CDE/CDB3000

Order Catalogue

Positioning and drive solutions

from 375 W to 90 kW (CDB3000)
from 2 A to 170 A (CDE3000)

e-line positioning system

LUST | LTi | DRiVES

Order Catalogue - CDE/CDB3000 Positioning Systems

ID no.: 1001.24B.5-00

Date: 10/2008

The drive controllers with the 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 systems, 0.375 kW to 110 kW
- inverter systems, 0.75 kW to 110 kW
- controller series
  - with asynchronous and
  - with synchronous motors up to 32 A
  - with hollow-shaft torque motors up to 75 Nm
  - with linear motors up to 4,000 N
  - with linear motors up to 20,000 N

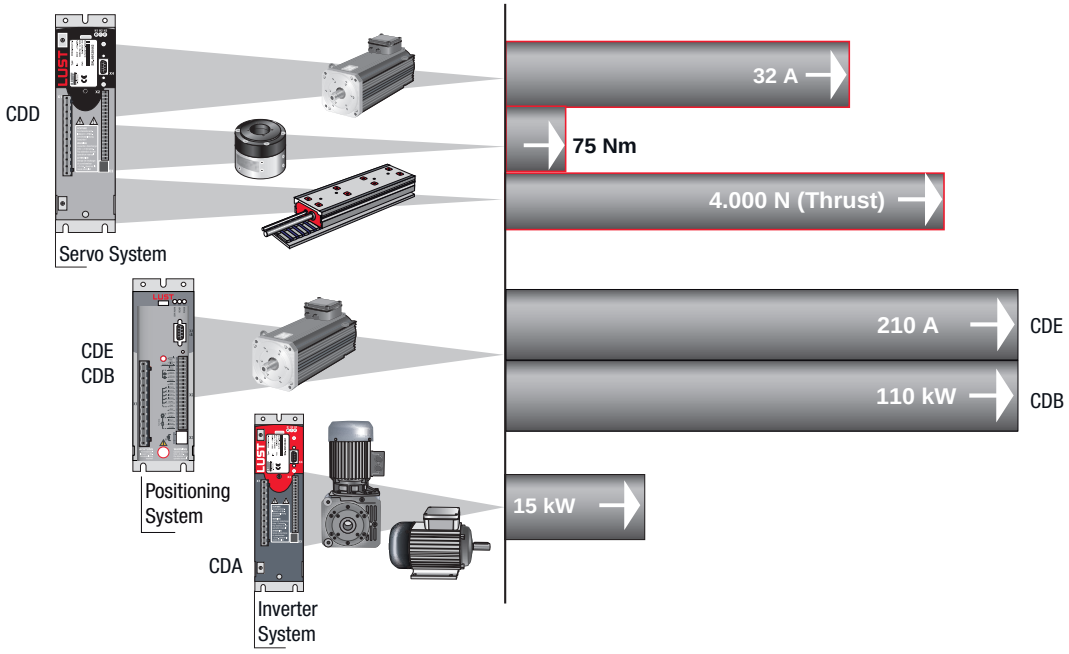
Inverters and servocontrollers based on the same concept

The c-line DRIVES are ideal for virtually any task. They include the CDE/CDB3000 positioning controllers with the Voltage Frequency Control (VFC) method, Field Oriented Regulation (FOR) with encoder evaluation. The CDD servocontrollers include a highly dynamic speed/torque/position control. For applications with high-torque motors there is the CTC TORQUECHAMPION for direct drives.

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 the c-line DRIVES:

- their design, metal enclosures and cooling method for
  - Wall mounting
  - Cold plate
  - Push-through heat sink
  - water-cooled
- their excellent EMC performance
- their user-friendly operation with the DRIVEMANAGE R
- easy serial commissioning with KEYPAD and SmartCard
- the modular networking concept
- the comprehensive range of accessories and complementary components.



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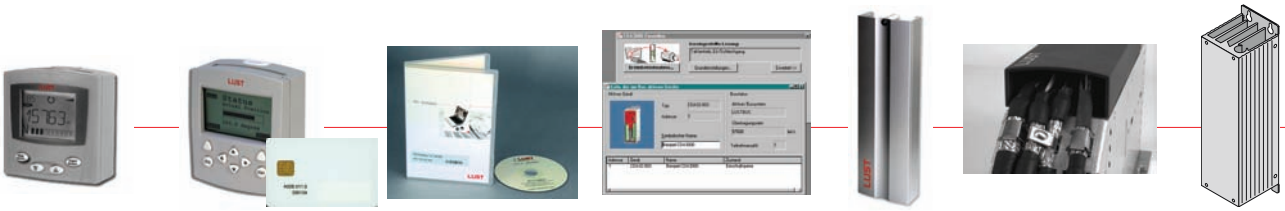

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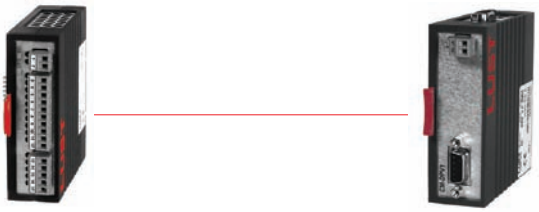

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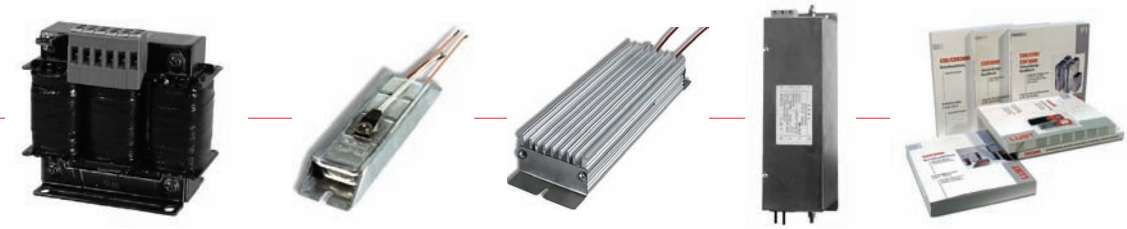

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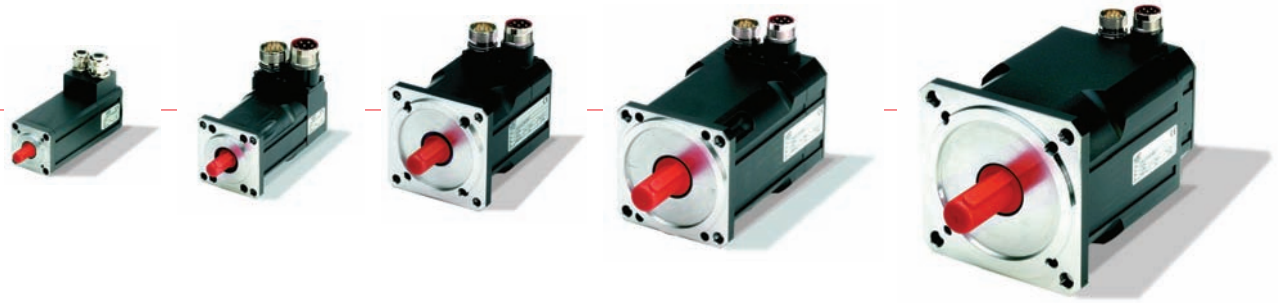


Features

Positioning controllers for 230 V systems:

Size [BG]	Positioning module	Rec. 4-pole standard motor [kW]	Power input of device [kVA]	Rated current I_N [A]	Peak current I_{max} [A]	Dimensions [mm] Width x height x depth
BG1	CDE/CDB32.003.C	0.375	1.0	2.4	4.3 1)	70 x 220/193 x 120
BG1	CDE/CDB32.004.C	0.75	1.6	4.0 A	7.2 1)	70 x 220/193 x 120
BG2	CDB32.008.C	1.5	2.8	7.1 A	12.8 1)	70 x 245/230 x 145
BG2	CDE/CDB32.008.W	1.5	2.8	7.1 A	12.8 1)	70 x 245/230 x 145

Mains voltage 1 x 230 V -20 % +15 %
Rotating field frequency 0 ... 400 Hz

1) 1.8 x I_N for 30 s

Positioning controllers for 400/460 V systems:

Size [BG]	Positioning module	Rec. 4-pole standard motor [kW]	Power input of device [kVA]	Rated current [A]	Peak current [A]	Dimensions [mm] Width x height x depth
BG2	CDE/CDB34.003,C	0,75	1,5	2,2	4,0 1)	70 x 218 x 177,5
BG2	CDE/CDB34.004,W	1,5	2,8	4,1	7,4 1)	70 x 245 x 177,5
BG2	CDE/CDB34.006,W	2,2	3,9	5,7	10,3 1)	70 x 245 x 177,5
BG3	CDE/CDB34.008,W	3,0	5,4	7,8	14 1)	70 x 303 x 250,5
BG3	CDE/CDB34.010,W	4,0	6,9	10	18 1)	70 x 303 x 250,5
BG4	CDE/CDB34.014,W	5,5	9,7	14	25 1)	120 x 303 x 250,5
BG4	CDE/CDB34.017,W	7,5	11,8	17	31 1)	120 x 303 x 250,5
BG5	CDE/CDB34.024,W	11	16,6	24	43 1)	170 x 303 x 250,5
BG5	CDE/CDB34.032,W	15	22,2	32	58 1)	170 x 303 x 250,5
BG6	CDE/CDB34.044,W	22	31	45	90 (CDE) 2) 67 (CDB) 1)	190 x 349 x 230
BG6	CDE/CDB34.058,W	30	42	60	120 (CDE) 2) 90 (CDB) 1)	190 x 349 x 230
BG6	CDE/CDB34.070,W	37	50	72	144 (CDE) 2) 108 (CDB) 1)	190 x 349 x 230
BG7	CDE/CDB34.088,W	45	62	90	180	280 x 540 x 267,5
BG7	CDE/CDB34.108,W	55	76	110	220 3)	280 x 540 x 267,5
BG7a	CDE/CDB34.140,W	75	99	143	286 3)	280 x 540 x 321
BG7a	CDE/CDB34.168,W	90	118	170	315 3)	280 x 540 x 321
BG6	CDE/CDB34.044,L	22	31	45	90 1) 3)	190 x 394,75 x 190 5)
BG6	CDE/CDB34.058,L	30	42	61	120 1) 3)/90 6)	190 x 394,75 x 190 5)
BG6	CDE/CDB34.070,L	37	50	72	144 1) 3)/108 6)	190 x 394,75 x 190 5)
BG7	CDE/CDB34.088,L	55	76	110	220 1) 3)	280 x 600 x 201 5)
BG7	CDE/CDB34.108,L	75	99	143	286 1) 3)	280 x 600 x 201 5)
BG7a	CDE/CDB34.140,L	90	118	170	340 3) 4)	280 x 600 x 281 5)
BG7a	CDE/CDB34.168,L	110	128	185	340 3) 4)	280 x 600 x 281 5)

Mains voltage 3 x 460V -25% +10%
Rotating field frequency 0 ... 400 Hz
Cooling air temperature 45°C (40 °C CDB34.003,Cx.x)
with output stage operating frequency 4kHz 40°C
with output stage operating frequency 8, 16kHz

1) I_{max} for 30s
2) I_{max} for 3s with a pre-load of 70% of the rated current
I_{max} for 10s with an output temperature of the cooling element < 45/40 °C with 4/8 k Hz operating frequency
3) I_{max} for 4 kHz
4) I_{max} for 10 s
5) Without pipe socket for water connection
6) for 60 s

Acceptance tests/Ambient conditions

CE mark

The positioning controllers[1)] conform to the requirements of the Low Voltage Directive DIN EN 61800-5-1 and the product standard EN 61800-3 (EMC).

The positioning controllers[1)] therefore conform to the requirements for installation in a machine or plant under the terms of the Machinery Directive 98/37/EC.

The CDE/CDB3000 positioning controllers[1)] are CE marked accordingly. The CE mark on the type plate indicates conformity with the above Directives.

cUL approbation

Positioning controller[1)] 0.375 to 37 kW has been granted cUL approval, this is in preparation for the 47 - 90 kW range. cUL approval is comparable to approval to UL and CSA.

1) Also applies to user and communication module

EMC acceptance tests

All positioning controllers[1)] have a sheet steel housing with an aluminium/zinc finish to enhance interference immunity (to EN61800-3, environments 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 product standard DIN EN 61800-3 (restricted availability):

Public low voltage system:
Living areas up to 10 metres motor cable length

Industrial low voltage system:
Industrial areas up to 25 metres motor cable length

An extensive range of external mains filters for side mounting and built-under installation is also available. For more details refer to the "Supplementary components" section.

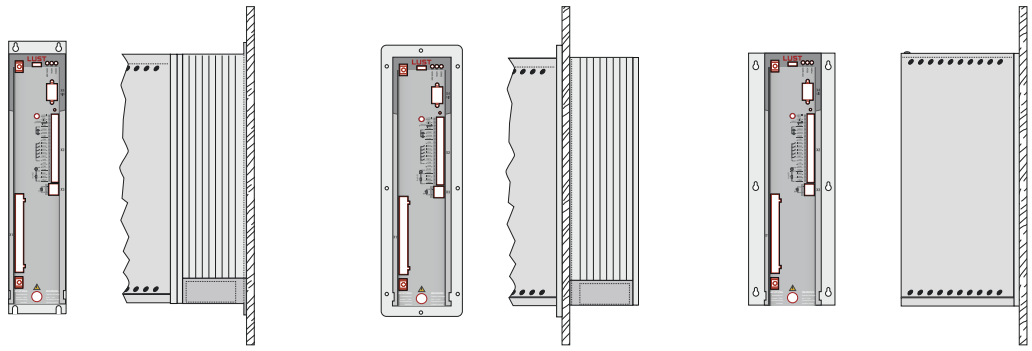
Characteristic		Positioning controller	KEYPAD KP200-XL, KP300 User and communication module
Temperature range	in operation	-10 ... 45 °C (BG1 ... BG5)[3)] 0 ... 45 °C (BG6 ... BG7) up to 55 °C with reduced power[2)]	-10 ... 55 °C
	in storage	-25 ... +55 °C	
	in transit	-25 ... +70 °C	
Relative air humidity		15 ... 85 %, condensation not permitted	
Mechanical strength to IEC 68-2-6	in stationary use	Vibration: 0.075 mm in frequency range 10 ... 58 Hz Shock: 9.8 m/s^2 in frequency range >58 ... 500 Hz	
	in transit	Vibration: 3.5 mm in frequency range 5 ... 9 Hz Shock: 9.8 m/s^2 in frequency range >9 ... 500 Hz	
Protection	Device	IP20 (NEMA 1)	
	Cooling method	Cold Plate IP20 Push-through heat sink IP54	Convection IP20
Touch protection		VBG 4	
Mounting height		up to 1000 m above MSL, over 1000 m above MSL with reduced power, max. 2000 m above above MSL	

2) not for controllers CDB32.008.C or CDB34.003.C
3) -10 ... 40 °C for controllers CDB32.008.C and CDB34.003.C

Cooling methods

The base module of the positioning controllers offers three different mounting and cooling methods (example CDB3000, size 3)

