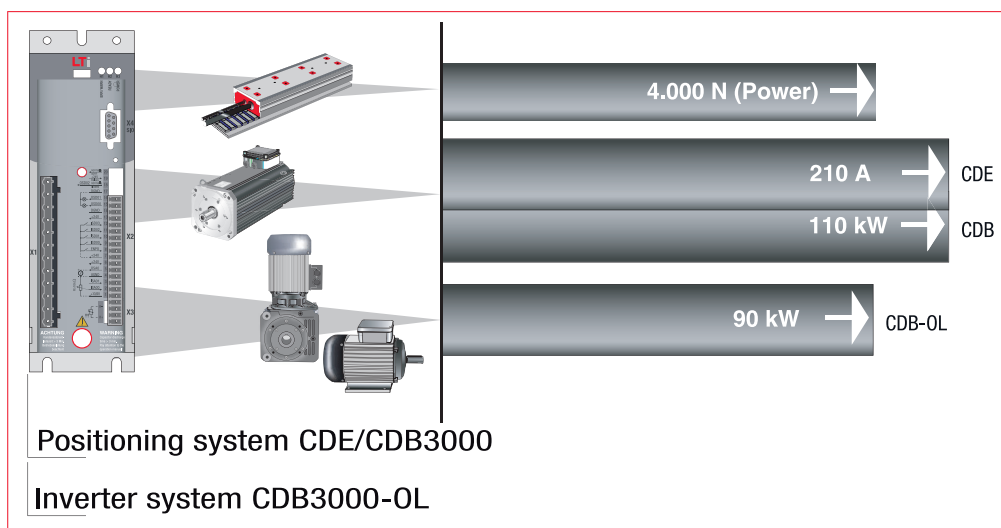
The **c**-line DRIVES are ideal for virtually any task. They include the CDE/CDB positioning controllers with the Voltage Frequency Control (VFC) method and Field Oriented Regulation (FOR) with encoder evaluation. The c-line Drives servocontrollers include a highly dynamic speed/torque/position control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



1



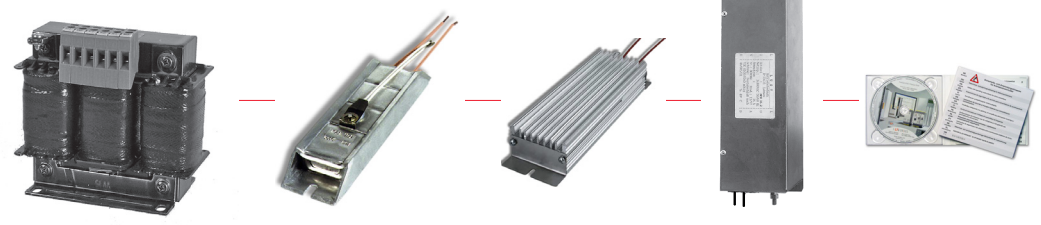
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(for details see Servomotors Ordering Catalogue) Article no.: 0814.05B.x

Space for personal 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
	in storage as per EN 61800-2, IEC 60721-3-1 class 1K3 and 1K4	0 ... 55 °C ¹⁾ at relative humidity of 5 ... 85 % without condensation
	in transport as per EN 61800-2, IEC 60721-3-2 class 2K3	-25 ... +55 °C ²⁾ at relative humidity of 5 ... 95 %
Protection	Device	-25 ... +70 °C ³⁾ relative humidity 95 % at max. +40 °C
	Cooling method	IP20 (terminals IP00)
Touch protection		old Plate IP20 Push-through heat sink IP54
Mounting height		Convection IP20
		BGV 3
		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.

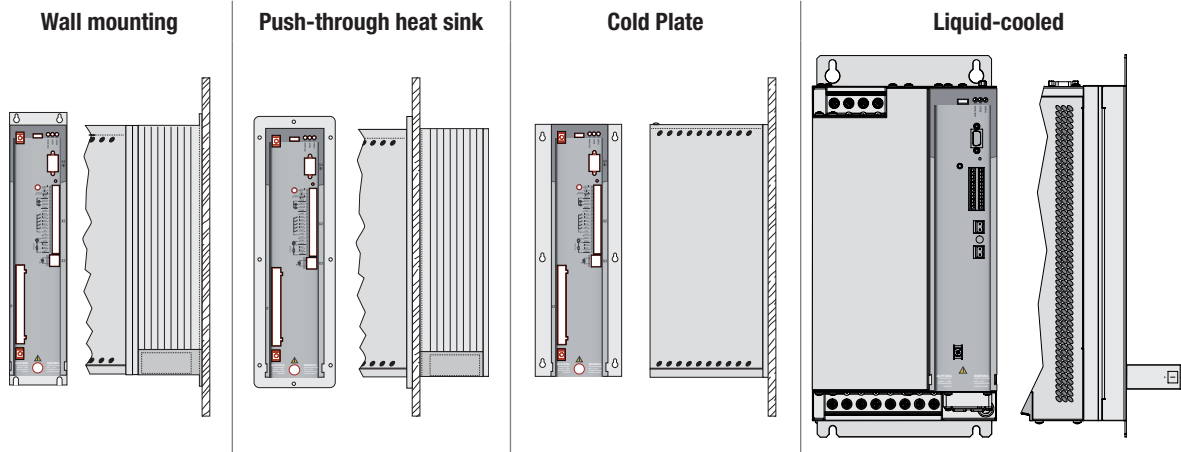
²⁾ The absolute humidity is limited to max. 29 g/m³. So the maximum values for temperature and relative air humidity stipulated in the table must not occur simultaneously.

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).



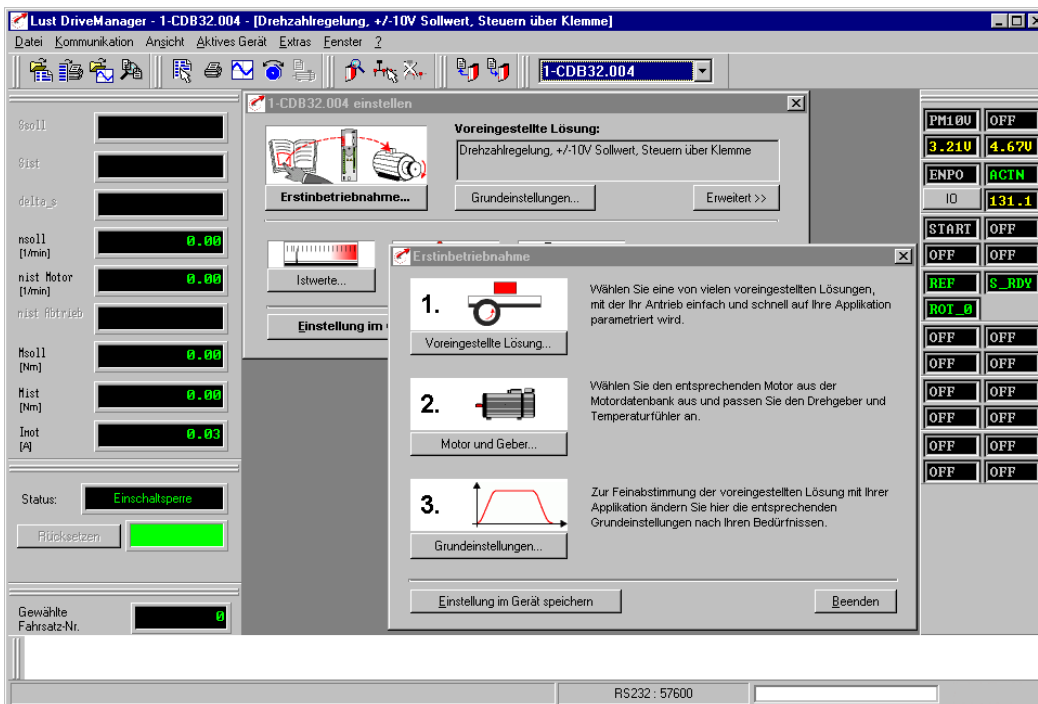
Size	Power	Positioning controllers	Wall mounting	Push-through heat sink	Cold Plate	Liquid-cooled
BG1	0.375 kW 0.75 kW	CDE/CDB32.003 CDE/CDB32.004	YES ¹⁾	NO	YES	NO
BG2	1.5 kW 0.75 kW 1.5 kW	CDE/CDB32.008 CDE/CDB34.003 CDE/CDB34.005	YES	NO	YES	NO
BG2	2.2 kW	CDE/CDB34.006	YES	NO	on request	NO
BG3	3.0 kW 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