Wall mounting | **Push-through heat sink** | **Cold plate**



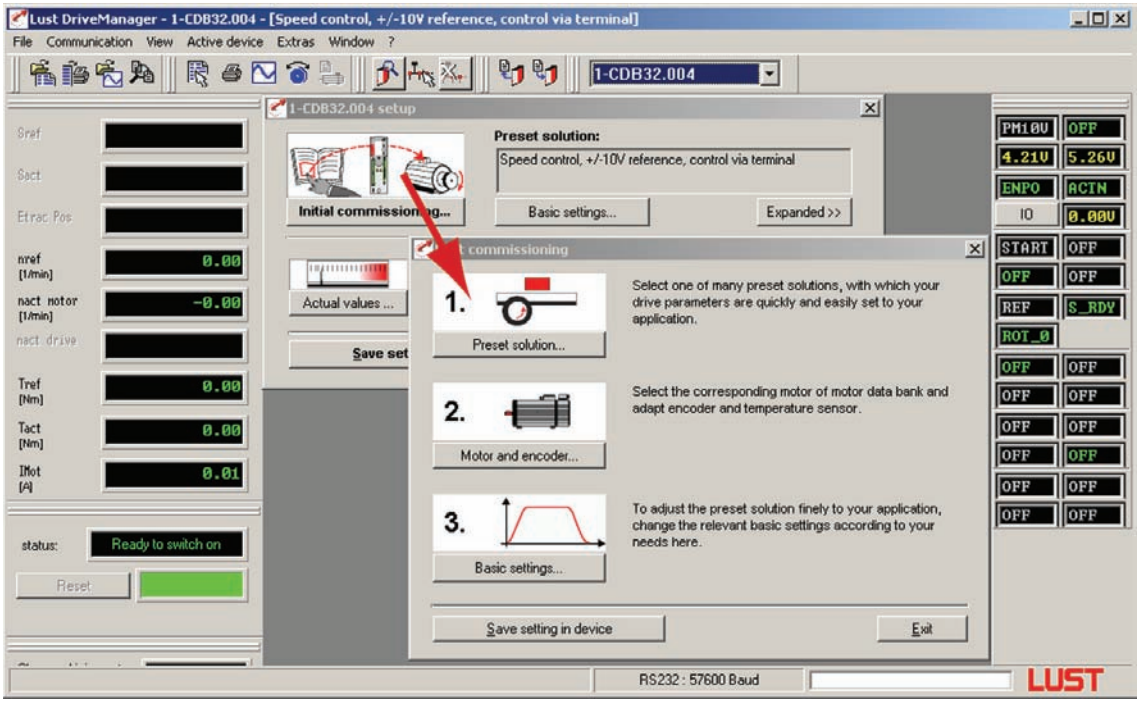
Size	Power	Positioning controller	Wall mounting	Push-through heat sink	Cold plate	Water cooled
BG1	0,375 kW 0,75 kW	CDE/CDB32.003 CDE/CDB32.004	YES[1)]	NO	YES	NO
BG2	1,5 kW 0,75 kW 1,5 kW	CDE/CDB32.008 CDE/CDB34.003 CDE/CDB34.004	YES	NO	YES	NO
BG2	2,2 kW	CDE/CDB34.006	YES	NO	On request	NO
BG3	3,0 kW 4,0 kW	CDE/CDB34.008 CDE/CDB34.010	YES	YES[2)]	On request	On request
BG4	5,5 kW 7,5 kW	CDE/CDB34.014 CDE/CDB34.017	YES	YES[2)]	On request	On request
BG5	11 kW 15 kW	CDE/CDB34.024 CDE/CDB34.032	YES	YES[2)]	On request	On request
BG6	22 kW 30 kW 37 kW	CDE/CDB34.044 CDE/CDB34.058 CDE/CDB34.070	YES	YES[2)]	On request	On request
BG7	45 kW 55 kW	CDE/CDB34.088 CDE/CDB34.108	YES	On request	NO	On request
BG7a	75 kW 90 kW	CDE/CDB34.140 CDE/CDB34.168	YES	On request	NO	On request
BG6	22 kW 30 kW 37 kW	CDE/CDB34.044,L CDE/CDB34.058,L CDE/CDB34.070,L	NO	NO	NO	JA
BG7	55 kW 75 kW	CDE/CDB34.088,L CDE/CDB34.108,L	NO	NO	NO	JA
BG7a	90 kW 110 kW	CDE/CDB34.140,L CDE/CDB34.168,L	NO	NO	NO	JA

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

2) Protection IP54

Initial commissioning made easy

The DRIVEMANAGER PC 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. You basically just need to click through the options. 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 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.

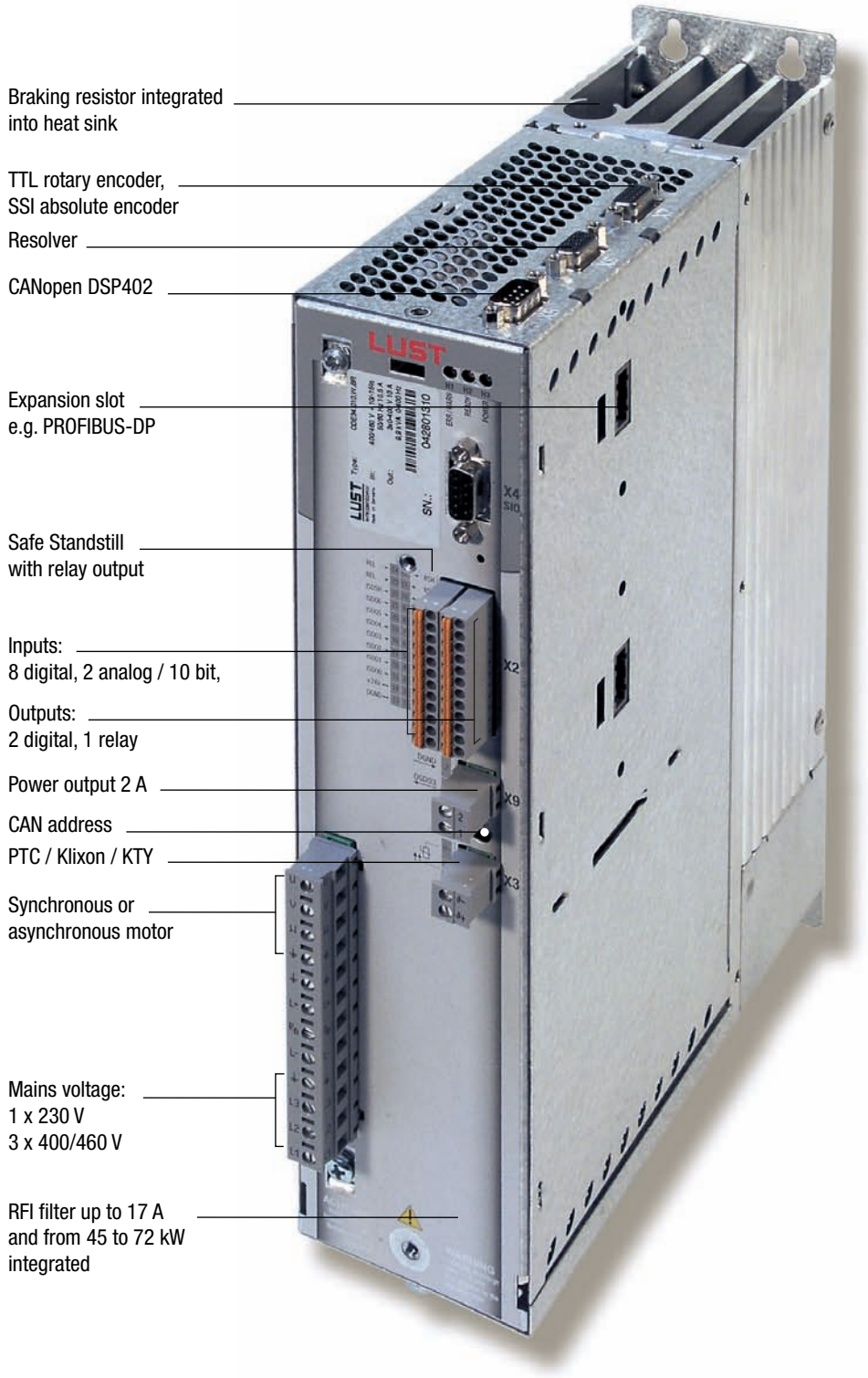
With synchronous or asynchronous motors the motor data and control loops are set using a data record that is stored in the database. With asynchronous motors, this data can also be set by the automatic identification of the connected motor.

3. Basic settings

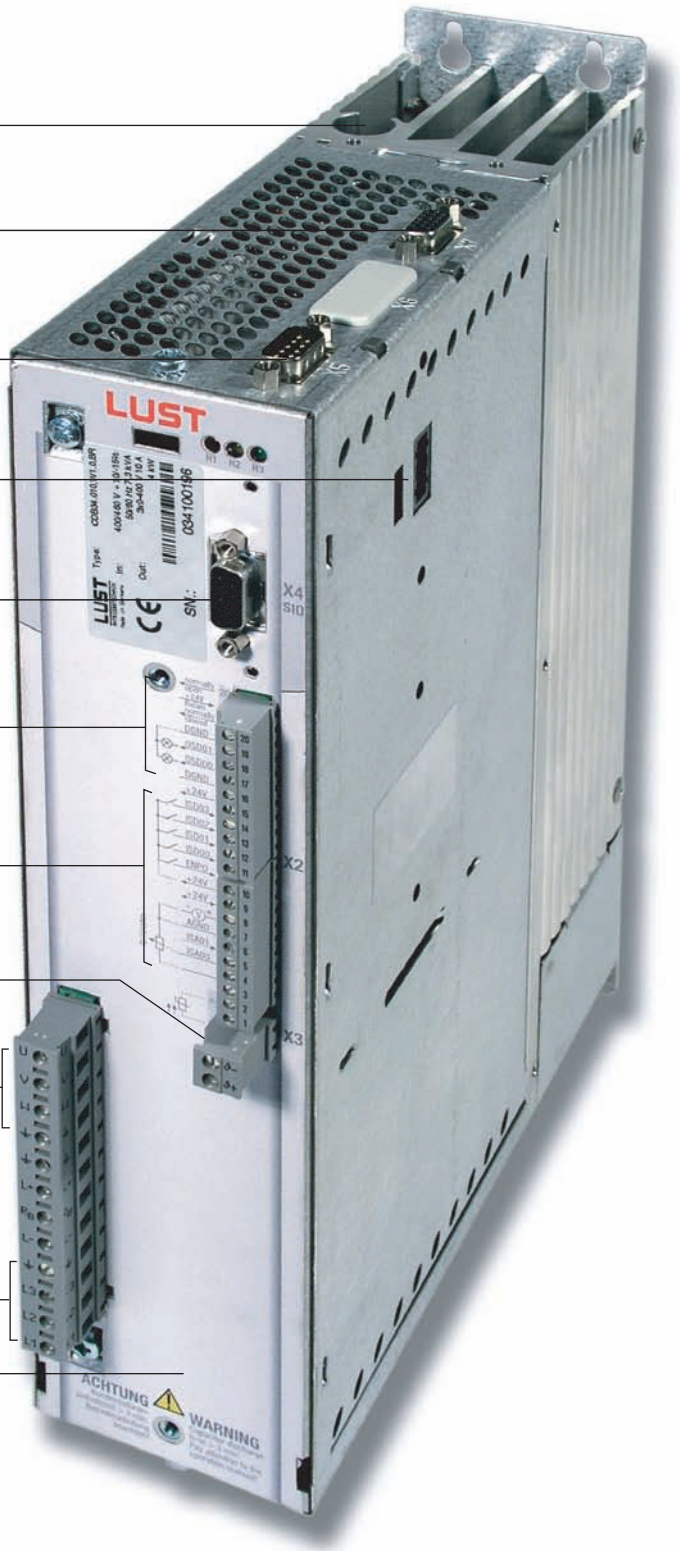
Opens a menu in which you can fine-tune your drive.

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



Specification CDB3000



ECOPOS — Positioning at its finest

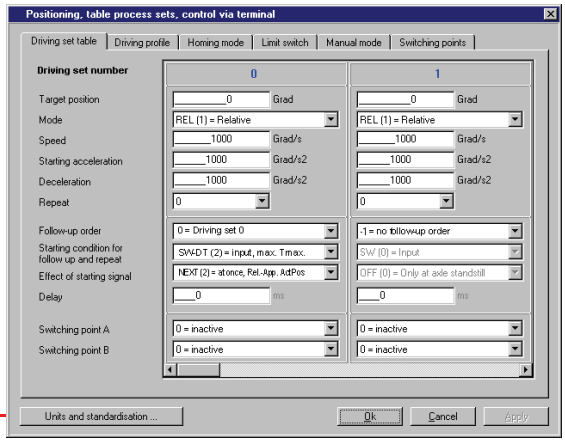
The CDE/CDB3000 drive controllers are optimised for the positioning of electric drives. Alternatively, operation of the drive can also be speed or torque controlled.

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

Driving set table with smart follow-up job logic

16 driving 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 driving set
- Time and/or signal-controlled requesting of the follow-up job
- Difference position references of the follow-up job with relative positioning



4 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

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

Field bus driving profile selection with CAN-open DSP402 or Profibus

The built-in CANopen interface offers an inexpensive networking option. CANopen guarantees trouble-free interoperability with other network users by supporting CANopen DSP402 compliant triggers and the

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

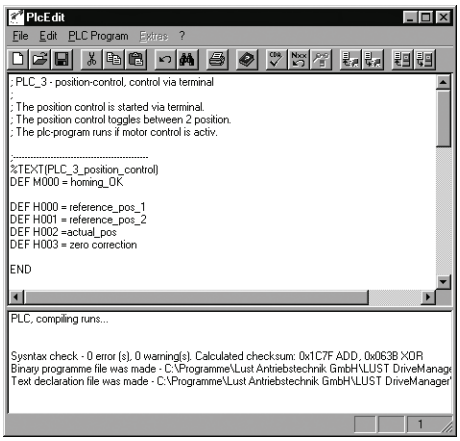
PDO control information is typically processed within 1 ms, making for very short response times.

With Profibus networking, specially matched EASY-DRIVE profiles are used for communications.

Driving 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
- Quick-stop functions
- Changeover to angle-synchronous operation (electronic gearing) with overlaid relative positions
- Output power stage on/off



The programme 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 driving set. The fact that the setpoint trajectory is generated online means that a new modified driving set can be transferred and started during ongoing positioning inside just 1ms.

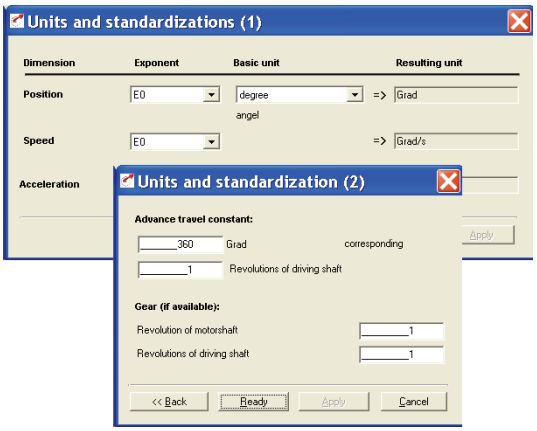
- Short cycle times thanks to a setup time of just 1 ms
- Absolute or relative positioning, endless traversing
- Linear acceleration and braking ramps or with adjustable jolt limiting for motions that are easy on the mechanics
- Jolt-limited changes to the driving job in just 1 ms even during ongoing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

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

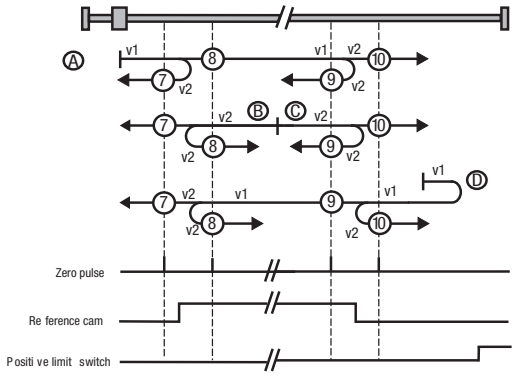
Comprehensive basic functions for positioning

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



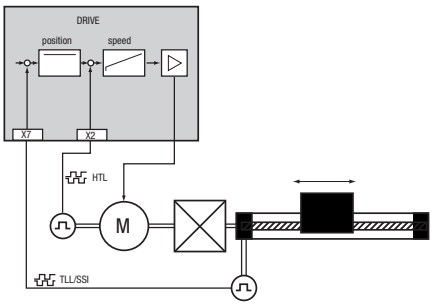
- Different types of reference traverses, including with continuous referencing for slip-prone systems such as conveyor belt



- Indexing table function for path-optimised positioning of rotary axes
- Limit switch logic
- Jog mode for manually controlling the drive
- Electronic cam group 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



Example with 2 measuring systems with the CDB3000

- 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 a master encoder input

Services

LTi 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 representative - just visit our website at

http://www.lt-i.com

Software Update Service

We are continuously improving the quality of the drive system in the interests of product development. Our Software Update Service will brief you on innovations and enhancements to individual 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
- the total cost analysis
- project management

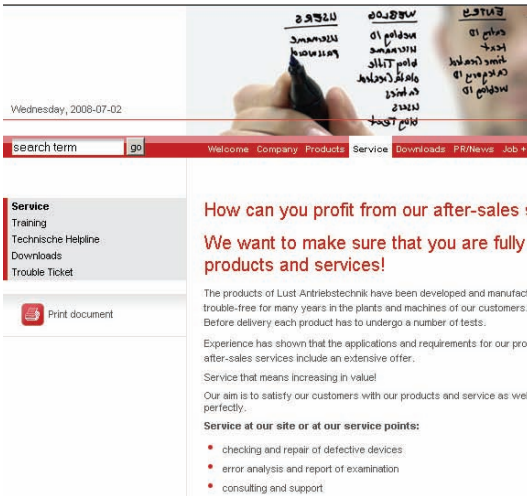
Logistics

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



Helpline

Our Helpline can assist you with:

- the 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:

Mon.-Thur.: 8 a.m. - 4.30 p.m.
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Tel. +49(0) 6441/966-180