1

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

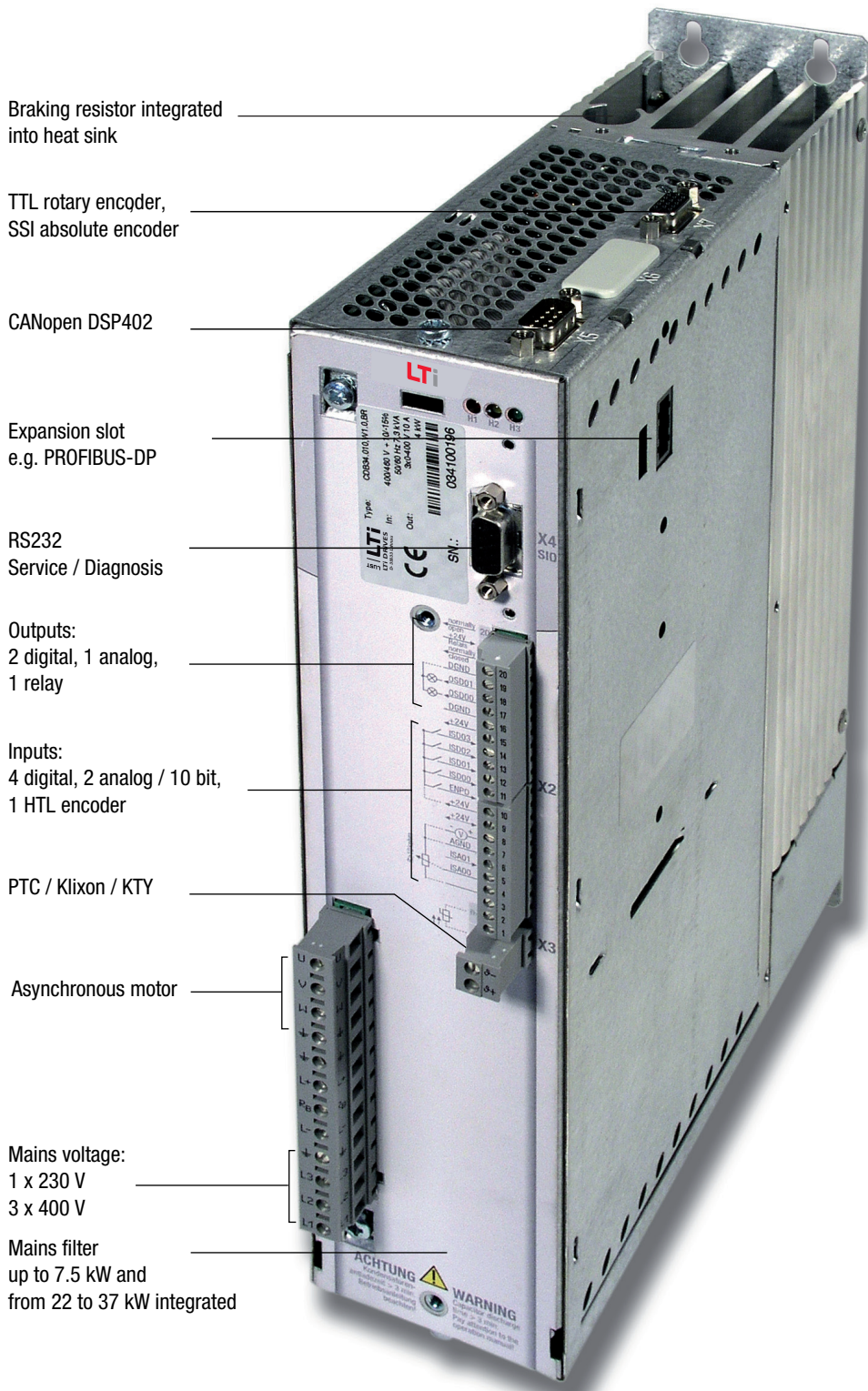
Synchronous otr
asynchronous motor

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

ECOpos — Positioning at its finest

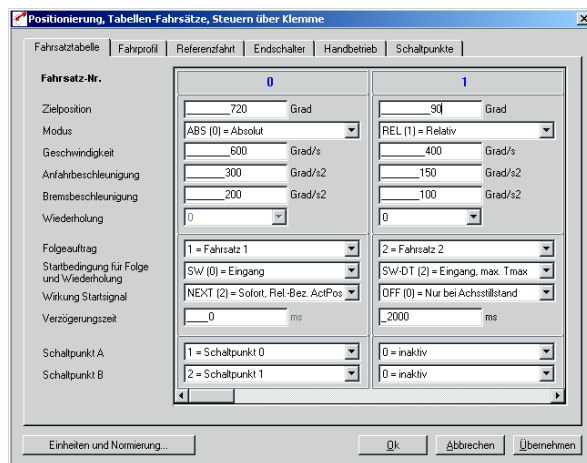
The CDE/CDB3000 drive controllers are optimized for the positioning of electric drives. Alternatively, operation of the drive can also be speed or torque controlled.

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.

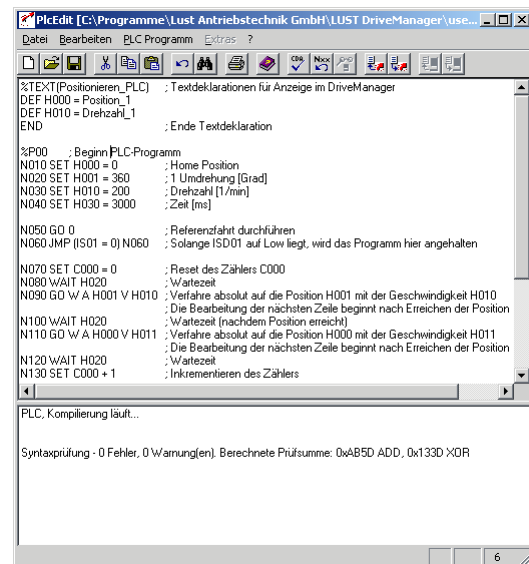
PDO control information is typically processed within 1 ms, making for very short response times.

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

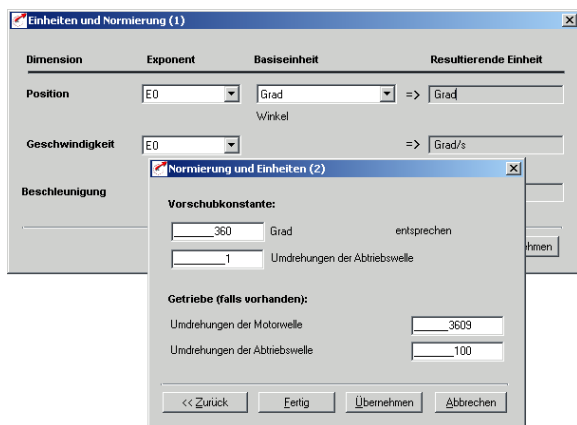
The position control loop with its sampling frequency of 4 kHz (250 µs) and an overlaid pilot control structure creates optimum dynamic characteristics and a high control quality.

Comprehensive basic functions for positioning

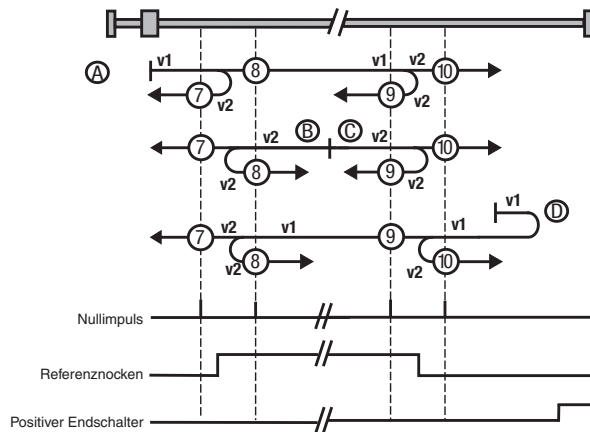
Positioning is based on comprehensive basic functions in the hardware or software which can be used independently of a preset solution.

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.



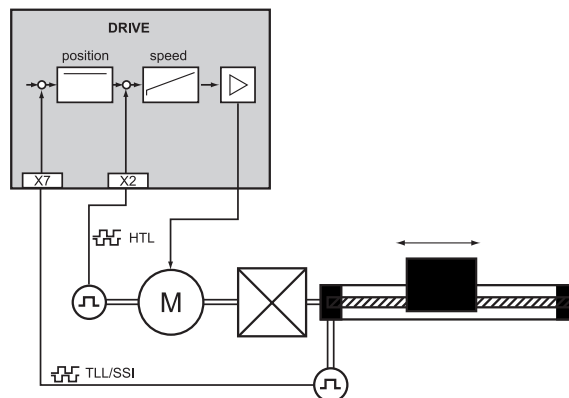
- Different types of reference traverses, including with continuous referencing for slip-prone systems such as conveyor belt.



- 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 DRIVES 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 LUST representative - just visit our website at

<http://drives.lt-i.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

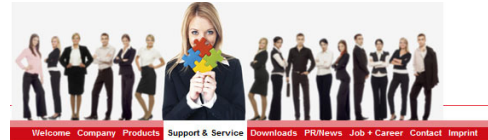
Logistics

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



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Our service concept for your success

We tailor our service to your needs!

LTI Support and Service will provide you with all the backup you need throughout the lifecycle of your drive and automation solution. Our team of expert specialists will be at your side to help with every stage: from planning and development through commissioning, to routine maintenance – we are committed to delivering personalized service in all respects.

Expert support in every phase

Our service concept is a comprehensive package tailored closely to the individual phases, so as to ensure the right assistance is provided precisely where and when it is needed.

The continuous training and development which our specialists undergo guarantees that your projects will be handled smoothly and competently, and the right solutions will be found in every phase.

Four-phase lifecycle model



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, and
- software updates

You can reach us:

Mo.-Fr.: 8 a.m. - 5 p.m. Tel. +49 6441/966-180

Fax: +49 6441/966-177

E-mail: helpline@lt-i.com

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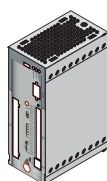
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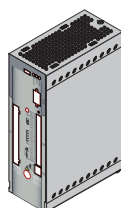
- Safety
- Mobile Power
- machine tools
- Automation System MotionOne
- Servo system ServoOne