Fax: +49(0) 6441/966-177
e-mail: helpline@lt-i.com.de

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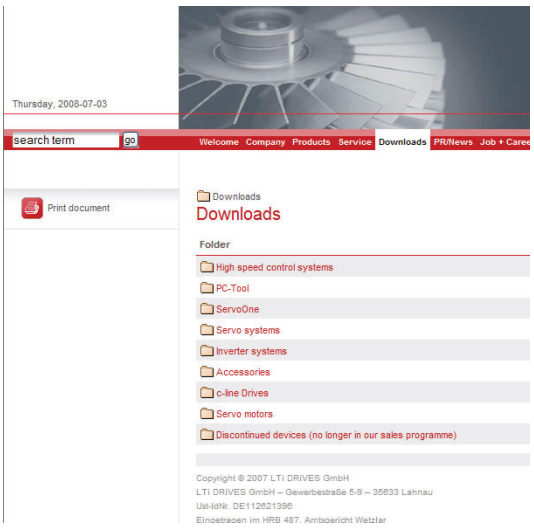
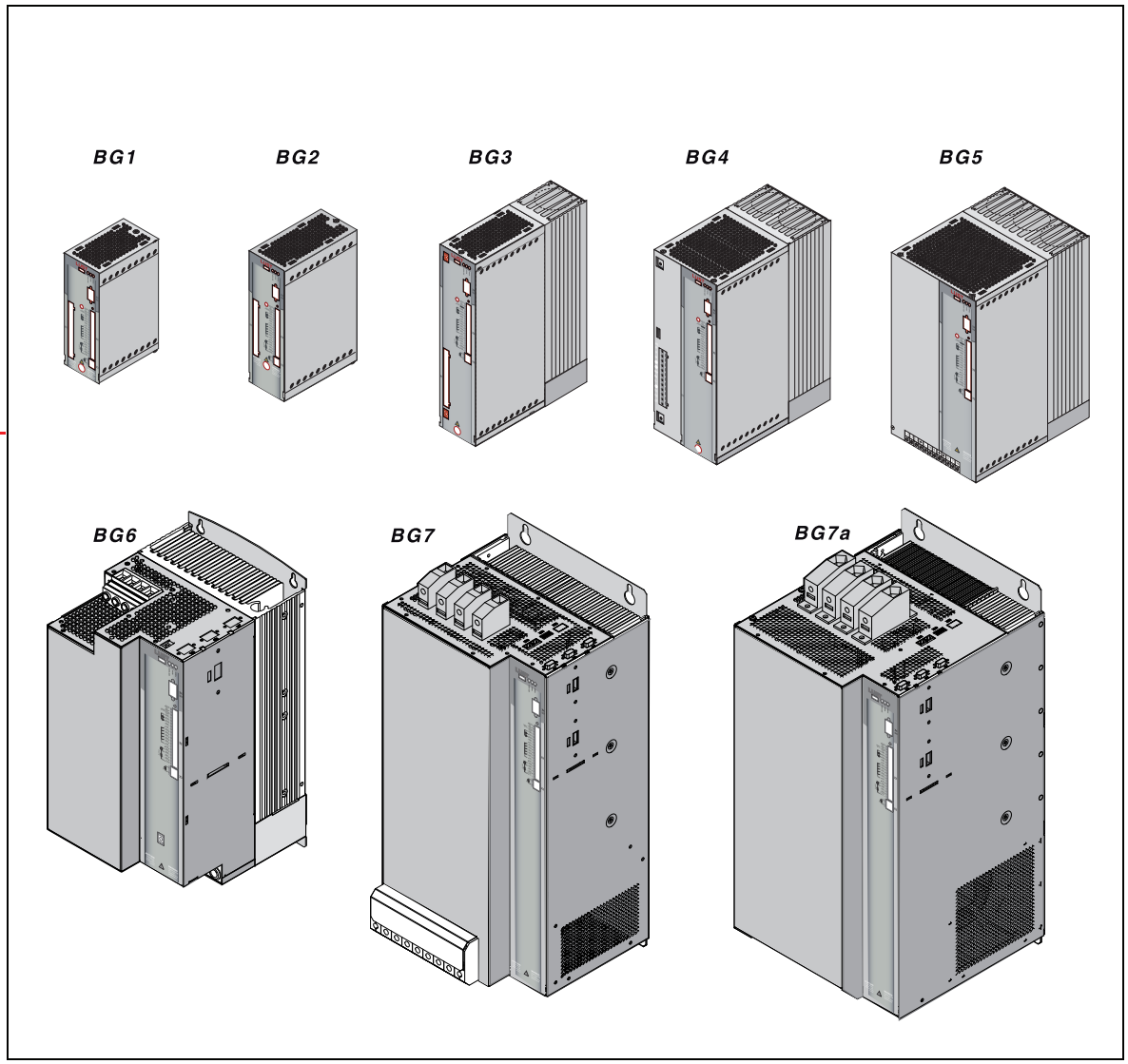
- You will find detailed information on our products in the "Downloads" section of our website.



Overview of positioning controllers 0.375 to 90 kW/2.4 to 170 A



CDE/CDB3000 Sizes	BG1	BG2	BG2	BG3	BG4	BG5	BG6	BG7a[1)]	BG7b[1)]
CDE3000 Power stages	2,4 A 4,0 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 170 A
CDB3000 Power stages	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 90 kW
Mains voltage	1 x 208 V, 230 V, 240 V		3 x 400, 440, 460 V				3 x 400, 440, 480 V		

Current carrying 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 operation

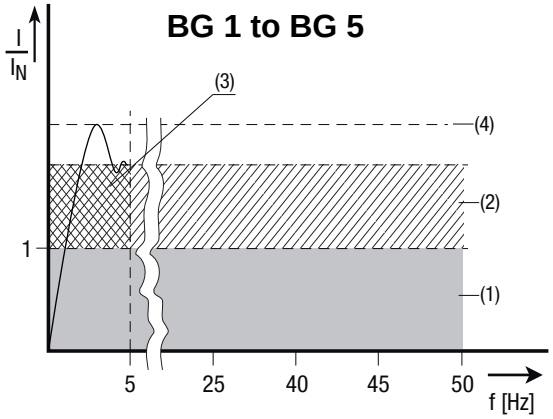
**(2) Intermittent operation*
5 Hz rotating field frequency**

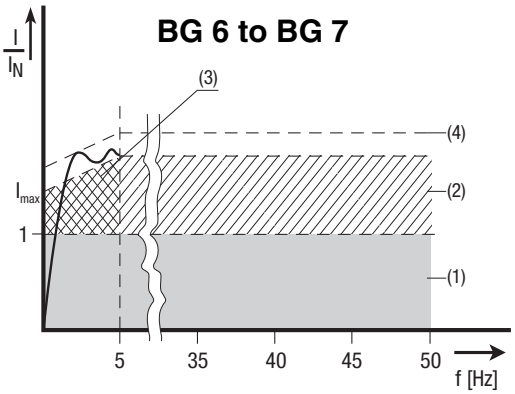
**(3) Intermittent operation 0 to 5 Hz
rotating field frequency**

(4) Pulse mode

Positioning controller 2.2 to 32 A (0.7 to 15 kW)
I/I_N = 2.2 with 4/8/16 kHz

Positioning controller 45 to 170 A (22 to 90 kW)
I/I_N = 2.1 with 4/8 kHz





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

Positioning controllers for 230 V systems

Positioning module	Rec. 4-pole standard motor [kW]	Switching frequency of power stage [kHz]	Rated current [A]	Peak current for intermittent mode 0 to 5 Hz [A]	Peak current for intermittent mode > 5 Hz [A]
CDE/CDB 32.003,Cx.x	0.37	4.8	2.4	4.3	4.3
		12	2.1	3.75	3.75
		16	1.8	3.2	3.2
CDE/CDB 32.004,Cx.x[1)]	0.75	4.8	4	7.2	7.2
		12	3.5	5.7	6.3
		16	3	5.0	5.4
CDB 32.008,Cx.x[1)] CDE/CDB 32.008,Wx.x	1.5	4.8	7.1	12.8	12.8
		12	6.3	10	11.35
		16	5.5	8	9.9

Peak current for 30 s with positioning controllers 0.375 to 1.5 kW/2.4 A to 7.1 A
Cooling air temperature 45 °C (40 °C CDB32.008.Cx.x)
at power stage switching frequency 4 kHz
40 °C at power stage switching frequency 8, 16 kHz
1) With heat sink HS3... or additional cooling surface

Mains voltage 1 x 230 V -20 % +15 %
Motor cable length 10 m
Mounting height 1000 m above MSL
End-to-end mounting

Positioning controllers for 400/460 V systems:

Positioning Module	Rec. 4-pole standard motor [kW]	Switching frequency of power stage	Rated current I_N[A] at 400 V	Rated current I_N[A] at 460 V	Peak current for intermittent mode 0 to 5 Hz [A]			I^2 x t
					0 Hz	5 Hz	> 5 Hz	[s]
CDE/CDB 34.003,Cx.x	0,75	4 8 12 16	2,2 2,2 1,6 1,0	2,2 2,2 1,6 1,0	4 4 2,9 1,8		4 4 2,9 1,8	30
CDE/CDB 34.005,Wx.x	1,5	4 8 12 16	4,1 4,1 3,2 2,4	4,1 3,6 - -	7,4 7,4 5,7 4,3		7,4 7,4 5,7 4,3	30
CDE/CDB 34.006,Wx.x	2,2	4 8 12 16	5,7 5,7 4,15 2,6	5,7 5,7 - -	10,3 10,3(CDE)/ 7,8(CDB) 7,5(CDE)/6,4(CDB) 4,7		10,3 10,3 7,5 4,7	30
CDE/CDB 34.008,Wx.x	3,0	4, 8 12 16	7,8 6,4 5	7,8 - -	14 11 7,8		14 11 9	30
CDE/CDB 34.010,Wx.x	4,0	4 8 12 16	10 10 8,1 6,2	10 8,8 - -	18 18 13 7,8		18 18 14,5 11	30
CDE/CDB 34.014,Wx.x	5,5	4 8 12 16	14 14 10,3 6,6	14 12,2 - -	25 25 18 12		25 25 18 12	30
CDE/CDB 34.017,Wx.x	7,5	4 8 12 16	17 17 12,5 8	17 13,5 - -	31 31 23 14		31 31 23 14	30
CDE/CDB 34.024,Wx.x	11	4, 8 12 16	24 19,5 15	24 - -	43 35 27		43 35 27	30
CDE/CDB 34.032,Wx.x	15	4 8 12 16	32 32 26 20	32 28 - -	58 58 39 32		58 58 47 36	30
CDE34.044,Wx.x	22	4, 8, 12, 16	45	41	90[1)]		90[1)]	3/10[1)]
CDE34.058,Wx.x	30	4, 8, 12, 16	60	55	120[1)]		120[1)]	3/10[1)]
CDE34.070,Wx.x	37	4, 8, 12, 16	72	66	144[1)]		144[1)]	3/10[1)]
CDB34.044,Wx.x	22	4, 8, 12, 16	45 45	41 41	67 45		67 67[1)]	30 3/10[1)]
CDB34.058,Wx.x	30	4, 8, 12, 16	60 60	55 55	90 60		90 90[1)]	30 3/10[1)]
CDB34.070,Wx.x	37	4, 8, 12, 16	72 72	66 66	108 72		108 108[1)]	30 3/10[1)]
CDE/CDB 34.088,Wx.x	45	4, 8, 12, 16	90 90	82 82	170 134	180 180	180 180	30
CDE/CDB 34.108,Wx.x	55	4, 8, 12, 16	110 110	101 101	170 134	220 165	220 165	30
CDE/CDB 34.140,Wx.x	75	4, 8, 12, 16	143 143	131 131	190 151	286 215	286 215	30
CDE/CDB 34.168,Wx.x	90	4, 8, 12, 16	170 170	156 156	190[1)] 151[1)]	315[1)] 220[1)]	315[1)] 220[1)]	3/10[1)]

Cooling air temperature 45 °C (40 °C CDB34.003.Cx.x)
at power stage switching frequency 4 kHz
40 °C at power stage switching frequency 8, 16 kHz

1) I_{max} for 3 s with a pre-load of 70% of the rated current I_N
I_{max} for 10 s with an output temperature of the cooling element < 45/40 °C
with 4/8 kHz operating frequency

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

Positioning controllers for 400/460 V systems, type „L“

Servocontroller	Switching frequency of power stage	Rotating field frequency increasing linear 0 to 5 Hz [Aeff]		Rated current IN [Aeff]	Peak current for intermittent mode [Aeff]	I² x t
	[kHz]	0 Hz	5 Hzt	> 5 Hz	> 5 Hz	[s]
CDB.x4.044,L	4	67,5	67,5	45	(1,5x) 67,5	60
	8	45	45	45	(1,5x) 67,5	60
	12	36	36	36	(1,5x) 54	60
	16	27	27	27	(1,5x) 41	60
CDE.x4.044,L	4	90	90	45	(2,0x) 90	30
	8	90	90	45	(2,0x) 90	30
	12	90	90	45	(2,0x) 90	30
	16	84	84	42	(2,0x) 84	30
CDB.x4.058,L	4	90	90	60	(1,5x) 90	60
	8	60	60	60	(1,5x) 90	60
	12	48	48	48	(1,5x) 72	60
	16	36	36	36	(1,5x) 54	60
CDE.x4.058,L	4	120	120	60	(2,0x) 120	30
	8	120	120	60	(2,0x) 120	30
	12	116	116	58	(2,0x) 116	30
	16	84	84	42	(2,0x) 84	30
CDB.x4.070,L	4	108	108	72	(1,5x) 108	60
	8	72	72	72	(1,5x) 108	60
	12	58	58	58	(1,5x) 87	60
	16	42	42	42	(1,5x) 63	60
CDE.x4.070,L	4	144	144	72	(2,0x) 144	30
	8	144	144	72	(2,0x) 144	30
	12	116	116	58	(2,0x) 116	30
	16	84	84	42	(2,0x) 84	30
CDB/CDE.x4.088,L	4	205	220	110	(2,0x) 220	30
	8	165	187	110	(1,7x) 187	30
	12	132	165	110	(1,5x) 165	30
	16	106	135	90	(1,5x) 135	30
CDB/CDE.x4.108,L	4	230	286	143	(2,0x) 286	30
	8	190	215	143	(1,5x) 215	30
	12	152	172	114	(1,5x) 172	30
	16	122	138	91	(1,5x) 138	30
CDB/CDE.x4.140,L	4	230	340	170	(2,0x) 340	10
	8	190	255	170	(1,5x) 255	10
	12	152	204	136	(1,5x) 204	10
	16	122	163	109	(1,5x) 163	10
CDB/CDE.x4.168,L	4	230	340	210	(1,6x) 340	10
	8	190	255	210	(1,2x) 255	10
	12	152	204	168	(1,2x) 204	10
	16	122	163	134	(1,2x) 163	10

Notes:

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

Type CDB-32.004.C

CDE/CDB3 ☐.☐☐☐, ☐x.x, ☐☐, ... ☐☐

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

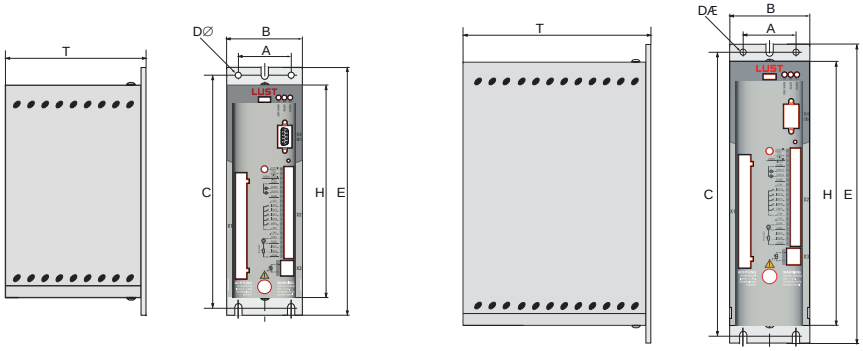
Order code

Tech. data	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[1)]
Effective rated current (I_N at 4/8 kHz)	2.4 A	4.0 A	2.2 A
Peak current 1.8 x I_N (4/8 kHz) for 30 s	4.3 A	7.2 A	4.0 A
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 -20 % +15 %		3 x 460 V -25 % +10 %
Power input of device	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 CDB3000	 49/52 W 35/30 W	 63/70 W 48/55 W	 90/97 W 55/70 W
Braking chopper power electronics			
Minimum ohmic resistance of an externally installed braking resistor	100 Ω	100 Ω	180 Ω

1) Permissible currents at 460 V are documented on pages 2-2 and 2-3

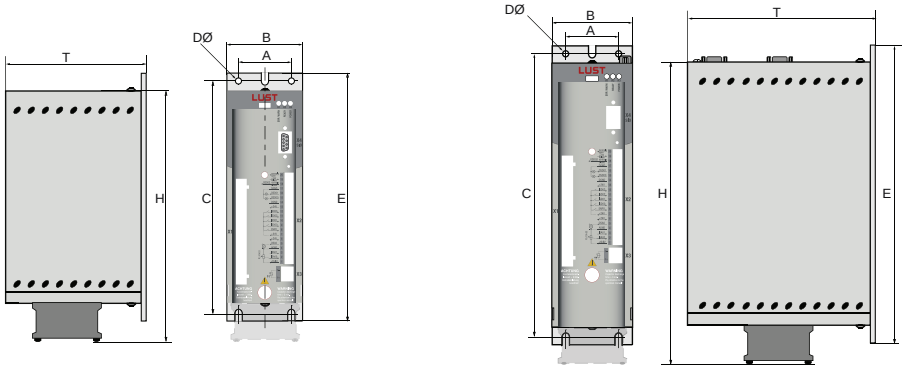
Cooling method	CDB32.003. C x.x	CDB32.004. C x.x	CDB34.003. C x.x
Protection	IP20		
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage)		40 °C
Weight	1.6 kg		2.3 kg
Single mounting	-	Additional cooling via mounting plate (unpainted) of 0.065 m²	-
End-to-end mounting of several 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
D ∅	∅ 4.8		∅ 4.8

Dimensional drawings



Cooling method	CDE32.003. C x.x	CDE32.004. C x.x	CDE34.003. C x.x
Protection	IP20		
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage)		45 °C
Weight	1.6 kg		2.3 kg
Single mounting	-	Additional cooling via mounting plate (unpainted) of 0.065 m²	-
End-to-end mounting of several positioning controllers	-	with accessories HS32.1BR, HS32.100	-
Dimensions	**BG1 [mm]**		**BG2 [mm]**
W (width)	70		70
H (height)	220		245
D (depth)	120		145
A	50		50
C	230		255
E	242		267
D ∅	∅ 4.8		∅ 4.8

Dimensional drawings



Positioning controllers CDE3000 4.1 to 7.1 A (BG2)

Type CDE-34.006.W

CDE3 □.□□□, □x.x, □□, ... □□

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

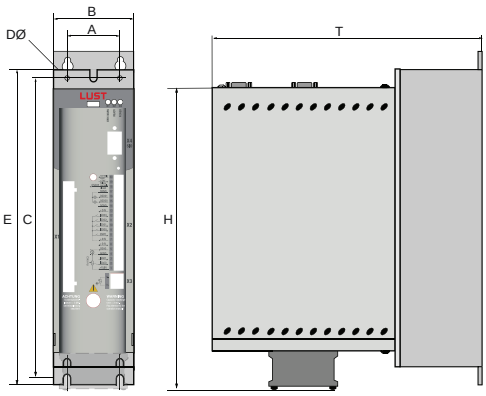
Order code

Tech. data	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[1)]	3 x 0 ... 400/460 V[1)]
Effective rated current (I_N at 4/8 kHz)	7.1 A	4.1 A	5.7 A
Peak current 1.8 x I_N (4.8 kHz) for 30 s	12.8 A[2)]	7.4 A[2)]	10.3 A[2)]
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 -20 % +15 %	3 x 460 V -25 % +10 %	
Power input of device	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 electronics			
Peak braking power with int. braking resistor (only with version CDE34 ..., Wx.x, BR)	1.7 kW at 90 W	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) Permissible currents at 460 V are documented on pages 2-3 and 2-3

2) For further current data see pages 2-2 and 2-3

Cooling method	CDE32.008. W x.x	CDE34.005. W x.x	CDE34.006. W x.x	Dimensional drawing
Mechanism				
Protection	IP20	IP20	IP20	
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)	247			
T (depth)	220			
A	40			
C	270			
E	260			
D ∅	∅ 4.8			Vertical mounting, wall mounting



Version	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)

Type CDB-32.008.C

CDB3 ☐.☐☐☐, ☐x.x, ☐☐, ... ☐☐

- Technical data
- Cooling method
- Version

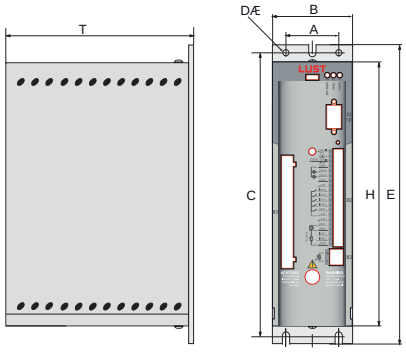
For complete ordering data please refer to the following tables.

Tech. data	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[1)]	3 x 0 ... 400/460 V[1)]
Effective rated current (I_N at 4/8 kHz)	7.1 A	4.1 A	5.7 A
Peak current 1.8 x I_N (4.8 kHz) for 30 s	12.8 A[2)]	7.4 A[2)]	10.3 A[2)]
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 -20 % +15 %	3 x 460 V -25 % +10 %	3 x 460 V -25 % +10 %
Power input of device	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 electronics			
Peak braking power with int. braking resistor (only with version CDB34 ..., Wx.x, BR)	1.7 kW at 90 W	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) Permissible currents at 460 V are documented on pages 2-2 and 2-3

2) For further current data see pages 2-2 and 2-3

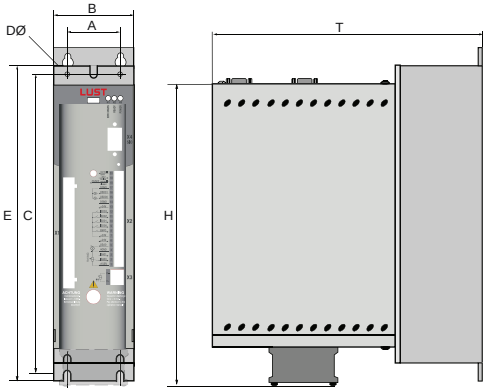
Cooling method	CDB32,008,C x.x	Dimensional drawing
Mechanism		
Protection	IP20	
Cooling air temperature	40 °C	
Weight	2.3 kg	
Mounting type		
Single mounting	Additional cooling via cabinet mounting plate (unpainted) of 0.3 m²	
End-to-end mounting of several positioning controllers	With CDB32.008,W only	
Dimensions	**BG2** [mm]	
B (width)	70	
H (height)	218	
T (depth)	145	
A	50	
C	230	
E	240	
D ∅	∅ 4.8	



Vertical mounting, cold plate

Cooling method	CDB32.008. W	CDB34.005. W	CDB34.006. W
Mechanism			
Protection	IP20		
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage)		
Weight	3.5 kg		
Dimensions	**BG2[mm]**		
W (width)	70		
H (height)	247		
D (depth)	220		
A	40		
C	260		
E	270		
D ∅	∅ 4.8		

Version	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



Note: 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

Type CDB-34.008.W

CDE/CDB3 □.□□□, □x.x, □□, ... □□

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

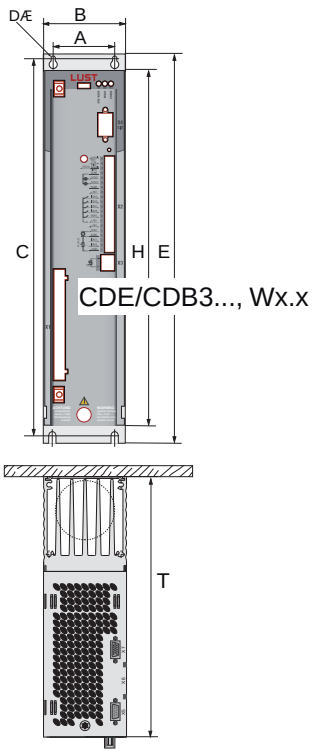
Tech. data	CDE/CDB34.008	CDE/CDB34.010
Output, motor side		
Recommended rated power with 4-pin Standard motor	3.0 kW	4.0 kW
Voltage	3 x 0 ... 400/460 V[1)]	
Effective rated current (I_N at 4/8 kHz)	7.8 A	10 A
Peak current 1.8 x I_N (4 kHz) for 30 s	14 A[2)]	18 A[2)]
Rotating field frequency	0 ... 400 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 460 V -25 % +10 %	3 x 460 V -25 % +10 %
Power input of device	5.7 kVA	7.3 kVA
Asymmetry	±3 % max.	
Frequency	50/60 Hz ±10 %	
Power loss 4/8,12, 16 kHz CDE3000 CDB3000	 150/177 W 135/162 W	 187/222 W 172/207 W
Braking chopper power electronics		
Peak braking power with int. braking resistor (only with version CDE/CDB34 ..., Wx.x, BR)	6.0 kW at 90 W	6.0 kW at 90 W
Minimum ohmic resistance of an externally installed braking resistor	81 Ω	81 Ω

1) Permissible currents at 460 V are documented on pages 2-2 and 2-3

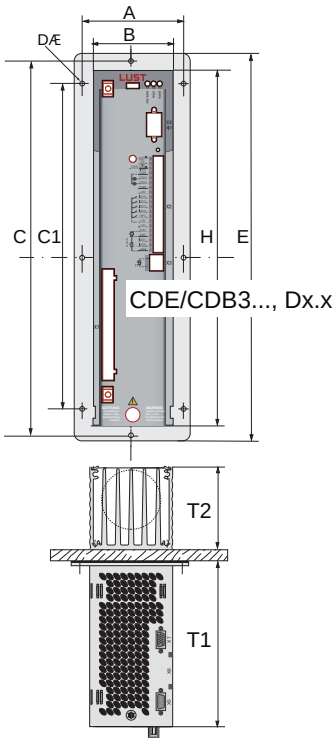
2) For further current data see pages 2-2 and 2-3

	CDE/CDB34 ..., W x.x	CDE/CDB34 ..., D x.x
Cooling method	Wall mounting	Push-through heat sink
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting, heat sink pushed through mounting plate
Protection	IP20	IP20 (device) IP54 (heat sink side)
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage)	
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
D ∅	∅ 4.8	∅ 4.8
E	330	340
C1	-	200

Dimensional drawings



CDE/CDB3..., Wx.x



CDE/CDB3..., Dx.x

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

Type CDB-34.014.W

CDE/CDB3 ☐.☐☐☐, ☐x.x, ☐☐, ... ☐☐

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

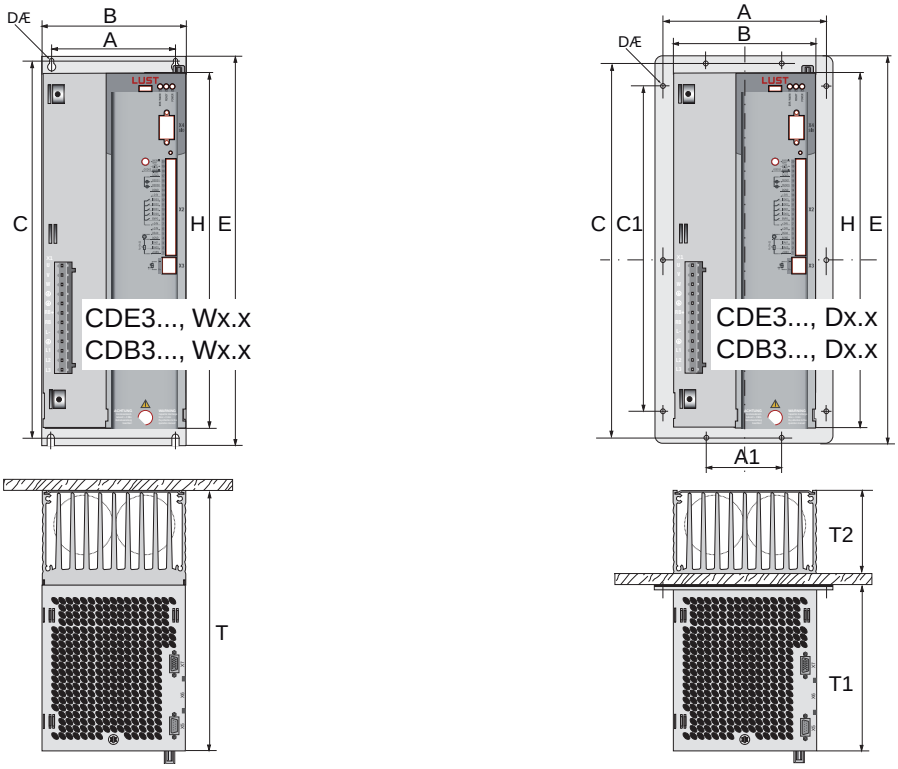
Tech. data	CDE/CDB34.014	CDE/CDB34.017
Output, motor side		
Recommended rated power with 4-pole Standard motor	5.5 kW	7.5 kW
Voltage	3 x 0 ... 400/460 V[1)]	
Effective rated current (I_N at 4/8 kHz)	14 A	17 A
Peak current 1.8 x I_N (4 kHz) for 30 s	25 A[2)]	31 A[2)]
Rotating field frequency	0 ... 400 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 460 V -25 % +10 %	3 x 460 V -25 % +10 %
Power input of device	10.2 kVA	12.4 kVA
Asymmetry of mains voltage	±3 % max.	
Frequency	50/60Hz ±10 %	
Power loss 4/8, 12, 16 kHz CDE3000 CDB3000	 225/283 W 210/268 W	 270/340 W 255/325 W
Braking chopper power electronics		
Peak braking power with int. braking resistor (only with version CDE/CDB3 ..., Wx.x, BR)	6.0 kW at 90 W	6.0 kW at 90 W
Minimum ohmic resistance of an externally installed braking resistor	47 Ω	47 Ω

1) Permissible currents at 460 V are documented on pages 2-2 and 2-3

2) For further current data see pages 2-3

	CDE/CDB3..., W x.x	CDE/CDB3..., D x.x
Cooling method	**Wall mounting**	**Push-through heat sink**
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting, heat sink pushed through mounting plate
Protection	IP20	IP20 (device) IP54 (heat sink side)
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage)	
Weight	6.5 kg	6.7 kg
Dimensions	**BG4 [mm]**	**BG4 [mm]**
B (width)	120	120 (160)
H (height)	300	300
T (depth)	218	T1 138, T2 80
A	80	A 140, A1 80
C	320	320
D ∅	∅ 4.8	∅ 4.8
E	330	340
C1	-	200

Dimensional drawings



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

Type CDB-34.024.W

CDE/CDB3 ☐.☐☐☐, ☐x.x, ☐☐, ... ☐☐

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

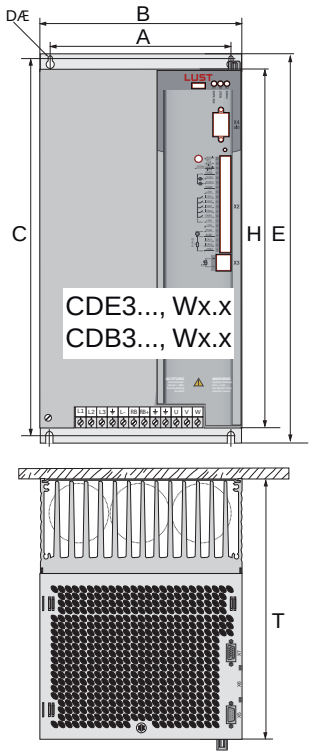
Tech. data	CDE/CDB34.024	CDE/CDB34.032
Output, motor side		
Recommended rated power with 4-pin Standard motor	11 kW	15 kW
Voltage	3 x 0 ... 400/460 V[1)]	
Effective rated current (I_N at 4/8 kHz)	24 A	32 A
Peak current 1.8 x I_N (4 kHz) for 30 s	43 A[2)]	58 A[2)]
Rotating field frequency	0 ... 400 Hz	
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 460 V -25 % +10 %	3 x 460 V -25 % +10 %
Power input of device	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 CDB3000	 330/415 W 315/400 W	 415/525 W 400/510 W
Braking chopper power electronics		
Peak braking power with int. braking resistor (only with version CDE/CDB3 ..., Wx.x, BR)	6.0 kW at 90 W	6.0 kW at 90 W
Minimum ohmic resistance of an externally installed braking resistor	22 Ω	22 Ω

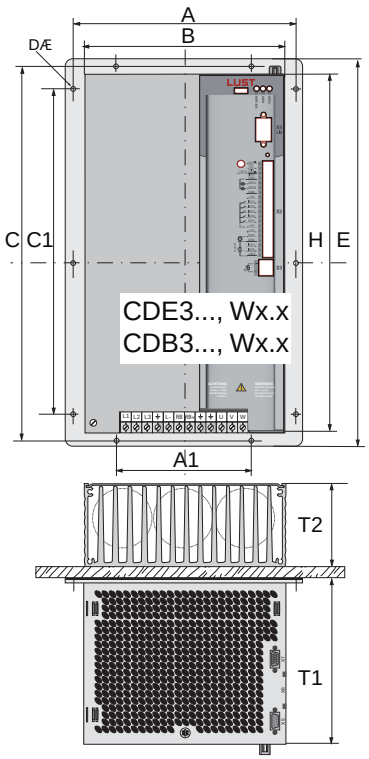
1) Permissible currents at 460 V are documented on pages 2-2 and 2-3