Positioning controllers 0.375 to 110 kW / 2.4 to 210 A

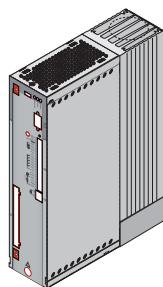
BG1



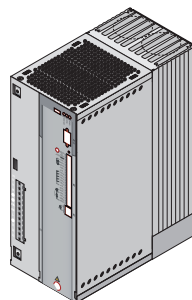
BG2



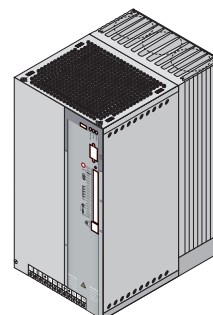
BG3



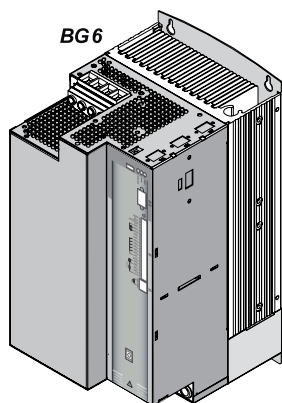
BG4



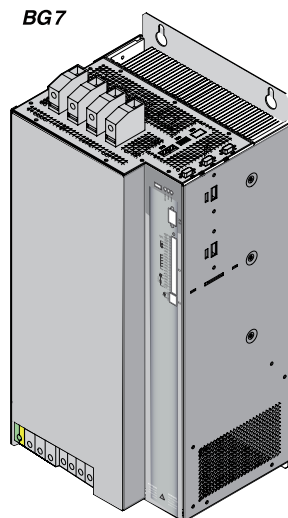
BG5



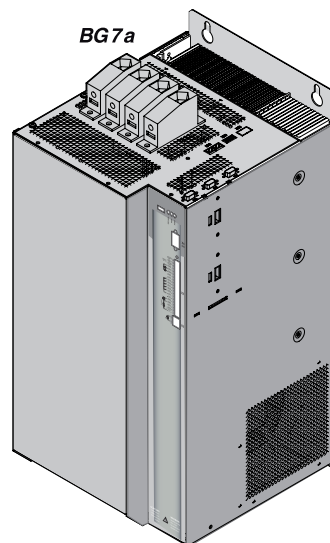
BG6



BG7



BG7a



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

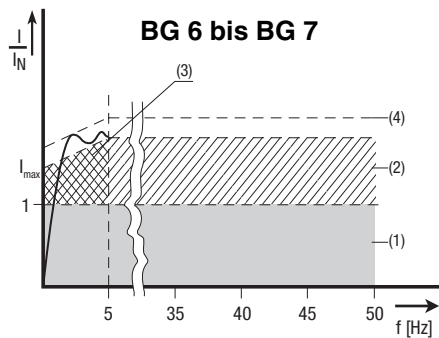
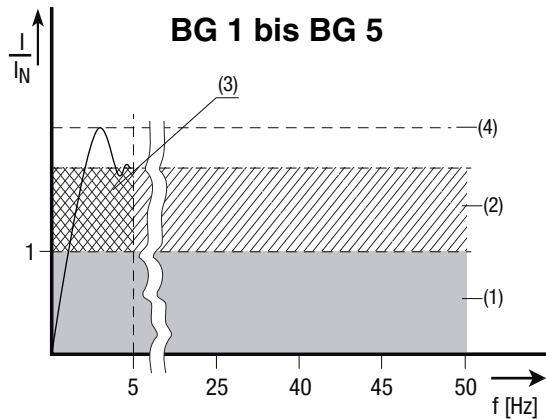
Current capacity of positioning controllers

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/IN = 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 temperature < 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
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

Motor cable length 10 m
Mounting height 1000 m above MSL

4) Shut-off as per I² x t characteristic

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	22.5	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
 Mounting height 1000 m above MSL

 4) Shut-off as per I² x t characteristic

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

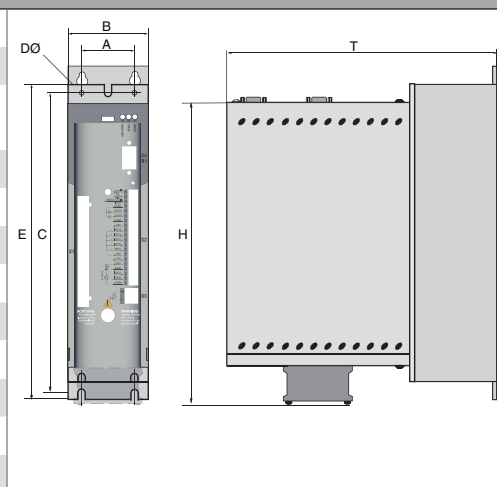
Tech. data ¹⁾	CDE32.008	CDE34.005	CDE34.006
Output, motor side			
Recommended rated power with 4-pole standard motor	1.5 kW	1.5 kW	2.2 kW
Voltage	3 x 0 ... 230 V	3 x 0 ... 400/460 V	3 x 0 ... 400/460 V
Effective rated current (I_N at 4/8 kHz)	7.1 A ²⁾	4.1 A ²⁾	5.7 A ²⁾
Peak current	see table page 2-3		
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, W x.x	CDE34.005, W x.x	CDE34.006, W 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

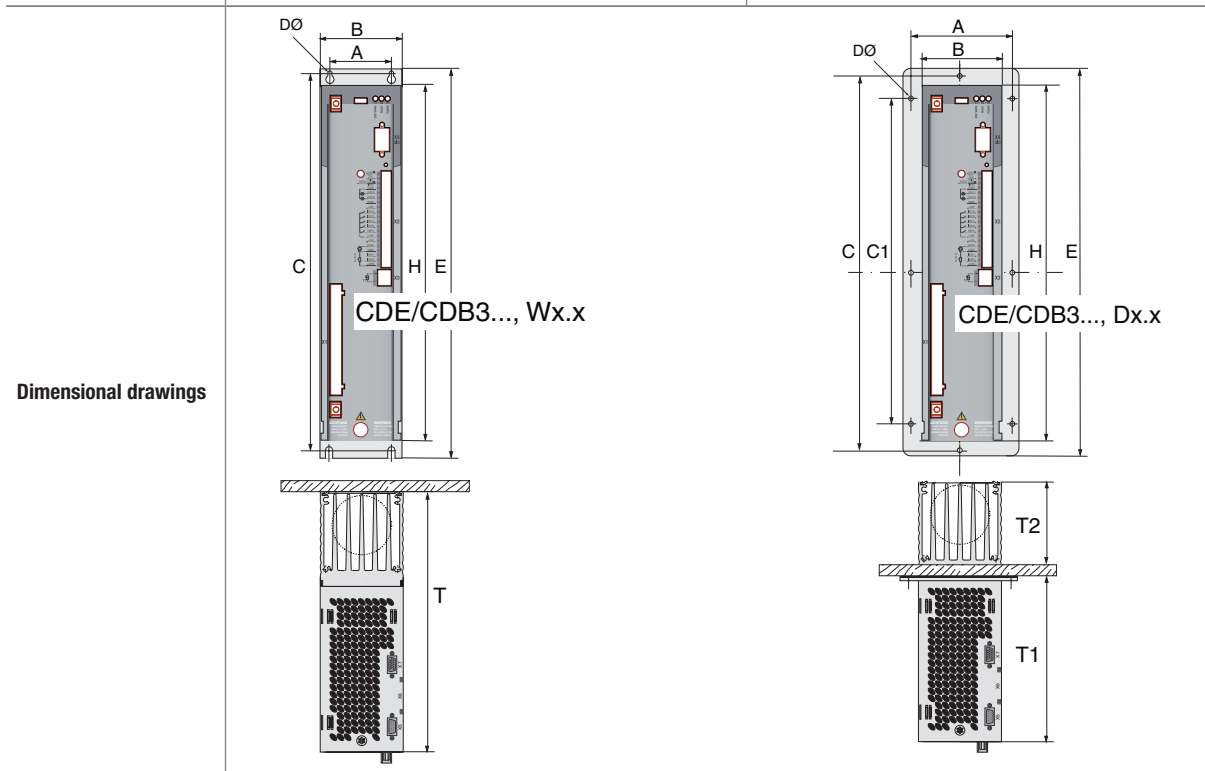
Order code

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

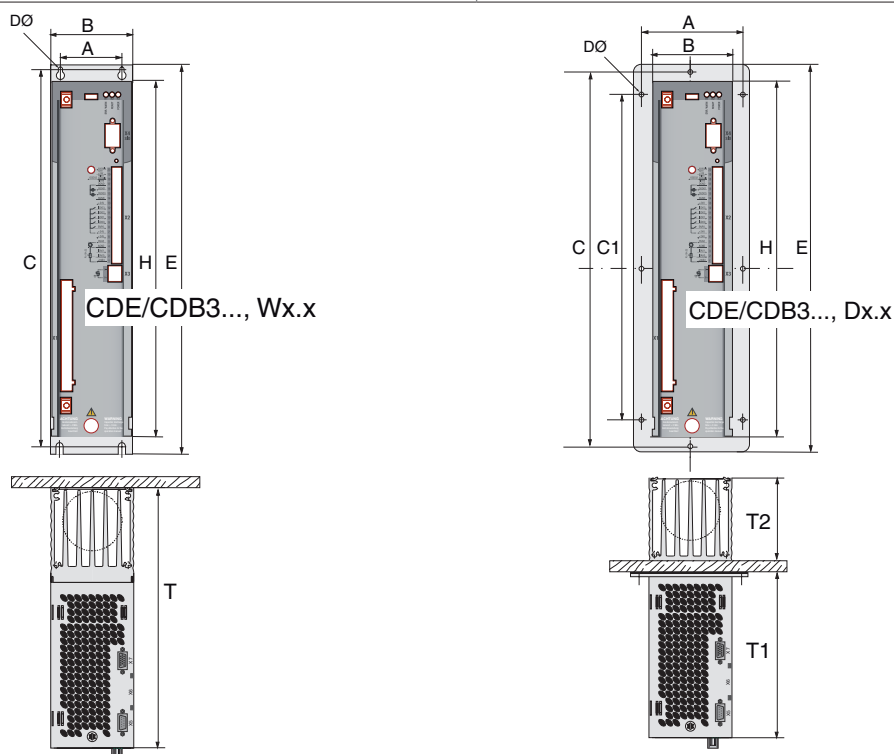
Tech. data ¹⁾	CDE/CDB34.014	CDE/CDB34.017
Output, motor side		
Recommended rated power with 4-pole standard motor	5.5 kW	7.5 kW
Voltage	3 x 0 ... 400/460V	
Effective rated current (I_N at 4/8 kHz)	14 A ²⁾	17 A ²⁾
Peak current	see table page 2-3	
Rotating field frequency	0 ... 400 Hz	
Switching frequency 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