2) For further current data see pages 2-3

	CDE/CDB3 ..., W x.x	CDE/CDB3 ..., D x.x
Cooling method	**Wall mounting**	**Push-through heat sink**
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting, heat sink pushed through mounting plate
Protection	IP20	IP20 (device) IP54 (heat sink side)
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage)	
Weight	7.2 kg	7.4 kg
Dimensions	**BG5 [mm]**	**BG5 [mm]**
B (width)	170	170 (210)
H (height)	300	300
T (depth)	218	T1 138. T2 135
A	130	A 190, A1 100
C	320	320
D ∅	∅ 4.8	∅ 4.8
E	330	340
C1	-	200

Dimensional drawings





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

Type CDB-34.045.W

CDE/CDB3 ☐.☐☐☐, ☐x.x, ☐☐, ... ☐☐

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

Tech. data	CDE/CDB34.044	CDE/CDB34.058	CDE/CDB34.070
Output, motor side CDE3000			
Voltage [1)3)]	3 x 0 ... 400/460 V - 10 %		
Effective rated current (I_N at 4/8 kHz)	45 A	60 A	72 A
Peak current 2 x I_N (4/8 kHz) for 3 s	90 A	120 A	144 A
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)		
Output, motor side CDB3000			
Device rated power (400 V)	31 kVA	42 kVA	50 kVA
Voltage [1)3)]	3 x 0 ... 400/460 V - 10 %		
Effective rated current IN (at 4 kHz)	45 A	60 A	72 A
Peak current (1.5 x I_N for 30 s)	67 A	90 A	108 A
Rotating field frequency	0 ... 400 Hz		
Switching frequency of power stage	**4**, 8, 12, 16 kHz (factory setting 4 kHz at 40 °C cooling air temperature)		
Input, mains side			
Mains voltage	3 x 400/480 V -25 % +10 %		
Power input of device	31 kVA	42 kVA	50 kVA
Asymmetry of mains voltage	±3 % max.		
Frequency	50 / 60 Hz ±10 %		
Power loss 4/8 kHz	610 / 520 W CDE/CDB	830 / 700 W CDE/CDB	1010 / 860 W CDE/CDB
Braking chopper power electronics			
Minimum ohmic resistance of an externally installed braking resistor	18 Ω	18 Ω	13 Ω

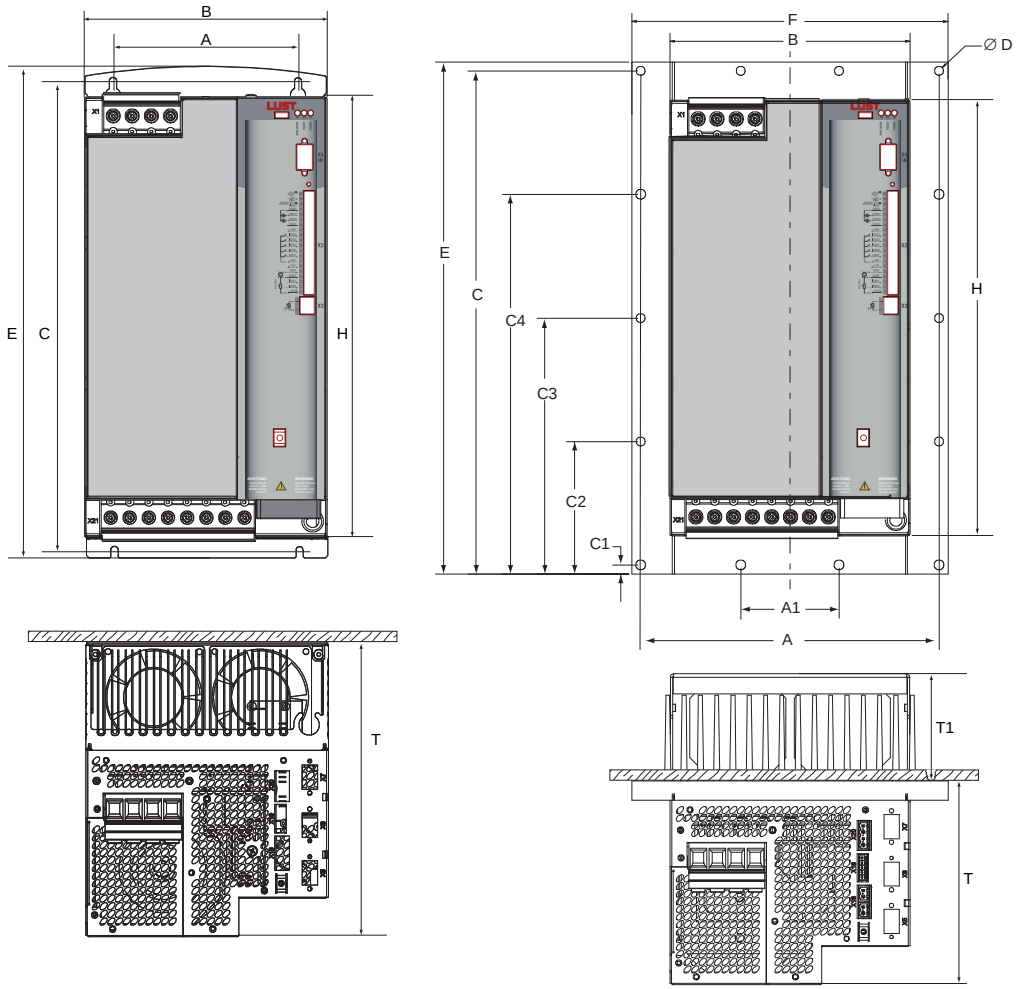
1) For further power data,please see page 2-2 and 2-3

2) Please note that this device design leads to 10% voltage losses.

3) 2.0 x IN for 3 s with a pre-load of 70% of the rated current IN
2.0 x IN for 10 s with an output temperature of the cooling element < 45/40 °C with 4/8 kHz operating frequency

	CDE/CDB3..., W x.x	CDE/CDB3..., D x.x
Cooling method	Wall mounting	Push-through heat sink
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting on mounting plate or cooling section
Protection	IP20	IP20 (device) IP54 (heat sink side)
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage) 40 C (bei ≥8 kHz)	
Weight	13 kg	15 kg
Dimensions	**BG6 [mm]**	**BG6 [mm]**
B (width)	190	190
H (height)	348	345/H1 = 405
T (depth)	230	161/T1 = 85
A	150	236/A1 = 78
C	365	C1 = 7 / C2 = 104,75 / C3 = 202,5 / C4 = 300,25 / C5 = 398
D ∅	∅ 5.6	∅ 7.5
E	382	-
F	-	350

Dimensional drawings



Positioning controllers (BG7 / 7a) CDE3000 90 to 170 A CDB300047to90kW

Type CDB-34.090.W

CDE/CDB3 □.□□□, □x.x, □□, ... □□

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

Tech. data	CDE/CDB34.088[4)]	CDE/CDB34.108[4)]	CDE/CDB34.140[4)]	CDE/CDB34.168[4)]
Output, motor side CDB3000				
Voltage[1)3)]	3 x 0 ... 400/460 V -10 %			
Effective rated current IN (at 4 kHz)	90 A	110 A	143 A	170 A
Peak current 2.0 x I_N for 30 s)	180 A	220 A	286 A	340 A
Rotating field frequency	0 ... 400 Hz			
Switching frequency of power stage	**4**, 8 kHz (factory setting 4 kHz)			**4** kHz (factory setting 4 kHz)
Input, mains side				
Mains voltage	3 x 400/480 V -25 % +10 %			
Power input of device	62 kVA	76 kVA	99 kVA	118 kVA
Asymmetry of mains voltage	±3 % max.			
Frequency	50 / 60 Hz ±10 %			
Power loss 4/8 kHz	1300 / 1050 W CDE / CDB	1600 / 1300 W CDE / CDB	2100 / 1700 W CDE / CDB	2500 / 2000 W CDE / CDB
Braking chopper power electronics				
Minimum ohmic resistance of an externally installed braking resistor	12 Ω	10 Ω	5.6 Ω	5.4 Ω

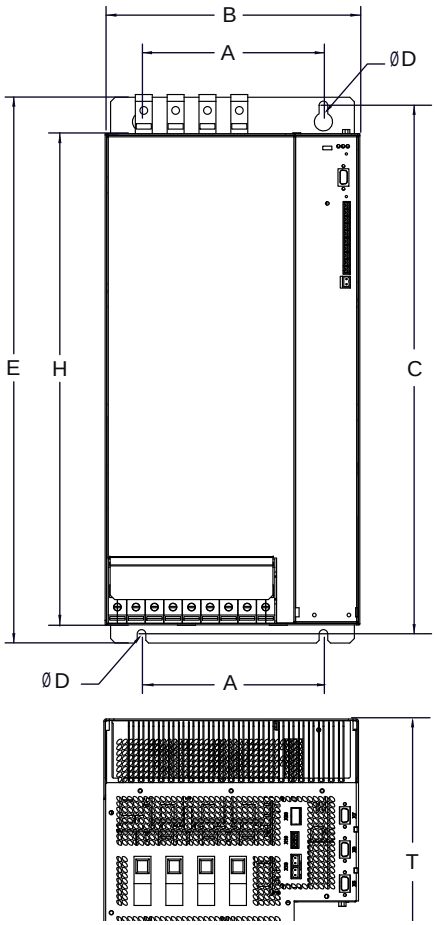
1) For further power data, please see page 2-2 and 2-3

2) Please note that this device design leads to 10% voltage losses.

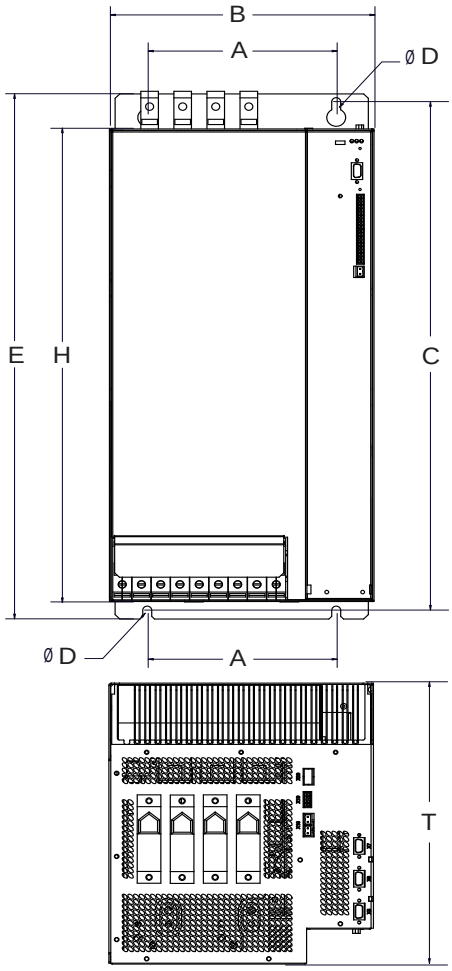
	CDE/CDB34.088, W x.x to CDE/CDB34.108, W x.x	CDE/CDB34.140,Wx.x to CDE/CDB34.168, W x.x
Cooling method	**Wall mounting**	**Wall mounting**
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting with unhindered air flow
Protection	IP20	IP20 (device) IP54 (heat sink side)
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage)	45 °C (at 4 kHz switching frequency of power stage)
Weight	28 kg	32 kg
Dimensions	**BG7 [mm]**	**BG7a [mm]**
B (width)	280	280
H (height)	540	540
T (depth)	267,5	321
A	200	200
C	581	581
D ∅	∅ 9,5	∅ 9,5
E	600	600

* Not available at time of going to press.

Dimensional drawing BG 7a



Dimensional drawing BG7b



Positioning controllers (BG6) Liquid cooling
CDE3000,L 45 bis 72 A CDB3000,L 22 bis 37 kW

Type CDB-34.044,L

CDE/CDB3 ☐.☐☐☐, ☐x.x, ☐☐,L...☐☐

- Technical Data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

Tech. data	CDE/CDB34.044,L	CDE/CDB34.058,L	CDE/CDB34.070,L
Output, motor side CDE3000			
Voltage [2]		3 x 0 ... 380/460 V	
Effective rated current (I_N at 8 kHz) [1]	45 A	61 A	72 A
Peak current		please see page 2-4	
Rotating field frequency		0 ... 400 Hz	
Switching frequency of power stage		4, 8, 12, 16 kHz (factory setting 4 kHz)	
Output, motor side CDB3000			
Device rated power (400 V)	22 kW	30 kW	37 kW
Voltage[2]		3 x 0 ... 380/460 V	
Effective rated current IN (at 8 kHz) [1]	45 A	61 A	72 A
Peak current		please see 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 400/480 V +10/-25%	
Power input of device	31 kVA	42 kVA	50 kVA
Asymmetry of mains voltage		± 3% max.	
Frequency		50/60 Hz ±10%	
Power loss [4]	610 W	830 W	1010 W
Braking chopper power electronics			
Minimum ohmic resistance of an externally installed braking resistor	≥ 10 Ω	≥ 10 Ω	≥ 10 Ω

1) For further power data, please see page 2-4

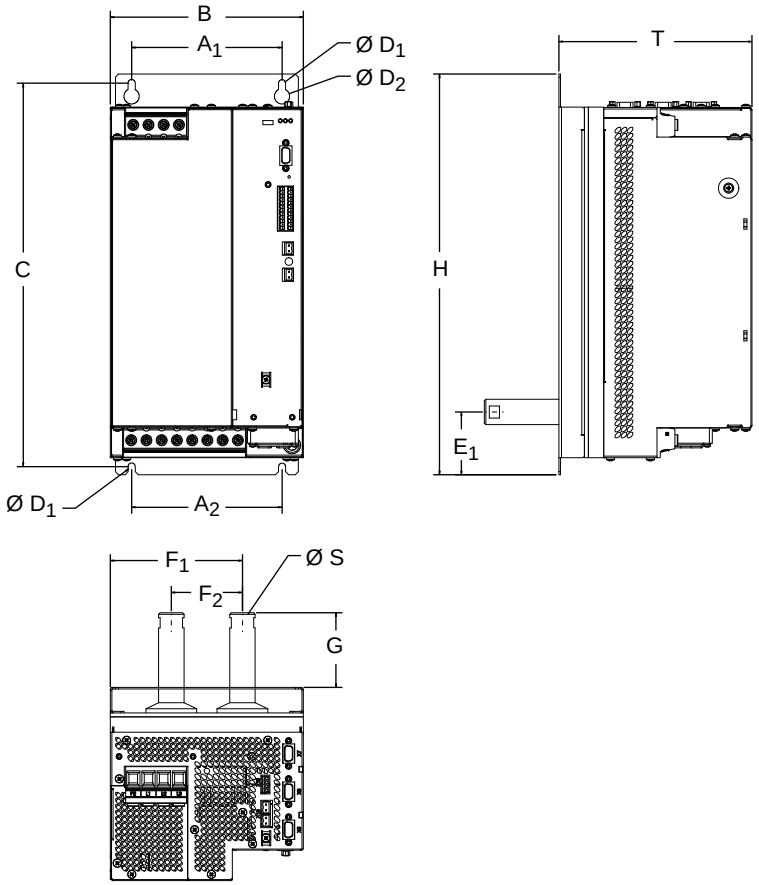
2) Please note that this device design leads to 10% voltage losses.

3) 2.0 x IN for 3 s with a pre-load of 70% of the rated current IN
2.0 x IN for 10 s with an output temperature of the cooling element < 45/40 °C with 4/8 kHz operating frequency

4) at U_{Netz} = 400 V/4 kHz

	CDE/CDB3...,L x.x
Kühlkonzept	**Liquide cooling**
Mounting type	Vertical mounting with unhindered air flow
Protection	IP20
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage) 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
D_1 ∅	∅7,0
D_2 ∅	∅15
E_1	61,75
F_1	130
F_2	70
G	73,5
S	3/8“

Dimensional drawing



Positioning controllers (BG7 / 7a) CDE3000,L 90 bis 170 A
Liquid cooling CDB3000,L47bis90kW

Type CDB-34.088,L

CDE/CDB3 □.□□□, □x.x, □□,L...□□

- Technical Data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

Tech. data	CDE/CDB34.088,L	CDE/CDB34.108,L	CDE/CDB34.140,L	CDE/CDB34.168,L
Output, motor side CDE3000				
Voltage [2]	3 x 0 ... 380/460 V			
Effective rated current (I_N at 8 kHz) [1]	110 A	143 A	170 A	185 A
Peak current	please see page 2-4			
Rotating field frequency	0...400 Hz			
Switching frequency of power stage	4, 8, 12, 16 kHz (factory setting 4 kHz)			
Output, motor side CDB3000				
Device rated power (400 V)	55 kW	75 kW	90 kW	110 kW
Voltage[2]	3 x 0 ... 380/460 V			
Effective rated current IN (at 8 kHz) [1]	110 A	143 A	170 A	185 A
Peak current	please see 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 400/480 V +10/-25%			
Power input of device	76 kVA	99 kVA	118 kVA	128 kVA
Asymmetry of mains voltage	± 3% max.			
Frequency	50/60 Hz ±10%			
Power loss [4]	1950 W	2300 W	2550 W	3000 w
Braking chopper power electronics				
Minimum ohmic resistance of an externally installed braking resistor	≥ 12 Ω	≥ 10 Ω	≥ 8,5 Ω	≥ 6,5 Ω

1) For further power data, please see page 2-4

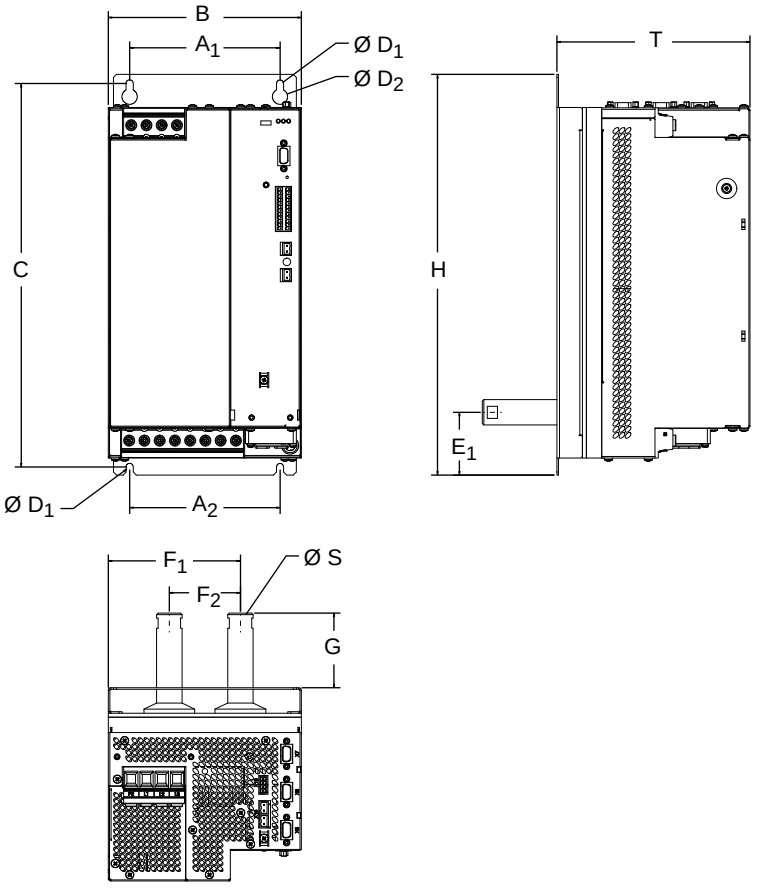
2) Please note that this device design leads to 10% voltage losses.

3) 2.0 x IN for 3 s with a pre-load of 70% of the rated current IN
2.0 x IN for 10 s with an output temperature of the cooling element < 45/40 °C with 4/8 kHz operating frequency

4) at U_{Netz} = 400 V/4 kHz

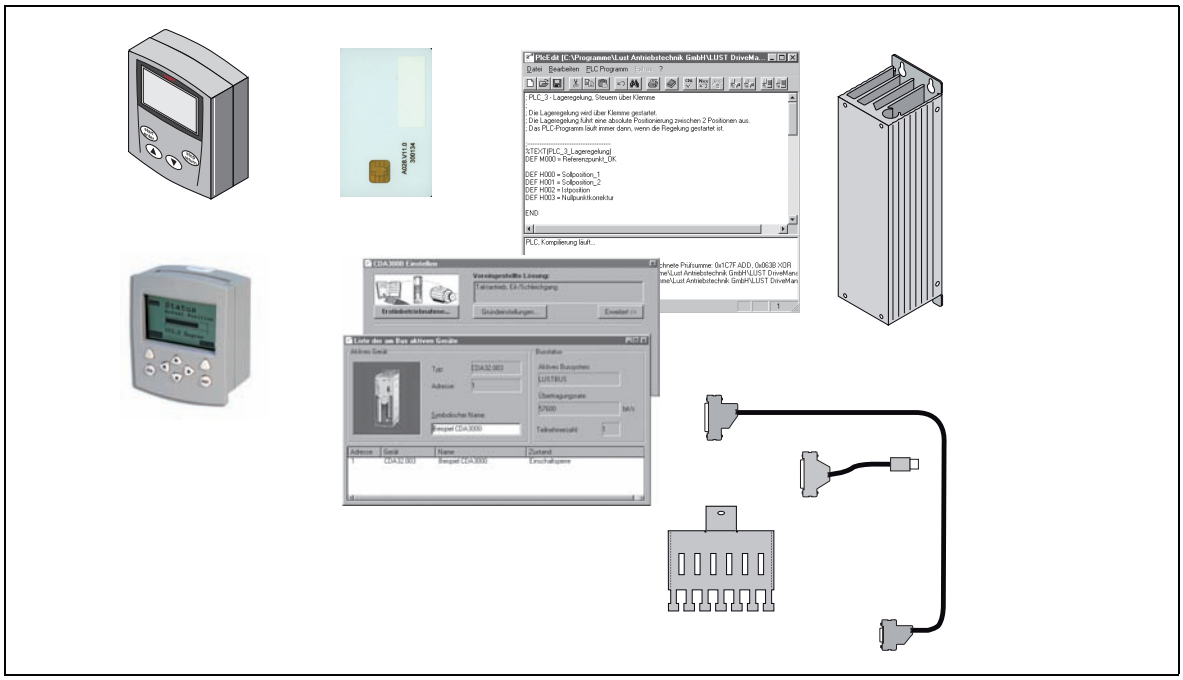
	CDE/CDB34.088,L CDE/CDB34.108,L	CDE/CDB34.140,L CDE/CDB34.168,L
Kühlkonzept	**Liquide cooling**	
Mounting type	Vertical mounting with unhindered air flow	
Protection	IP20	
Cooling air temperature	45 °C (at 4 kHz switching frequency of power stage) 40 °C (at ≥8 kHz)	
Weight	28 kg	32 kg
Dimensions	**BG7 [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
D_1 ∅	∅9,5	∅9,5
D_2 ∅	∅15	∅15
E_1	66,5	66,5
F_1	175	175
F_2	70	70
G	73,5	73,5
S	3/8“	3/8“

Dimensional drawing



Notes:

Accessories for positioning controllers



Operator modules

KP200-XL

KP300

KP X00 - XX

KEYPAD

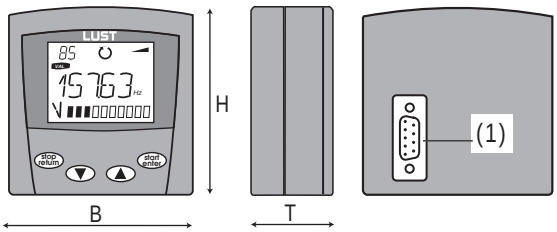
Series

Version

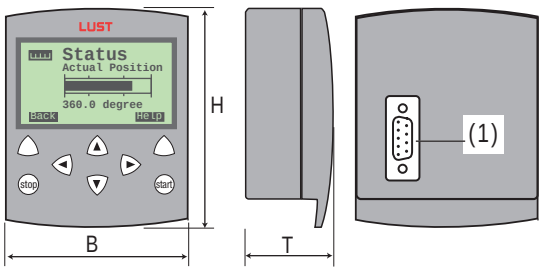
Order code

Order designation	Summary explanation
KP200-XL	KEYPAD for parameter setting, actual value display and serial commissioning of positioning controllers. The KEYPAD supports the SMARTCARD "SC-XL".
	Note: The KEYPAD is suitable for use only with the drive controllers in the c-line-Drives range. For handling, please refer to the relevant operating manual.
KP300	KEYPAD with graphical display (128 x 64 Pixel) 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".

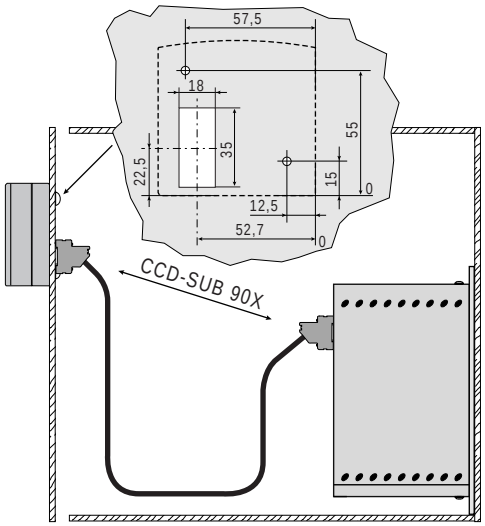
Mechanism KP200-XL	
Dimensions (see illustration)	70 x 73 x 33 mm (w x h x d)
Weight	100 g
Connection (RS232)	
Standard (1)	Can be plugged directly into the drive controller



Mechanism KP300	
Dimensions (see illustration)	70 x 84 x 37 mm (W x H x D)
Weight	120 g
Connection (RS232)	
Standard (1)	Can be plugged directly into the positioning controller



Cable connection	**Installation in switch cabinet door**
Connection between the KP200-XL/KP300 and positioning controller CDE/CDB3000 is made using cable CCD-SUB90X	Mounting in the cabinet door requires two holes for the fixing screws and a break-through for the connector. Please use only self-tapping screws for thermoplastics (e.g. EJOT PT screw, type K30 x 8 WN1412). Max. cable length is 3 m.



SMARTCARD memory card

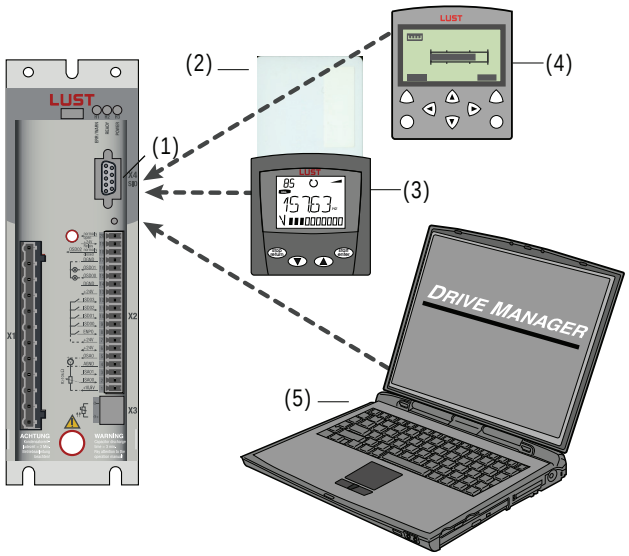
SC - XX

SMARTCARD

Memory version

Order designation	Summary explanation
SC-XL	The data set of the positioning controller can be stored and easily transferred to other positioning controllers. Suitable for KP200-XL and KP300.

System layout



Explanation

(1) X4 port for operator modules or PC port (RS232 interface)
(2) Memory card SC-XL
(3) Operator module KP200-XL
(4) Operator module KP300
(5) 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: • Editor for creating a PLC sequential programme • Programme handling – Loads/stores/prints/creates programmes – Loads/stores a programme from/to a DRIVEMANAGER data record – Loads/stores a programme from/to a connected drive device • Online help with for PLCEditor and for the command syntax, with examples
Hardware and software requirements	• Microsoft Windows® 95/98/ME or Windows® NT, 2000, XP • At least 32 MB RAM (64 MB recommended) • CD-ROM drive (recommended min. read x 24)
Supply package	• 1 CD-ROM with PLC programme editor
Languages	• On installation you can choose between German or English.

Order designation	Licences
PLCEditor	- Contains the full functionality for programming the PLC. The software license permits simultaneous use at any number of workstations.

PC user software

DRIVEMANAGER 3.X

PC user software

Shipping status of software

DRIVEMANAGER 3.X

Order code

3

Tech. data	DRIVEMANAGER 3.X
Software features	The "DRIVEMANAGER" PC user software provides the following functions: - 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	- Microsoft Windows® 95/98/ME or Windows® NT, 2000, XP - At least 32 MB RAM (64 MB recommended) - CD-ROM drive (recommended min. read x 24)
Supply package	- 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	- On installation you can choose between German or English.

Order designation	Licences
DRIVEMANAGER 3.X TEST	- 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	- Contains the full functionality for parameter-setting, control and monitoring. The runtime is unlimited. The software license permits simultaneous use on any number of workstations.

Connecting cable

CCD-SUB 90x

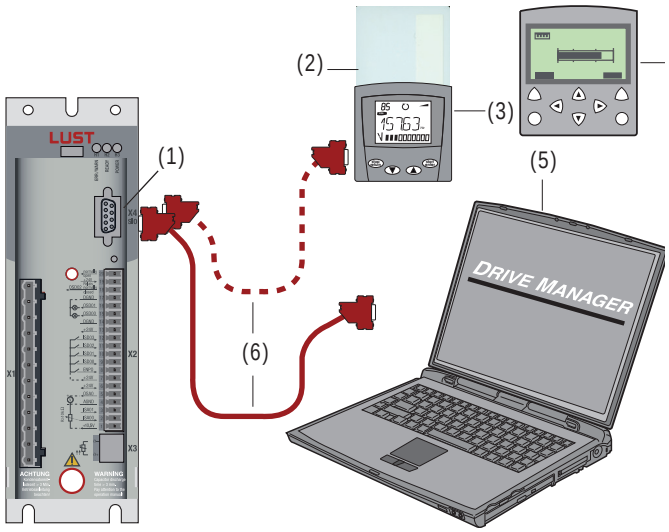
CC D-SUB 9 0x

- **Connecting Cable**
- **Cable type D-SUB**
- **Cable length in metres**

Connecting cable

Order designation	Technical data
CCD-SUB 901	Cable for link between drive controller and KeyPad or drive controller and PC with DriveManager, length 1 m
CCD-SUB 902	Cable for link between drive controller and KeyPad or drive controller and PC with DriveManager, length 2 m
CCD-SUB 903	Cable for link between drive controller and KeyPad or drive controller and PC with DriveManager, length 3 m

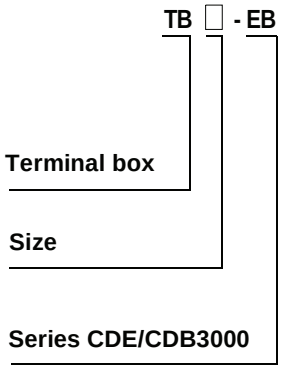
System layout



Explanation

(1) X4 port for operator module or PC RS232 interface
(2) SmartCard SC-XL memory card
(3) Operator module KP200-XL
(4) Operator module KP300
(5) PC with DriveManager user software
(6) Connecting cable CCD-SUB90X, x.x

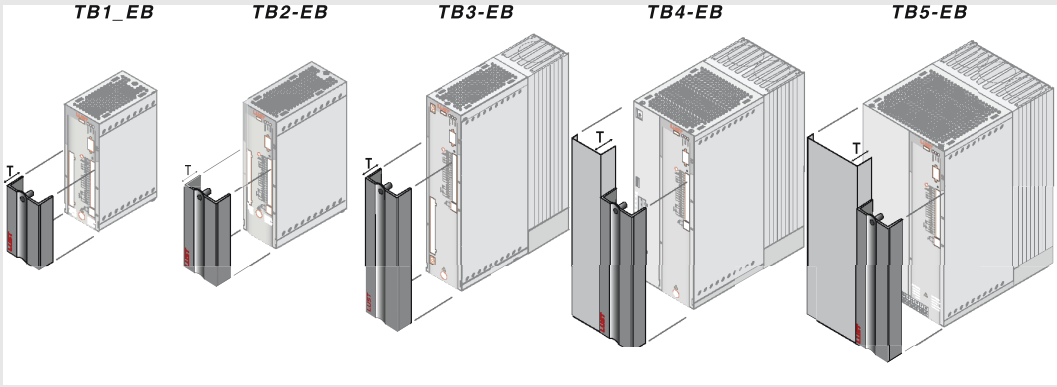
Terminal cover



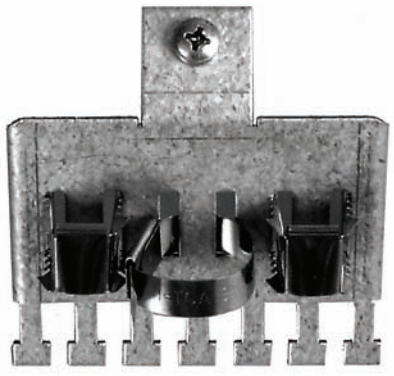
TB3

Order code

Order ref.	TB1-EB	TB2-EB	TB3-EB	TB4-EB	TB5-EB
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
Power output of positioning controllers	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	11.0 kW 15.0 kW
D (depth)	32.5 mm	32.5 mm	32.5 mm	32.5 mm	32.5 mm
Diagram					



Screen connection



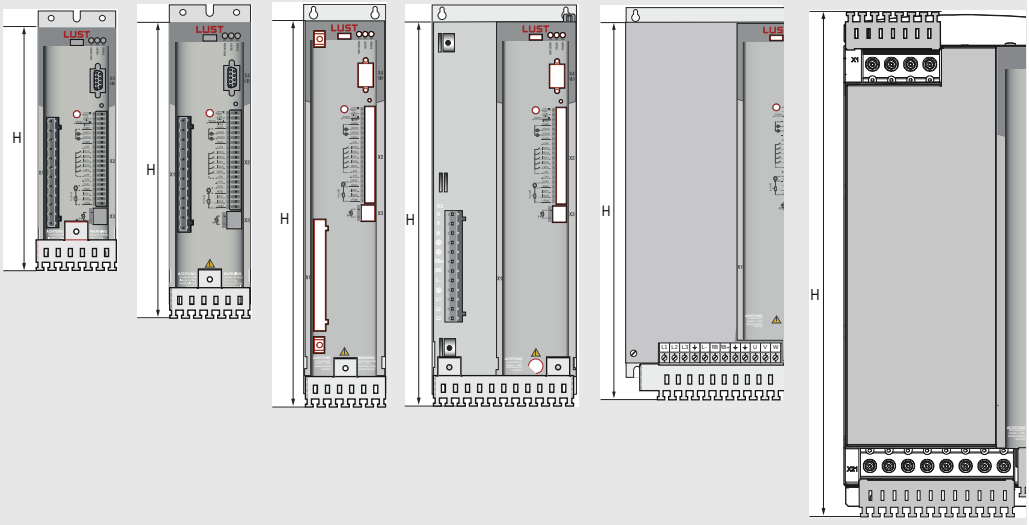
ST02 (incl. metal clips. metal cable band and screw)

Order code

ST □□

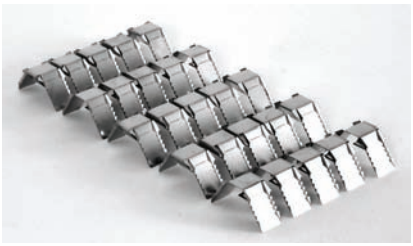
Screen Terminator

Size

Tech. data	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
Power output 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						

Note: For positioning controller sizes 6 and 7 (cable cross-sections > 32 mm²) we recommend connecting the screens of the motor/mains lead directly to a screen rail in the cabinet.