Dimensional drawings



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

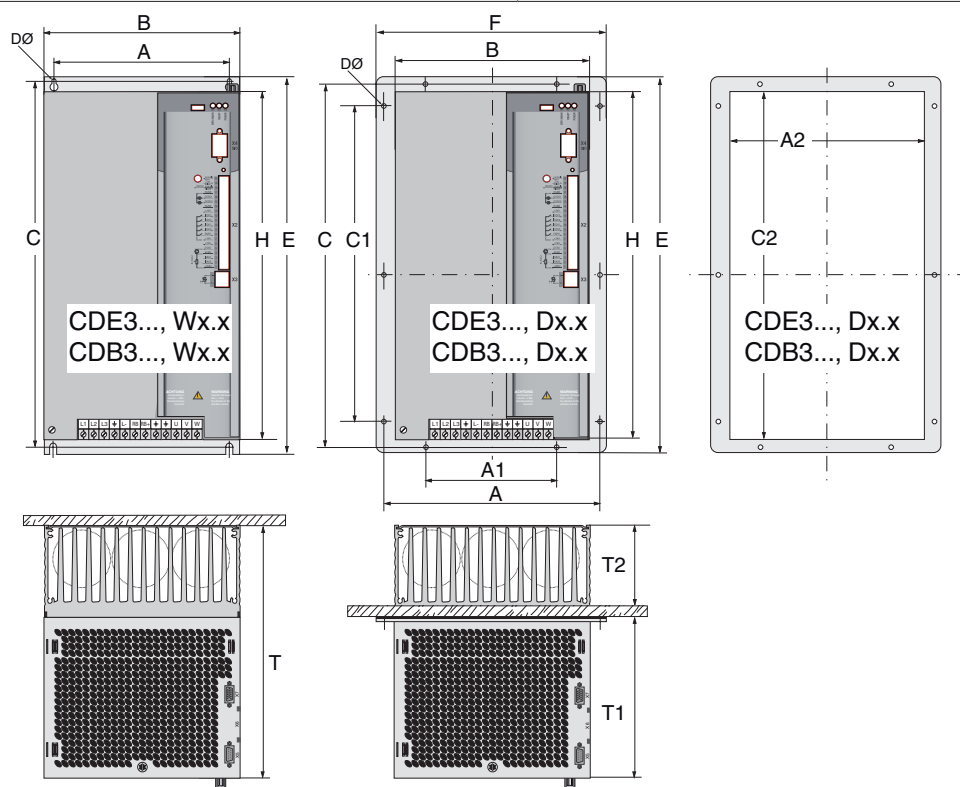
Tech. data ¹⁾	CDE/CDB34.024	CDE/CDB34.032
Output, motor side		
Recommended rated power with 4-pole standard motor	11 kW	15 kW
Voltage	3 x 0 ... 400/460 V	
Effective rated current (I_N at 4/8 kHz)	24 A ²⁾	32 A ²⁾
Peak current	see table page 2-3	
Rotating field frequency	0 ... 400 Hz	
Switching frequency 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

Dimensional drawings



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

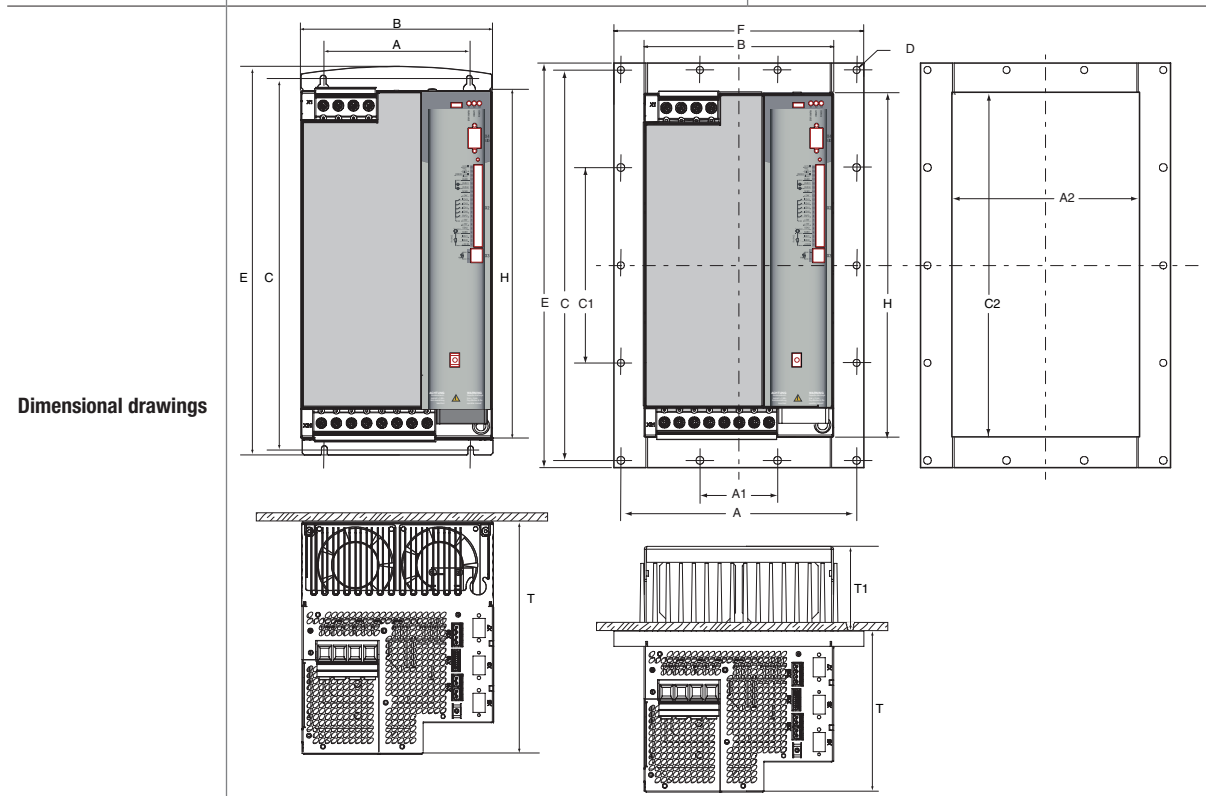
Tech. data ¹⁾	CDE/CDB34.044	CDE/CDB34.058	CDE/CDB34.070
Output, motor side CDE3000			
Voltage ³⁾	3 x 0 ... 400/480 V		
Effective rated current (I_N at 8 kHz)	45 A ²⁾	60 A ²⁾	72 A ²⁾
Peak current	see table page 2-4		
Rotating field frequency	0 ... 400 Hz		
Switching frequency of power stage	4, 8, 12, 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⁾ $3 \times U_{\text{Mains}} \times 0,95$

	CDE/CDB3 ..., <u>W</u> x.x	CDE/CDB3 ..., <u>D</u> x.x
Cooling method	Wall mounting	Push-through heat sink
Mounting method	Vertical mounting with unhindered 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	-	250
F	-	204
DØ	Ø 5.6	Ø 7.5



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

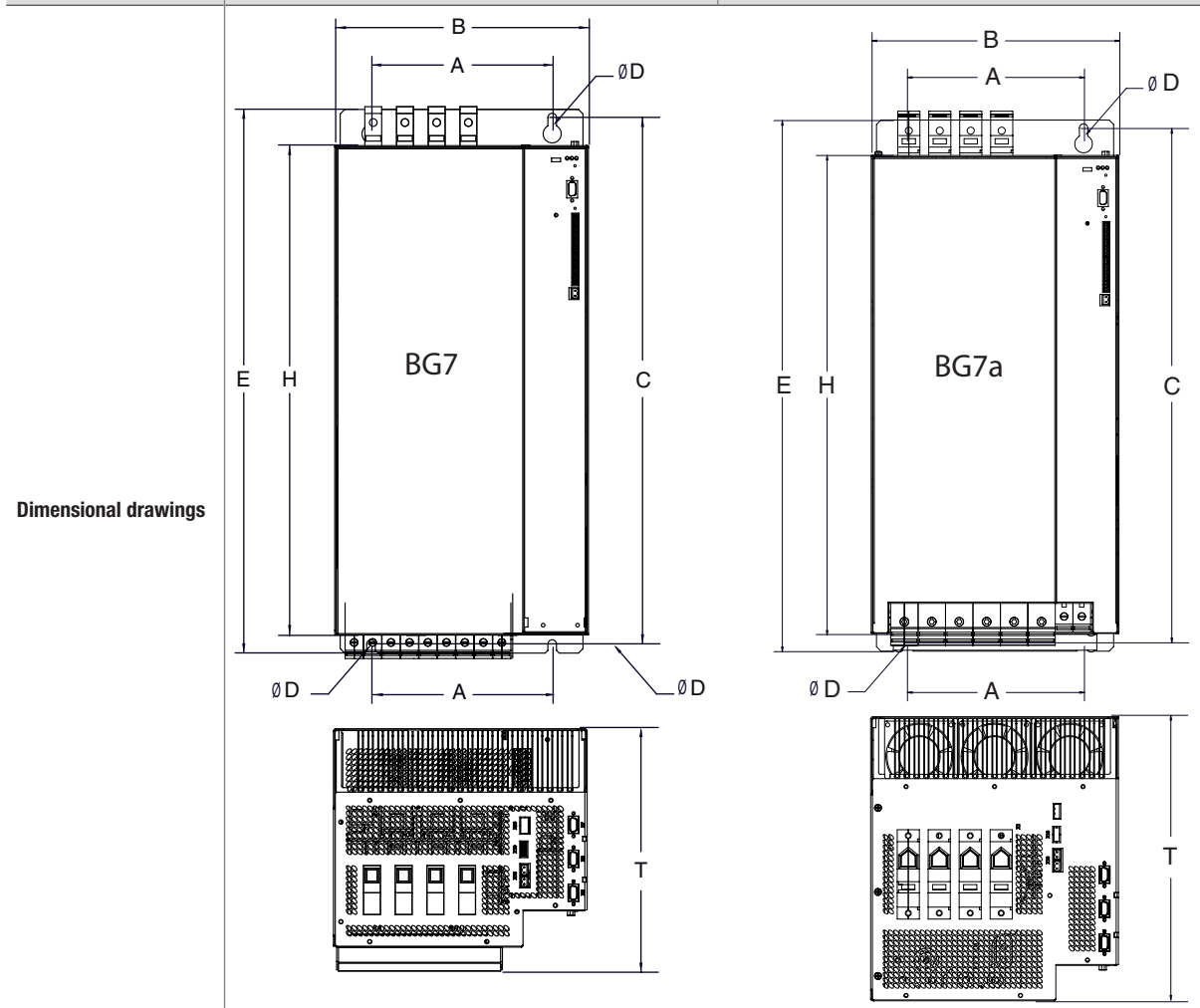
Tech. data ¹⁾	CDE/CDB34.088	CDE/CDB34.108	CDE/CDB34.140	CDE/CDB34.168
Output, motor side				
Device connected load ¹⁾	47 kW	55 kW	75 kW	90 kW
Voltage ³⁾	3 x 0 ... 400/480 V			
Effective rated current (I_N at 8 kHz)	90 A ²⁾	110 A ²⁾	143 A ²⁾	170 A ²⁾
Peak current	see table page 2-4			
Rotating field frequency	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⁾ $3 \times U_{\text{Mains}} \times 0,95$

	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
∅D	∅ 9.5	∅ 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

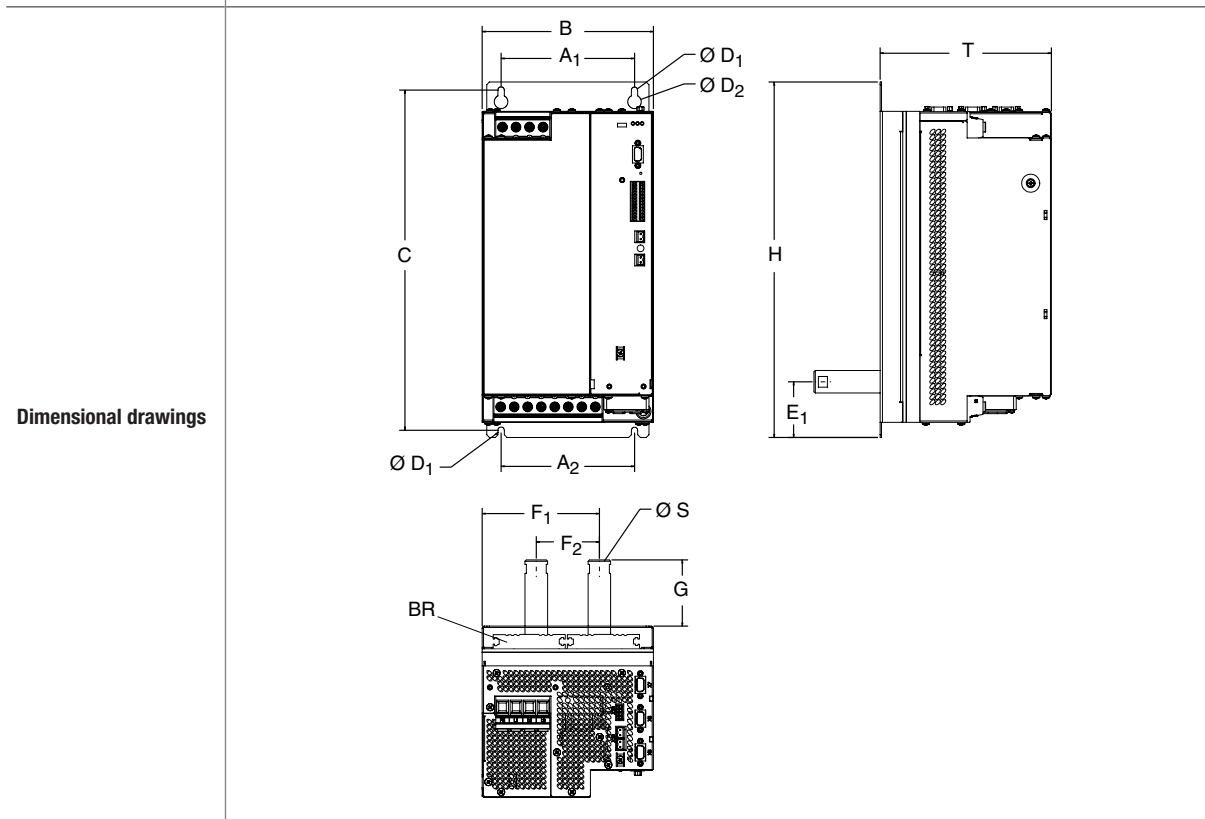
Tech. data ¹⁾	CDE/CDB34.044,L	CDE/CDB34.058,L	CDE/CDB34.070,L
Output, motor side CDE3000			
Voltage ³⁾	3 x 0 ... 400/480 V		
Effective rated current (I_N at 8 kHz)	45 A ²⁾	60 A ²⁾	72 A ²⁾
Peak current	see table page 2-5		
Rotating field frequency	0 ... 400 Hz		
Switching frequency of power stage	4, 8, 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⁾ $3 \times U_{Mains} \times 0,95$

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



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

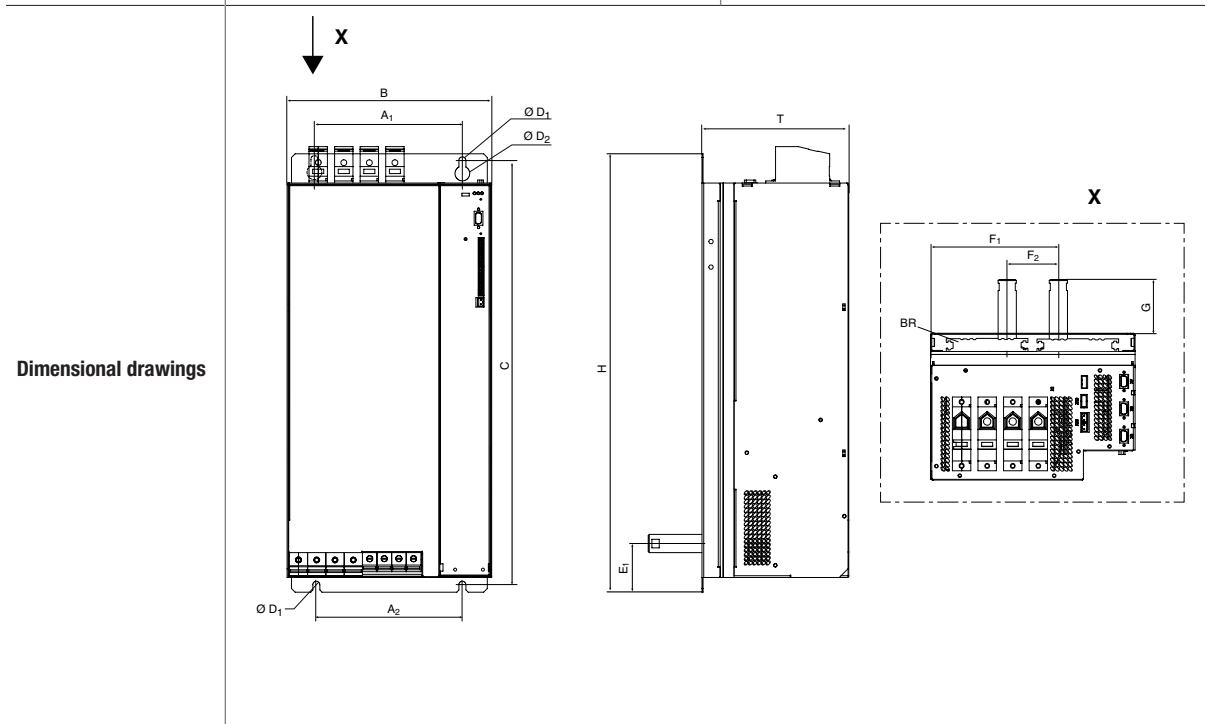
¹⁾ all data apply to 1-phase units at 230 V to 3-phase units at 400 V

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

³⁾ $3 \times U_{Mains} \times 0,95$

CDE/CDB34.088,L CDE/CDB34.108,L	CDE/CDB34.140,L CDE/CDB34.168,L CDE/CDB34.208,L
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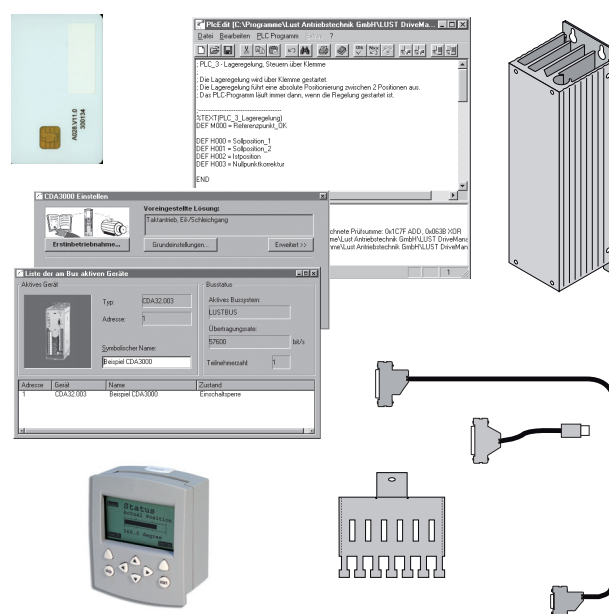
Cooling method	Liquid-cooled	
Mounting method	Vertical mounting with unhindered air flow, end-to-end	
Cooling air temperature	45 °C (at 4 kHz power stage switching frequency) 40 °C (at >8 kHz)	
Weight	28 kg	32 kg
Dimensions	BG7 [mm]	BG7a [mm]
B (width)	280	280
H (height)	600	600
T (depth)	201	281
A₁	200	200
A₂	200	200
C	581	581
E₁	66.5	66.5
F₁	175	175
F₂	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

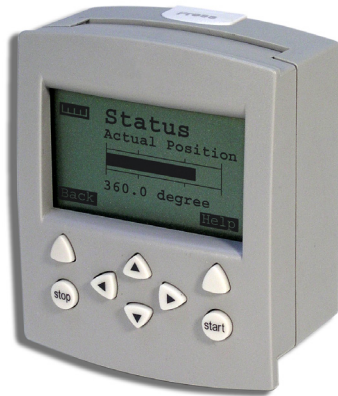


Accessories for Positioning Controllers



Contents	Type	Page
Operator control modules	KP300	3 - 2
Memory card	SC-XL	3 - 3
PLC programming	PLC Editor	3 - 4
PC environment	DriveManager	3 - 5
Connecting cable	CCD-SUB90X	3 - 6
Shield connection	ST02 ... ST06 / SMC50 / SMB50	3 - 7
Heat sinks for BG1 and BG2	HS32.1BR / HS32.100	3 - 9