Metal clips



SMC50

SMC □□

Shield Metal Clip

360°contacts

Quantity of

Packing unit

Order code

Order designation	Packing unit	Suitable for EMC shielding	Usable for cable screen diameter	Material
SMC50	Pack of 50	ST xx	< 12 mm²	Spring steel

Metal cable band

SMB50

SMB □□

Shield Metal Band

360°Contacts

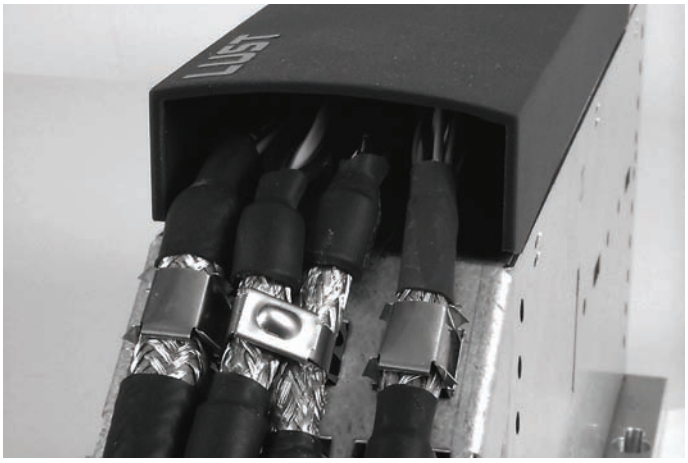
Quantity of

Packing unit

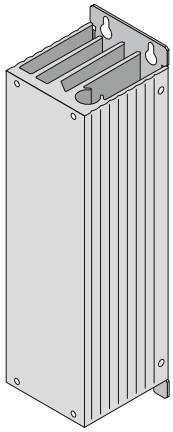
Order code

Order designation	Packing unit	Suitable for EM screening	Usable for cable screen diameter	Material
SMB50	Pack of 50	ST xx	> 12mm²	Stainless steel

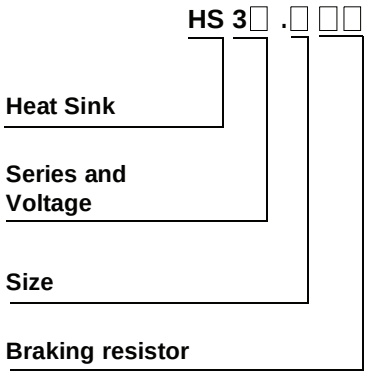
System layout



Heat sink/braking resistor for BG1



HS3X.xxx

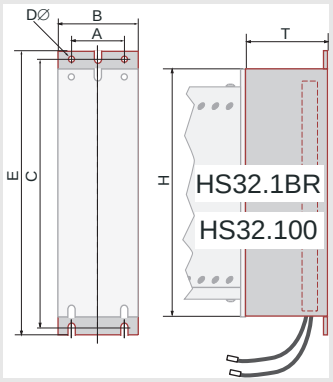


Order code

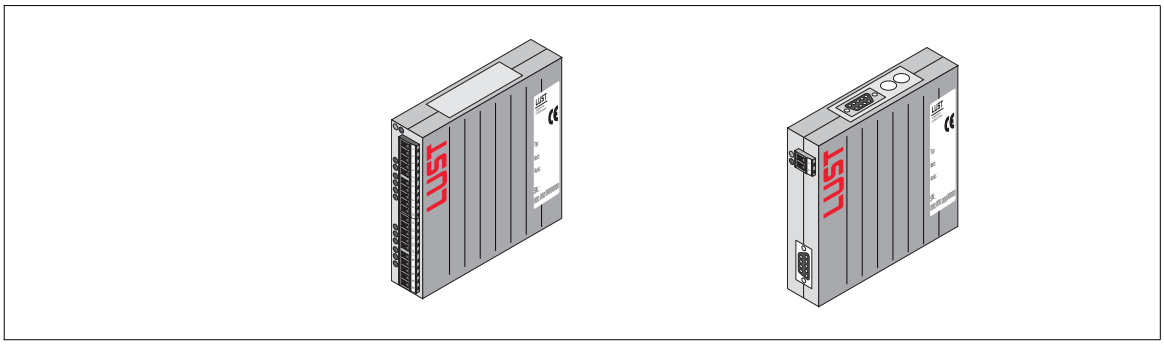
Tech. data	HS32.1BR	HS32.100
Continuous braking power when mounted on positioning controller	CDE/CDB32.004/25 W	-
Braking resistor	162 Ω	-
Peak braking power	0.9 kW	-
Heat sink for end-to-end mounting of positioning controllers	-	CDE/CDB32.003 CDE/CDB32.004

Order ref.	Dimensions	B (width) [mm]	H (height) [mm]	D (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 drawings



User and communication modules



Contents	Type	Page
User modules	UM-8I4O	4 - 2
Communication modules	CM-DPV1	4 - 3

User module (I/O expansion)

UM-8I4O

UM - □□□□

User module

Characteristic

8 I 4 O (example)

Terminal expansion by 4 outputs

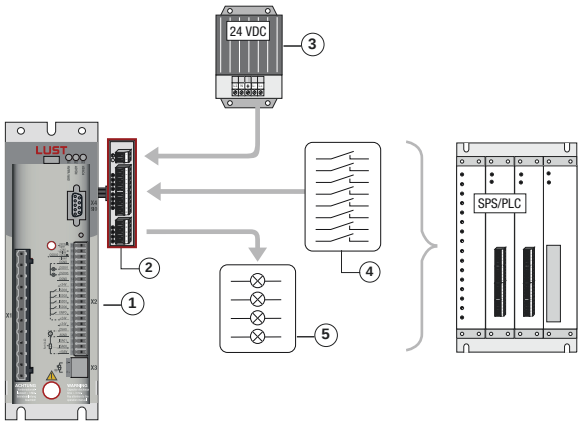
Terminal expansion by 8 inputs

Order code

Order designation	Summary explanation
UM-8I4O	Terminal expansion by eight inputs and four outputs, function of inputs/outputs programmable

Technical data			UM-8I4O
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
Dimensions (W x H x D)			28 x 90 x 90 [mm]

System layout, UM-8I4O



Explanation

(1) Positioning controller CDE/CDB3000
(2) User module UM-8I4O
(3) External power supply 24 VDC
(4) Eight control input (programmable)
(5) Four control outputs (programmable)

Communication module (PROFIBUS)

CM-DPV1

CM - □□□□

Communication Modules

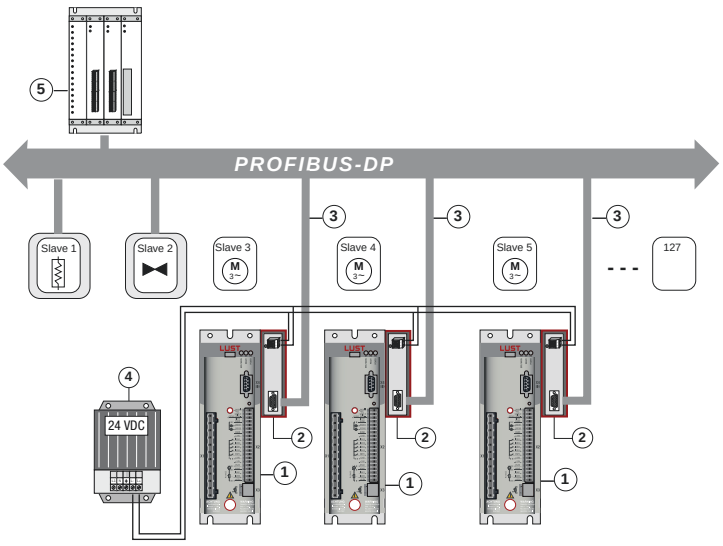
Bus and/or protocol

Order code

Order designation	Summary explanation
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]

System layout, PROFIBUS-DP

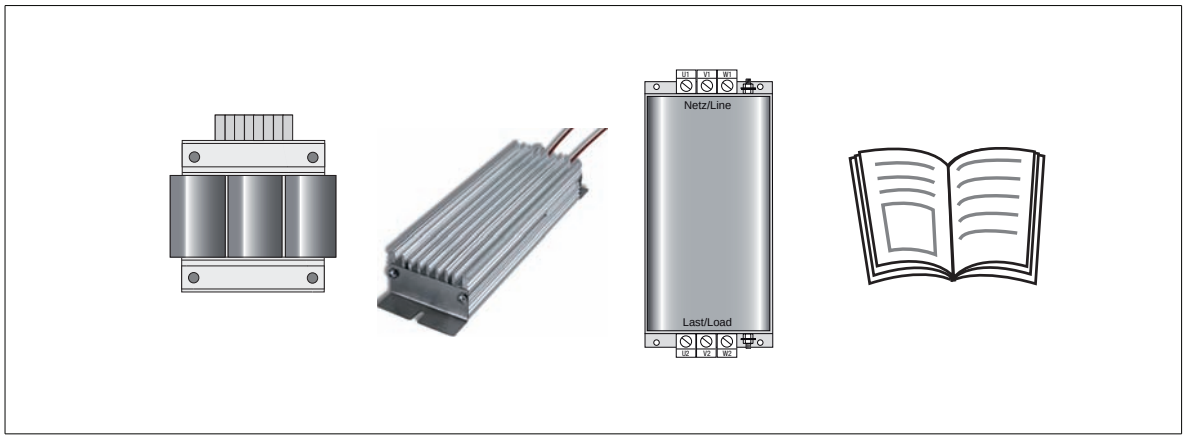


Explanation

(1) Positioning controller CDE/CDB3000
(2) Communication module CM-DPV1
(3) PROFIBUS-DP system cable
(4) Power supply 24 VDC
(5) DP-Master

max. 127 stations

Supplementary components



Line chokes

LR34.10

LR - 3 □.□□□

Line choke

Series and Voltage

Rated current

Order code

Ambient conditions	LR 32. xxx	LR 34. xxx
Rated voltage	1 x 230 V, -20 % +15 %, 50/60 Hz[1)]	3 x 460 V, -25 % +10 %, 50/60 Hz[1)]
Overload factor	1.8 x I_N for 40 s	1.8 x I_N for 40 s up to 32 A rated current 1.5 x I_N for 60 s up to 45 A rated current
Ambient temperature	-25 °C to +45 °C, with power reduction to 60 °C (1.3 %/ °C)	
Mounting height	1000 m, up to 4000 m with power reduction (12.5 %/1000 m)	
Relative air humidity	15 ... 95 %, condensation not permitted	
Storage temperature	-25 °C to +70 °C	
Protection	IP00, terminals VBG4	
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 170 A
Permissible contamination	P2 to EN 61558-1	P2 to EN 61558-1
Thermal configuration	$I_{eff} < I_N$	
UL Recognition	Version 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 %
2) The line choke for the units BG6 (LR34.44, LR34.58 and LR34.70) are laid out for 2 % u_k at 400 V = 4.6 V

Single-phase line chokes

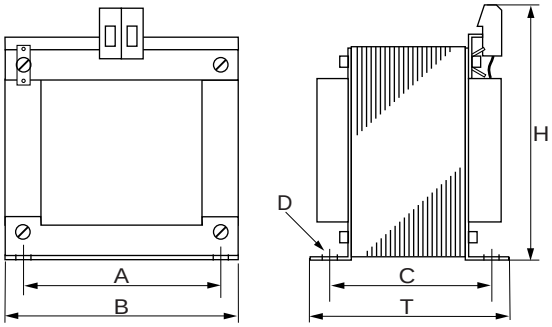
Suitable for positioning controllers	Tech. data	Rated current [A]	Power loss tot. [W]	Inductance [mH]	Weight [kg]	Connection [mm²]
CDE/CDB32.003 CDE/CDB32.004	LR32.8	8	10	3.66	0.8	4
CDE/CDB32.006 CDE/CDB32.008	LR32.14-UR	14	16	2.1	1.5	4
CDE/CDB32.004	LR32.5	4.5	11	9.76	0.7	4

1) U_k = 6 %, at 230 V = 13.8 V (to comply with EN61000-3-2)

Single-phase line chokes

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

Dimensional drawing:



Three-phase line chokes

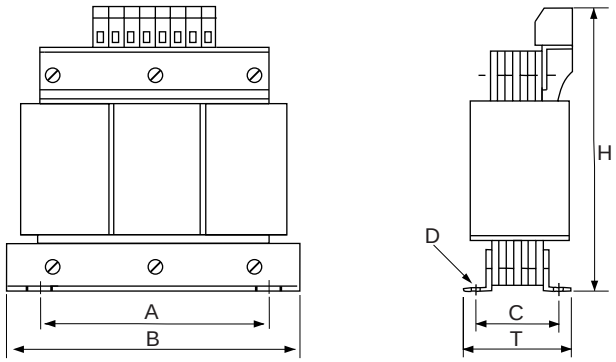
Suitable for positioning controllers	Tech. data	Rated current [A]	Total power loss [W]	Inductance [mH]	Weight [kg]	Connection [mm²]
CDE/CDB34.003	LR34.4-UR	4,2	20	7	2,5	4
CDE/CDB34.004 CDE/CDB34.006	LR34.6-UR	6	25	4,88	2,5	4
CDE/CDB34.008	LR34.8-UR	8	25	3,66	2,5	4
CDE/CDB34.010	LR34.10-UR	10	35	2,93	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

1) Short-circuit voltage 2 % u_K at 400 V = 4.6 V

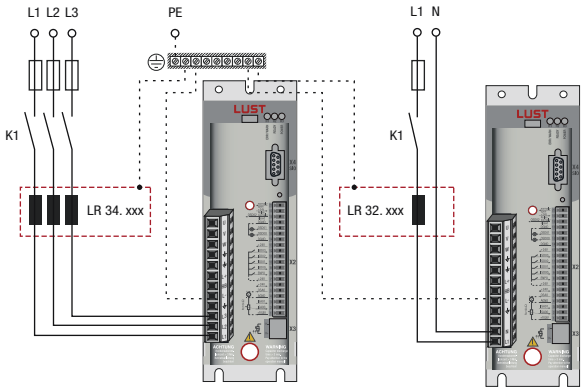
Three-phase line chokes

Dimensions [mm]	LR34.4	LR34.6	LR34.8	LR34.10	LR34.14	LR34.17	LR34.24	LR34.32	LR34.44	LR34.58	LR34.70
W (width)	125	125	125	125	155	155	155	190	155	190	190
H (height)	120	140	140	140	160	160	160	195	170	200	240
D (depth)	75	75	75	75	80	80	95	85	120	120	110
A	100	100	100	100	130	130	130	170	130	170	170
C	55	55	55	57	57	57	74	57	72	68	78
D Ø	5	5	5	5	8	8	8	8	8	8	8

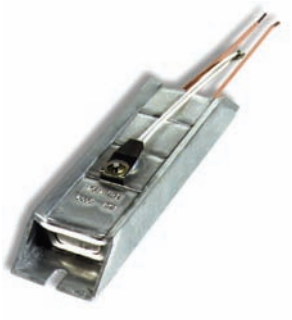
Dimensional drawing



System layout



Braking resistor



BR -□□□.□□,□□□

Braking res.