Operator control modules



KP 300 - XX

KEYPAD

Series

Variant

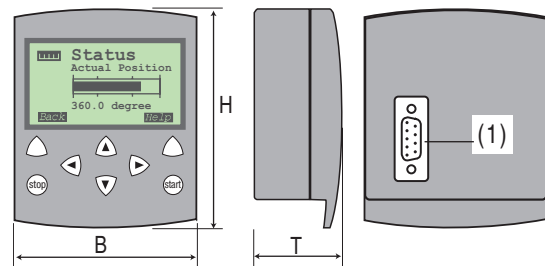
KP300

Order code

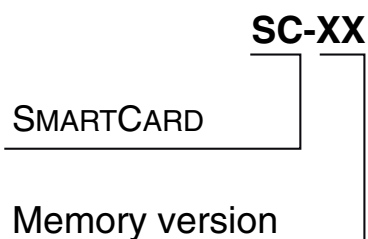
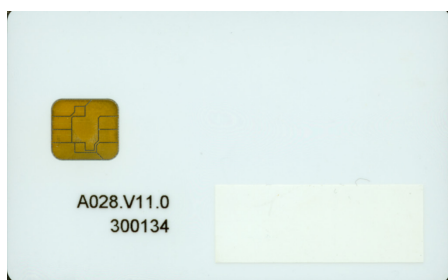
3

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



PLCEditor

PC user software

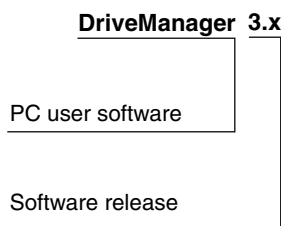
PLCEditor

Order code

Tech. data		PLCEditor
Software features	The "PLCEditor" 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 PLCEditor 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
PLCEditor	<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 90□

Connecting Cable

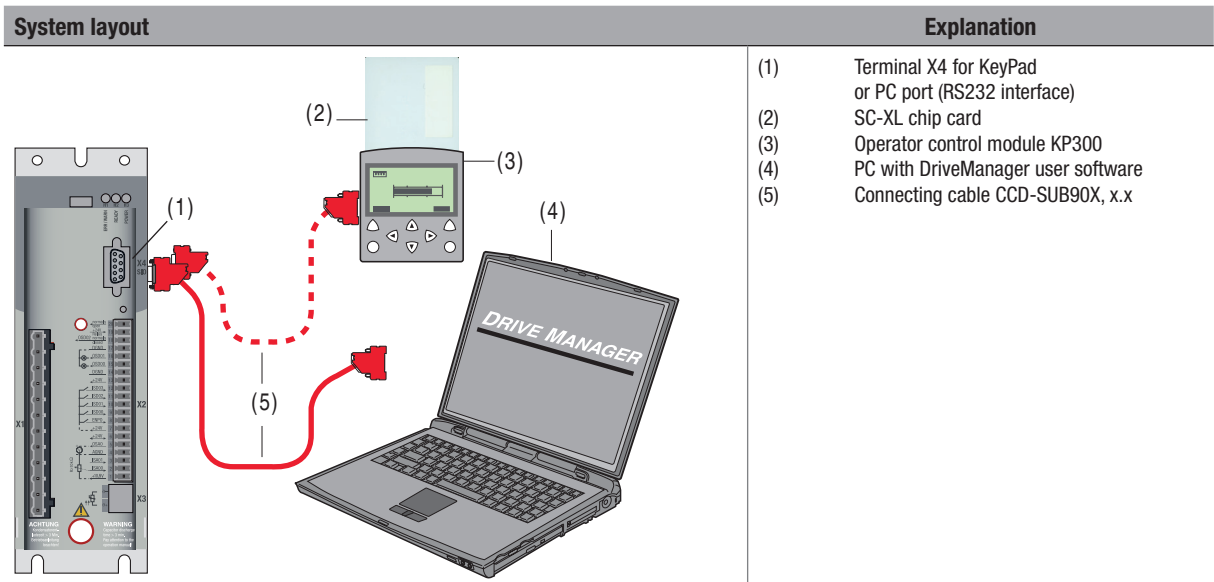
Cable type D-SUB

Cable length in metres

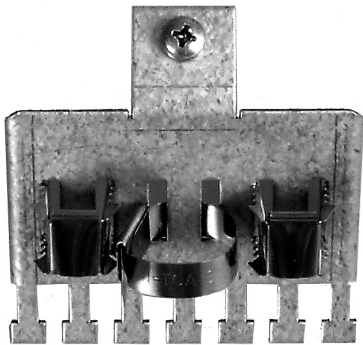
CCD-SUB 90x

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



Shield connection



ST

Shield Terminator

Size

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

Order code

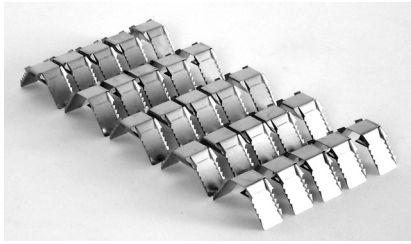
Order des.	ST02		ST04		ST05	ST06
Suitable for positioning controllers	CDE/CDB32.003 CDE/CDB32.004	CDE/CDB32.008 CDE/CDB34.003 CDE/CDB34.005 CDE/CDB34.006	CDE/CDB34.008 CDE/CDB34.010	CDE/CDB34.014 CDE/CDB34.017	CDE/CDB34.024 CDE/CDB34.032	CDE/CDB 34.044 CDE/CDB 34.058 CDE/CDB 34.070
Power of positioning 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	476 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

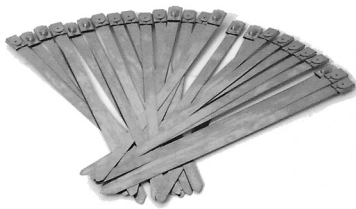
Quantity of
Packing unit

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

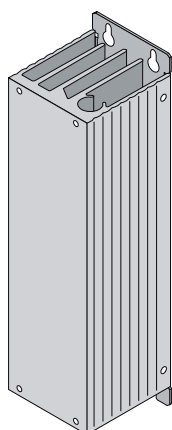
Order code

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

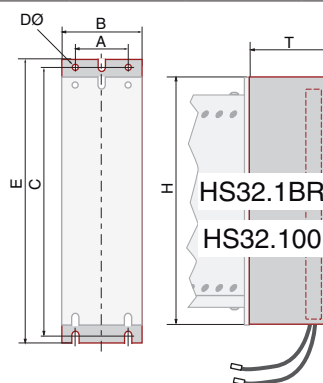
Braking resistor

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							

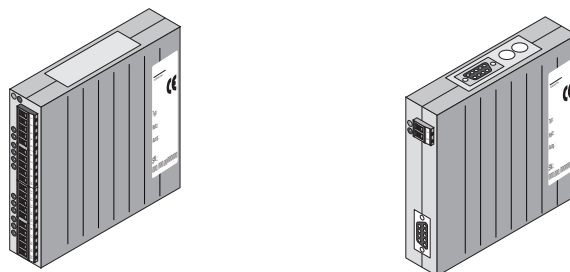
Dimensional drawing





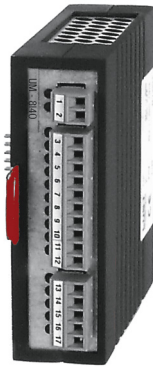
3

User and communication modules



Contents	Type	Page
User modules	UM-8I40	4 - 2
Communication modules	CM-DPV1	4 - 3

User module (I/O expansion)



UM - □□□□
User Module

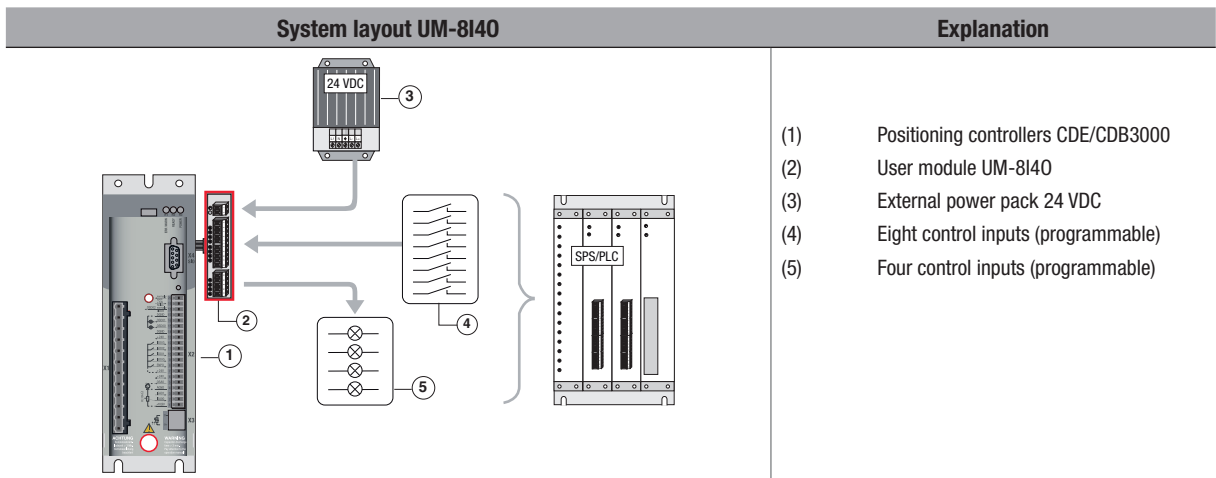
Characteristic
8 I 4 O (e. g.)
 Terminal expansion by 4 outputs
 Terminal expansion by 8 inputs

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

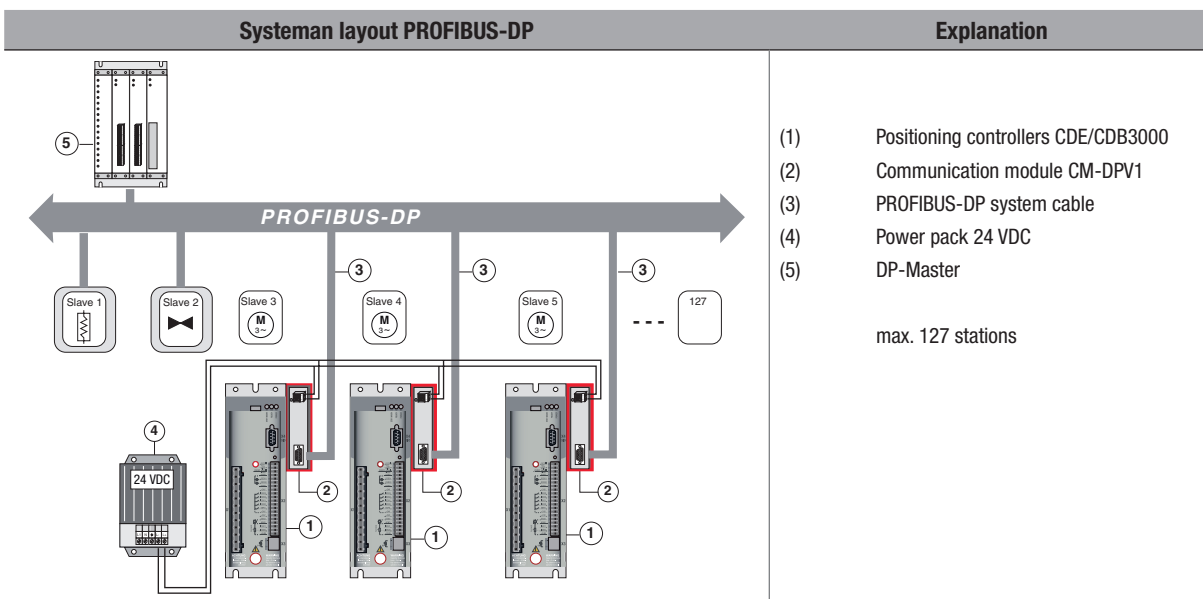
Bus and/or protocol

CM-DPV1

Order code

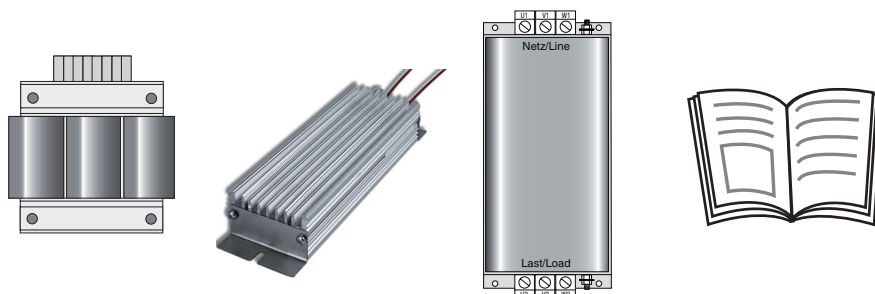
Order designation	Summary
CM-DPV1	Communication module for PROFIBUS-DPV1 (you will find the current GSD file at www.lt-i.com)

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]





Supplementary Components



Contents	Type	Page
Line reactors	LR 32.5 ... LR32.14-UR / LR34.4-UR ... LR34.168-UR	5 - 2
Braking resistors	BR-200.01, 540, UR ... BR-026.10, 650, UR	5 - 5
Mains filters	EMCxxx.X - UR	5 - 8
User information	Product DVD	5 - 10

Line reactors



LR 3□ . □□□ - □□

Line Reactor

Series and Voltage

Rated current

UL recognition

LR34.10

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 %

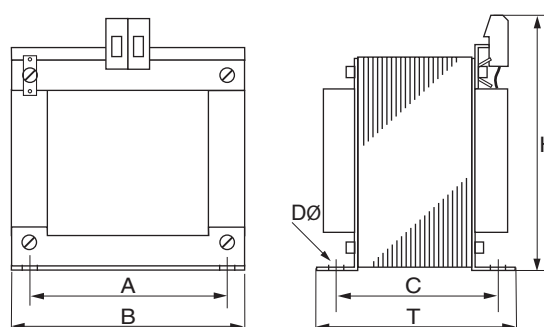
Single-phase line reactors

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

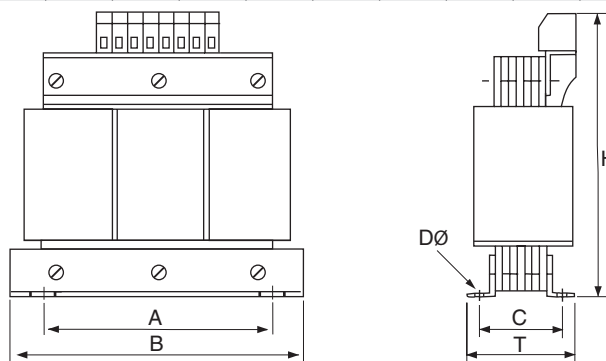
Suitable for positioning controllers	Tech. data	Rated current [A]	Power loss tot. [W]	Inductance [mH]	Weight	Connection [mm ²]
CDE/CDB34.003	LR34.4-UR	4.2	20	7	2.5	4
CDE/CDB34.005 CDE/CDB34.006	LR34.6-UR	6	25	4.88	2.5	4
CDE/CDB34.008	LR34.8-UR	8	25	3.66	2.5	4
CDE/CDB34.010	LR34.10-UR	10	35	2,93	2.5	4
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

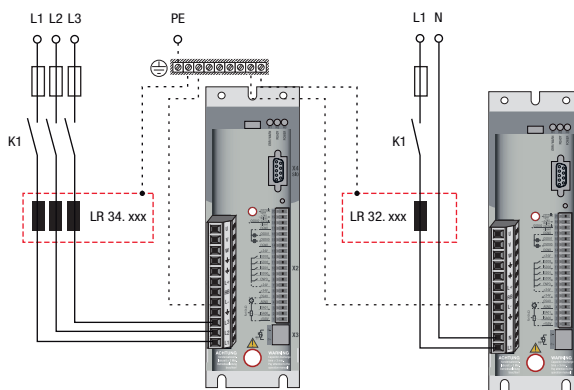
Three-phase line reactors

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

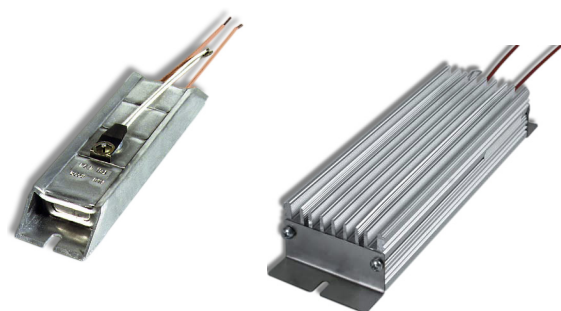
Dimensional drawing:



System layout



Braking resistors



BR - □□□.□□□□ 0,UR

Braking Resistor

value

Power in [W]

01 = 100 W

10 = 1 kW

Connection type

0 = without touch protection

UL recognition

BR-090.01.540,UR

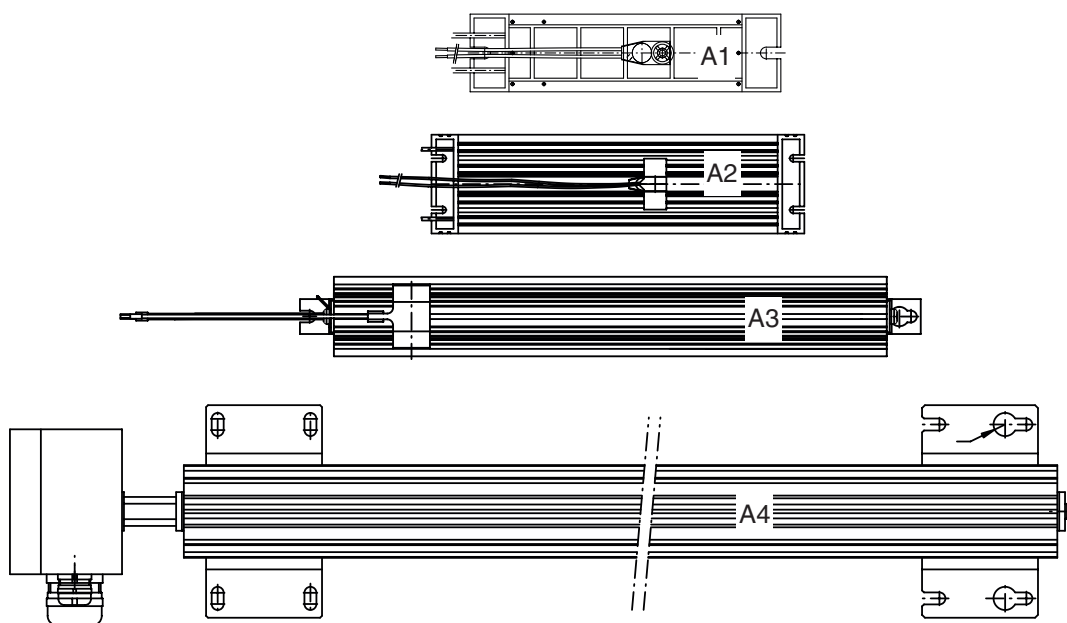
BR-090.03.540,UR

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

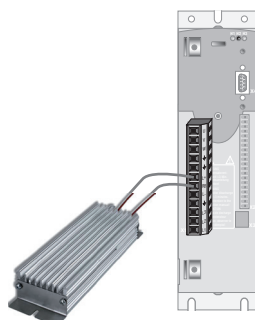
Diagrams



Braking resistor

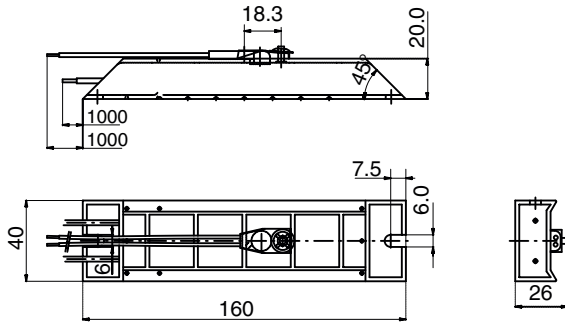
Order designation	Continuous braking power [W]	Resistance [$\Omega \pm 10\%$]	Peak braking power [W]	Protection	Dimensional drawing
			750 VDC		
BR-200.01, 540,UR	35	200	2800	IP54	A1
BR-200.02, 540,UR	150	200	2800	IP54	A2
BR-200.03, 540,UR	300	200	2800	IP54	A3
BR-090.01, 540,UR	35	90	6250	IP54	A1
BR-090.02, 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