Ωvalue

Power in [W]
01 = 100 W
10 = 1 kW

Termination

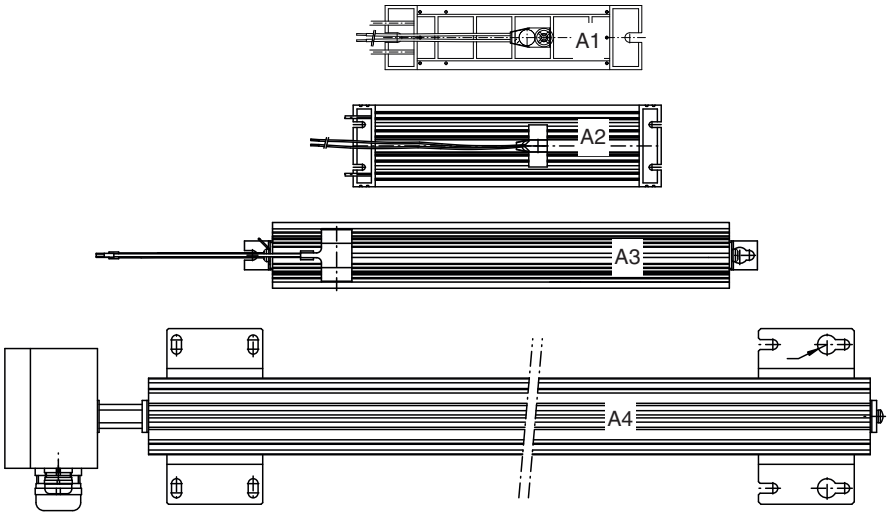
1 = with touch protection
0 = without touch protection

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 bimetal protector (switching capacity 0.5 A/ 230 V)			
Acceptance tests	CE-konform; UL-Recognition			
Connection	1 m long PTFE - insulated litz wire			Terminal box with PG gland

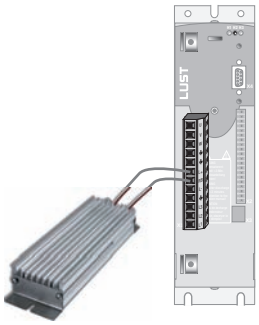
Diagrams



Braking resistor

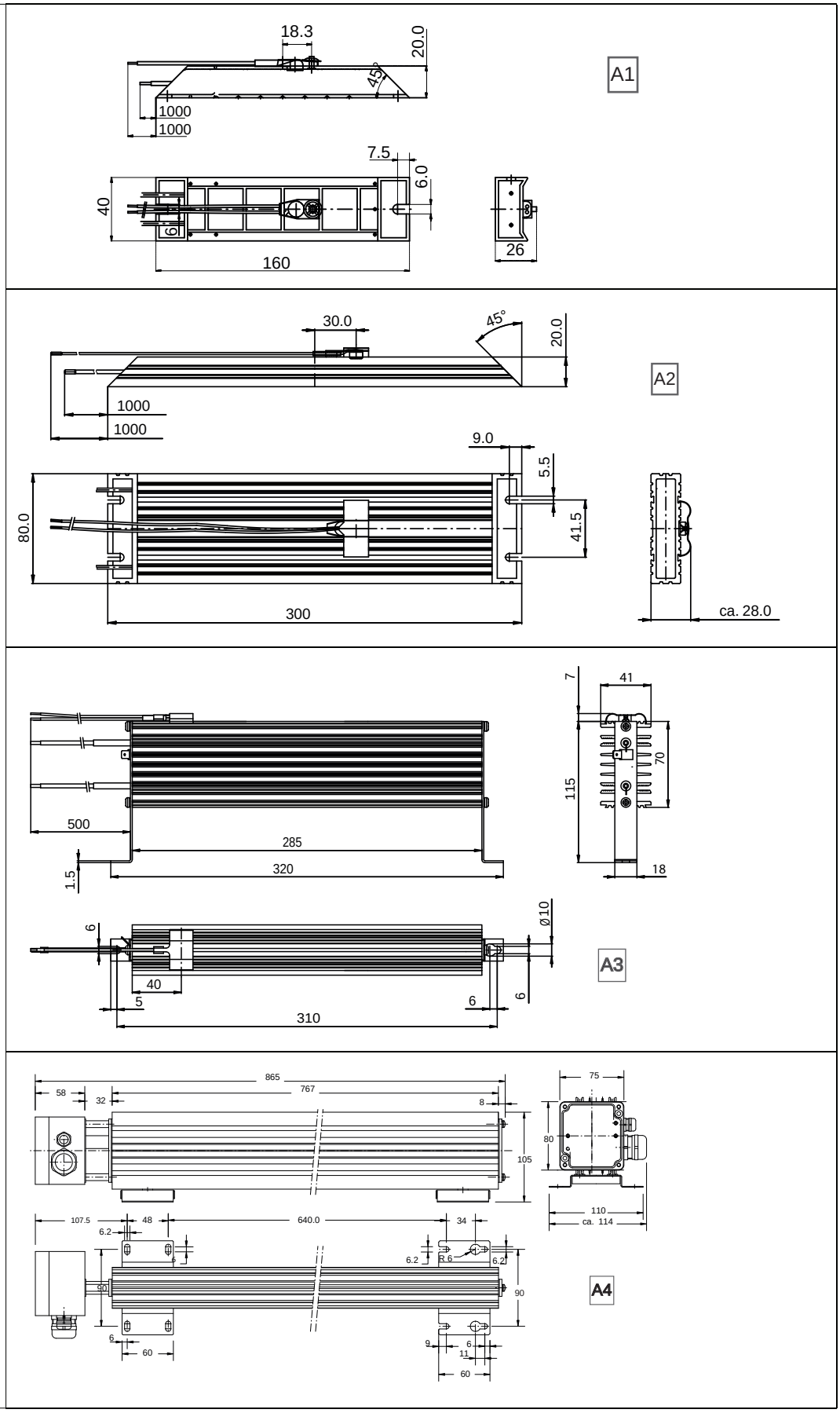
Tech. data	Cont. braking power [W]	Resistance [Ω±10 %]	Peak braking power [W]		Protection
			390 VDC[1)]	750 VDC[2)]	
BR-200.01, 540,UR	35	90	2800	IP54	A1
BR-200.02, 540,UR	150	90	2800	IP54	A2
BR-200.03, 540,UR	300	90	2800	IP54	A3
BR-090.01, 540,UR	35	90	6250	IP54	A1
BR-090.02, 540,UR	150	90	6250	IP54	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-XXX.10, 540,UR
B (Width)	40	80	42	114
H (Height)	160	300	320	865
T (Depth))	26	28	122	105
Abbildung	A1	A2	A3	A4

Diagrams


18.3
20.0
45°
1000
1000
A1
7.5
6.0
40
6
160
26
30.0
45°
20.0
1000
1000
A2
9.0
5.5
41.5
80.0
300
ca. 28.0
41
7
70
115
500
285
320
1.5
18
6
Ø10
40
5
6
6
310
A3
865
767
58
32
8
105
75
80
110
ca. 114
107.5
48
640.0
34
6.2
6.2
R.6
6.2
90
90
6
60
9
6
11
60
A4

Mains filters

EMC □□□.□

- Electro Magnetic Compatibility
- Rated current
- Version

EMC180.1-UR

Order code

Ambient conditions	EMCxx.x-UR
Rated voltage	3 x 480 V, max. +10 %, 50/60 Hz
Ambient temperature	typically -25 °C to +44 °C, up to 60 °C with power reduction (1.3 %/ °C)
Mounting height	1000 m, up to 4000 m with power reduction (6 %/1000 m)
Relative air humidity	15 ... 85 %, condensation not permitted
Storage/transportation temperature	-25 °C to +70 °C / -40 °C to +85 °C
Protection	IP00
Permissible contamination	P2 to EN 61558-1
UL Recognition	CE-konform, 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

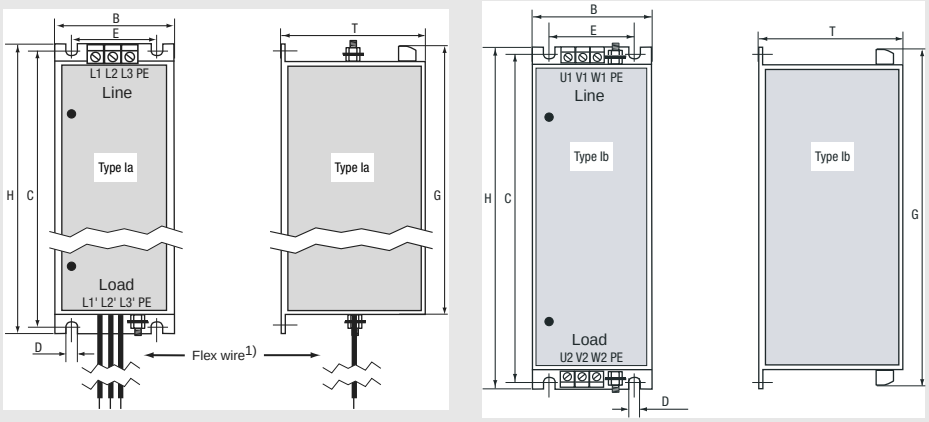
Suitable for positioning controllers	Technical data	Rated current [A]	Power loss tot. [W]	Leakage current [mA]	Weight [kg]	Terminals [mm²]
CDE/CDB34.008 CDE/CDB34.010	EMC 10.0-UR	10	13	< 148	1,7	0,2 ... 4, PE M5
CDE/CDB34.014 CDE/CDB34.017	EMC 17.0-UR	17	21	< 146	1,8	0,2 ... 4, PE M5
CDE/CDB34.024 CDE/CDB34.032	EMC 35.0-UR	35	27	< 148	2,5	0,2 ... 6, PE M5
CDE/CDB34.044	EMC 50.0-UR	50	31	< 129	3,4	0,5 ... 16, PE M5
CDE/CDB34.058	EMC 63.1-UR	63	53	<127	6,0	0,5 ... 16, PE M6
CDE/CDB34.070 CDE/CDB34.088	EMC100.1-UR	100	45	5,0	6,0	16 ... 50, PE M8
CDE/CDB34.108 CDE/CDB34.140	EMC150.1-UR	150	55	7,0	6,8	16 ... 50, PE M8
CDE/CDB34.168	EMC180.1-UR	180	15	7,2	7,0	busbar/drill hole 3x24/ 11, PE M10

Three-phase mains filters

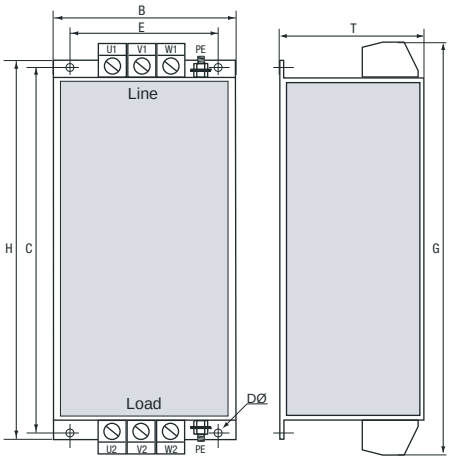
Dimensions [mm]	EMC 10.0/17.0/35.0	EMC 50.0	EMC 63.1	EMC 100.1	EMC 150.1
Dimensional drawings	Typ Ia	Typ Ib	Typ II		Typ III
H (height)	270	290	280	290	320
W (width)	55	90	62	75	90
D (depth)	100	100	180	200	220
G	260	325	305	336	380
C	260	275	270	270	300
E	36	76	40	45	60
D Ø	4,5	4,5	7	7	7

Dimensional drawing: Type Ia +Ib

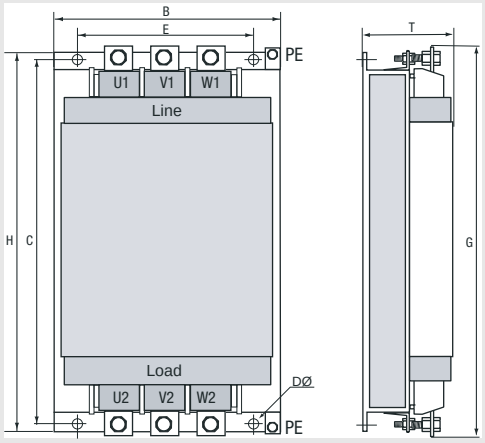
1) Flex wire for type Ia:
EMC10.0: Flex wire AWG 14/2.08 sqmm, length 400 mm
EMC17.0: Flex wire AWG 12/3.31 sqmm, length 400 mm
EMC35.0: Flex wire AWG 10/5.26 sqmm, length 400 mm



Dimensional drawing: Type II



Dimensional drawing: Type III



Paper-based user information (selection)

0XXX . XXB . X-xx

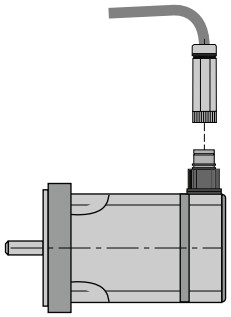
Doc ID. No.

Status

Please refer to the following tables for complete ordering data.

User information	Use/contents	Order no.	Language
Operating Manual CDE/CDB3000	Presents the mechanical and electrical installation of the CDE/CDB3000 positioning controller. Guide to quick and easy initial commissioning.	1001.00B.x-xx	German/English/ French/Italian
Application Manual CDE/CDB3000	Describes adaptation of the drive system to the application (software-based).	1001.02B.x-xx 1001.22B.x-xx	German English
Brochure CDE/CDB3000	Die Positionierkünstler in der Economy Class	0920-0033-xx	German
Brochure - CDE/CDB3000	The Positioning Experts in the Economy Class	0920-2033-xx	English
Engineering Guide c-line Drives	Intended for users looking for background information relating to the engineering of drive system projects.	0840.05B.x-xx	German
		0840.25B.x-xx	English
User Manual	CANopen-Kommunikation	1001.06B.x-xx	German
User Manual	CANopen Communication	1001.26B.x-xx	English
User Manual	CM-DPV1 Kommunikationsmodul für PROFIBUS-DP	0916.00B.x-xx	German
User Manual	CM-DPV1 Communication module for PROFIBUS-DP	0916.20B.x-xx	English

Overview of 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	
		LST-158	
	LSx motors - for functional extra-low voltage 24/48 V	LST-037	6 - 4
		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 to 100 % improvement in dynamics and significantly reduced space requirements combined with smooth running.

Overview of technical data

Technical data Motor	Standstill torque M_0 [Nm]	Nominal torque M_N [Nm]	Rated current at 560 V I_N [A]	Rated current at 320 V I_N [A]	Rated speed n_N [rp^m]
LSH-050-1 [1)]	0.25	0.23	-	0.66	4500
LSH-050-2 [1)]	0.5	0.45	-	1.11	4500
LSH-050-3 [1)]	0.7	0.65	-	1.49	4500
LSH-074-1 [2)]	0.8	0.7	1.0	1.1	3000
LSH-074-2 [2)]	1.6	1.3	1.2	2.0	3000
LSH-074-3 [2)]	2.7	2.2	1.68	2.9	3000
LSH-097-1 [2)]	3.7	3.0	2.6	4.7	3000
LSH-097-2 [2)]	5.7	4.3	3.4	6.6	3000
LSH-097-3 [2)]	7.8	5.5	4.3	7.5	3000
LSH-127-1 [3)]	10.5	7.8	7.3	-	3000
LSH-127-2 [3)]	13.5	10.1	9.0	-	3000
LSH-127-3 [3)]	17.0	13.5	11.6	-	3000
LSH-127-4 [3)]	25	20.0	14.2	-	3000

1) DC link voltage 320 V
2) DC link voltage 320 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).

LST motor - the versatile one

Equipped with conventional winding technology, the LST motor combines all the benefits of a 6-pole synchronous servomotor.

- Highly suitable for speeds up to 9000 rpm, special windings possible on request.
- High overload capacity even at standstill based on efficient heat distribution in the stator package.
- Increased rotor moment of inertia for moment adjustment.

Overview of technical data

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 [rpm]
LST-037-1	0.10	0.09	-	0.56	6000
LST-037-2	0.20	0.18	-	0.92	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-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	3.0	2.5	1.82	3.0	3000
LST-097-1	2.60	2.30	1.85	3.0	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-127-1	6.60	5.70	4.0	-	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	14.0	10.0	-	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	13.1	-	3000
LST-158-4	29.0	24.0	14.7	-	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 CDF3000 servocontroller, they provide the optimum combination for this voltage range.

Overview of technical data

Technical data	Standstill torque	Nominal torque	Rated current at 24 V	Rated current at 48 V	Rated speed n_N [rpm]	
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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Cataloque - CDE/CDB3000
Id.-Nr.: 1001.24B.5-00 ● Stand 11/2008