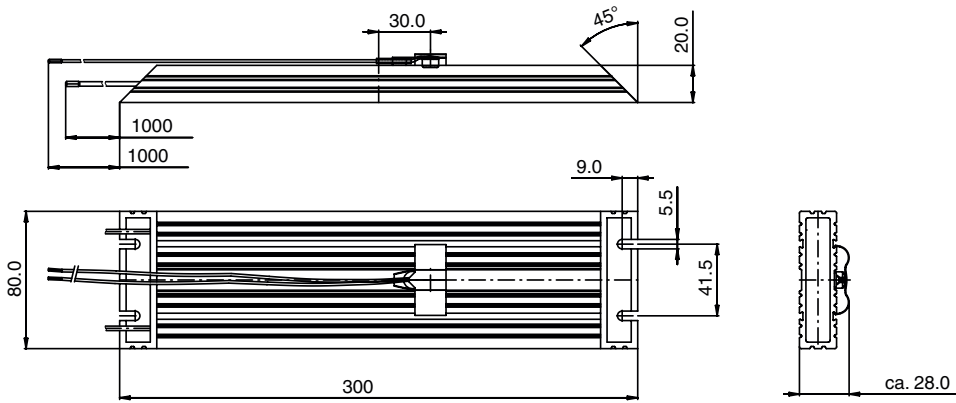


Dimension [mm]	BR-XXX.01.540,UR	BR-XXX.02.540,UR	BR-XXX.03.540,UR	BR-0XX.10.650,UR
B (width)	40	80	42	114
H (height)	160	300	320	865
T (depth)	26	28	122	105
Diagram	A1	A2	A3	A4

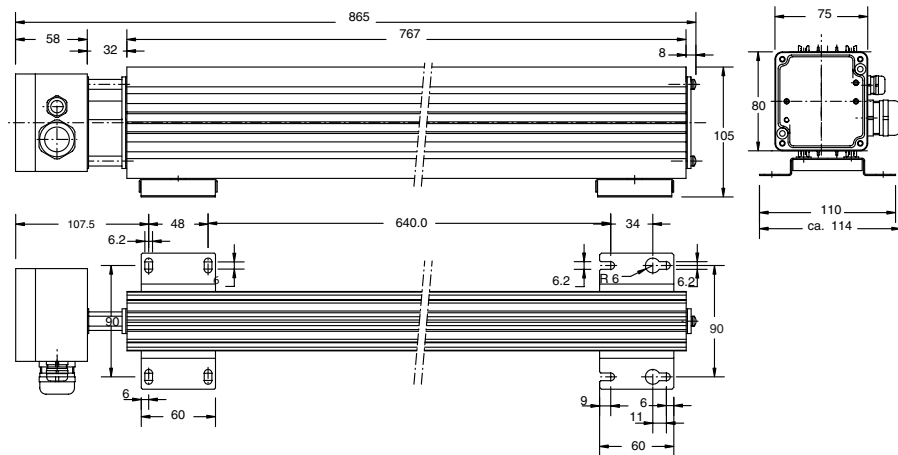
Dimensional drawing A1



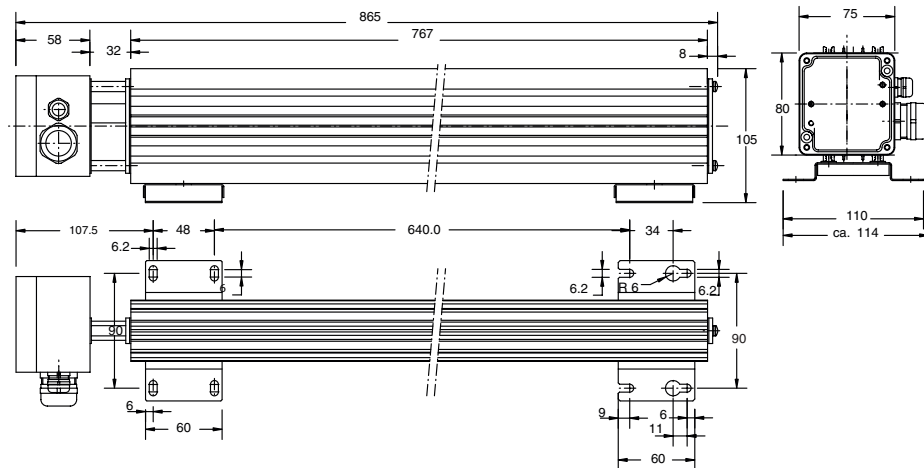
Dimensional drawing A2



Dimensional drawing A3



Dimensional drawing A4



Mains filters



Electro
Magnetic
Compatibility

Rated current

Variant

EMC

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 mm

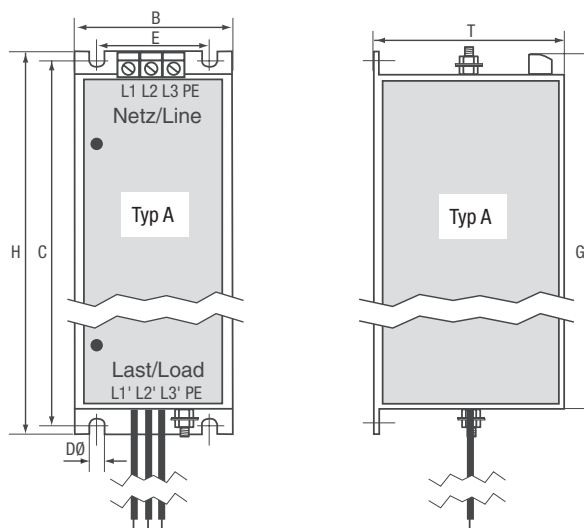
2) Load side: Litz wire AWG 12, 3.32 mm², length 400 mm

3) Load side: Litz wire AWG 10, 5.26 mm², length 400 mm

Three-phase mains filters, dimensional drawings A1 and A2

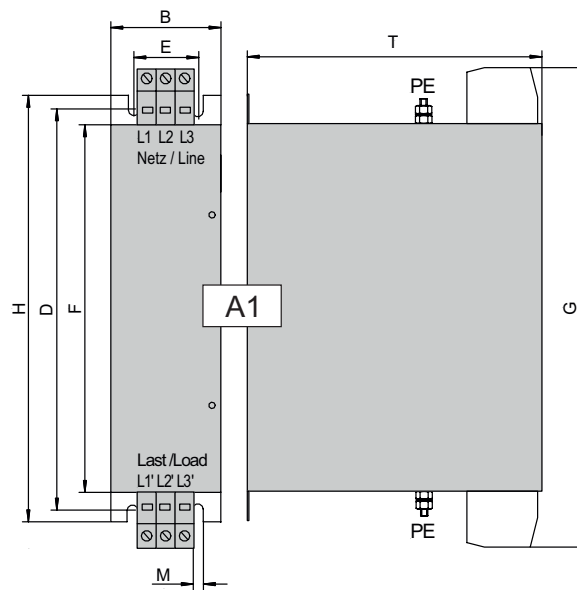
Dimension [mm]	EMC 10.0	EMC 17.0	EMC 35.0	EMC 50.0	EMC 63.1	EMC 100.1	EMC 150.1	EMC 180.1	EMC 220.1
Dimensional drawing	A			A1			A2		
H (height)	270	270	270	290	280	290	320	310	310
B (width)	55	55	55	90	62	75	90	200	200
T (depth)	100	100	100	98	180	200	220	120	120
D	260	260	260	275	270	270	300	180	180
E	36	36	36	76	40	45	60	180	180
F	-	-	-	260	240	250	280	160	160
G	260	260	260	305	305	336	380	410	410
D Ø	4.5	4.5	4.5	7.0	7.0	7.0	7.0	8.5	8.5
H	-	-	-	-	-	-	-	45	45
I	-	-	-	-	-	-	-	86	86
K	-	-	-	-	-	-	-	30	30
L	-	-	-	-	-	-	-	91	91

Dimensional drawing A

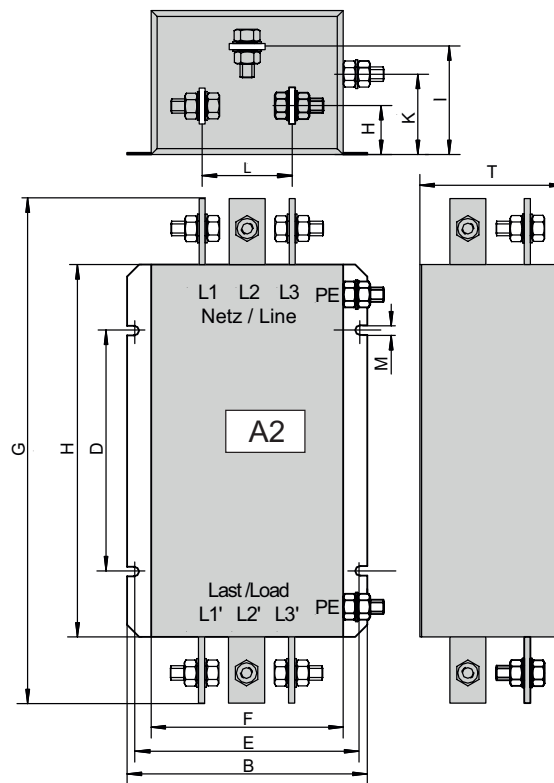


Dimension [mm]	EMC 10.0	EMC 17.0	EMC 35.0	EMC 50.0	EMC 63.1	EMC 100.1	EMC 150.1	EMC 180.1	EMC 220.1
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Dimensional drawing A1



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 Drives 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).



Servomotors

Sketch	Contents	Type	Page	
	LSH servomotor	LSH-050	6 - 2	
		LSH-074		
		LSH-097		
		LSH-127		
	LST servomotor	LST-037	6 - 3	
		LST-050		
		LST-074		
		LST-097		
		LST-127		
	LSx motors - for functional extra low voltage 24/48 V	LST-158	6 - 4	
		LST-037		
		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).



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We should nevertheless point out that this document cannot always be updated in line with ongoing technical developments in our products.

Information and specifications may be subject to change at any time. For information on the latest version please visit <http://drives.lt-i.com>.