

CDE/CDB3000

Order Catalogue

Positioning and Drive Solutions

from 375 W to 110 kW (CDB3000)
from 2 A to 210 A (CDE3000)



 C-line Positioning System

LTi | DRIVES

Order Catalogue: Positioning Systems CDE/CDB3000

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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
- Inverter systems 0.375 kW to 110 kW
- Servo system
 - for asynchronous and
 - synchronous motors
 - with torque motors
 - with linear motors

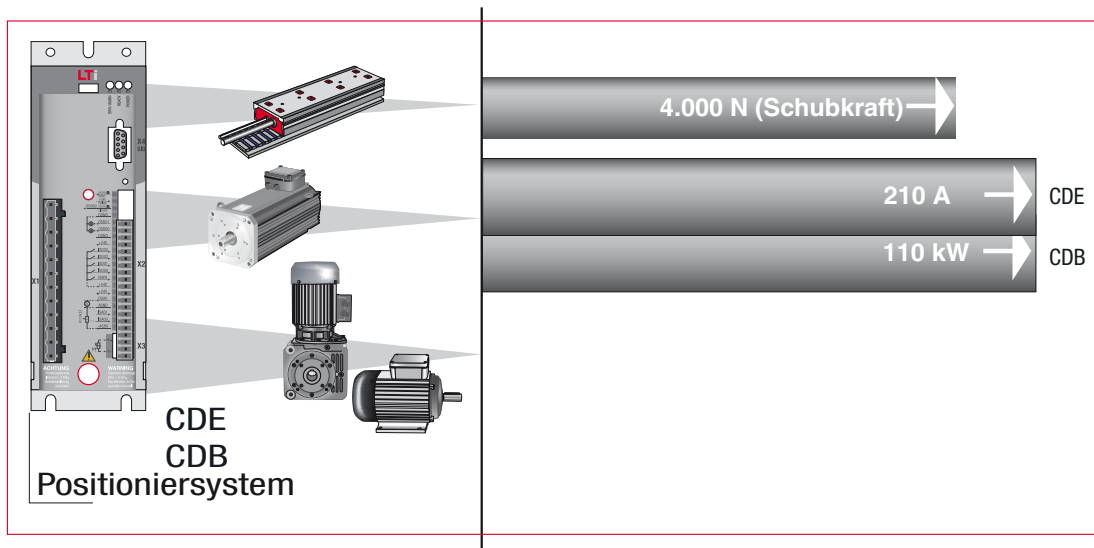
Servocontrollers and inverters based on same concept

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 performance
- User-friendly operation with the PC tool DRIVEMANAGER 3
- Ease of series commissioning with KEYPAD KP300 and SMARTCARD
- Modular networking concept
- Comprehensive range of accessories and complementary components

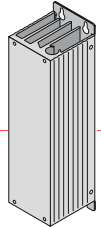


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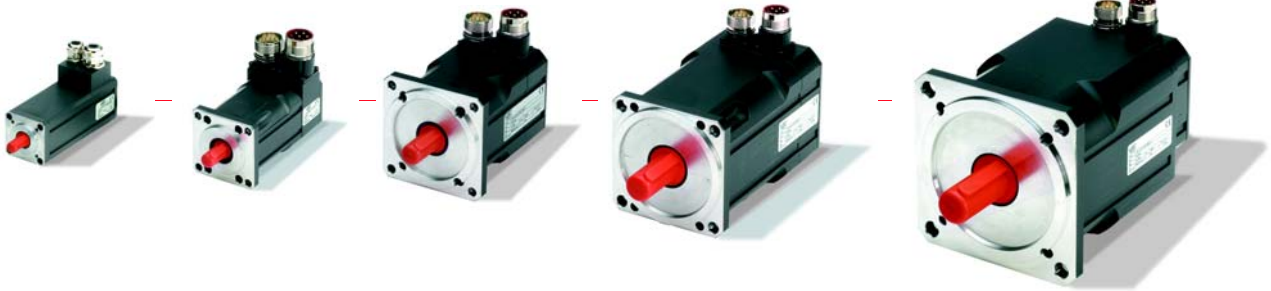
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(for details see Servomotors order catalogue)
Article no.: 0814.05B.x

Features

Positioning controllers for 230 V systems:

Size [BG]	Positioning controllers	Rec. 4-pole standard motor [kW]	Device connected load [kVA]	Rated current I _N [A]	Dimensions [mm] width x height x depth
BG1	CDE/CDB32.003.C	0.375	1.0	2.4	70 x 220/193 x 120
BG1	CDE/CDB32.004.C	0.75	1.6	4.0 A	70 x 220/193 x 120
BG2	CDB32.008.C	1.5	2.8	7.1 A	70 x 245/230 x 145
BG2	CDE/CDB32.008.W	1.5	2.8	7.1 A	70 x 245/230 x 145

Mains voltage 1 x 230 V -20 % +15 %
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 [A]	Dimensions [mm] width x height x depth
BG2	CDE/CDB34.003,C ¹⁾	0.75	1.5	2.2	70 x 218 x 177.5
BG2	CDE/CDB34.005,W ¹⁾	1.5	2.8	4.1	70 x 245 x 177.5
BG2	CDE/CDB34.006,W ¹⁾	2.2	3.9	5.7	70 x 245 x 177.5
BG3	CDE/CDB34.008,W ¹⁾	3.0	5.4	7.8	70 x 303 x 250.5
BG3	CDE/CDB34.010,W ¹⁾	4.0	6.9	10	70 x 303 x 250.5
BG4	CDE/CDB34.014,W ¹⁾	5.5	9.7	14	120 x 303 x 250.5
BG4	CDE/CDB34.017,W ¹⁾	7.5	11.8	17	120 x 303 x 250.5
BG5	CDE/CDB34.024,W ¹⁾	11	16.6	24	170 x 303 x 250.5
BG5	CDE/CDB34.032,W ¹⁾	15	22.2	32	170 x 303 x 250.5
BG6	CDE/CDB34.044,W ²⁾	22	31	45	190 x 345 x 230
BG6	CDE/CDB34.058,W ²⁾	30	42	60	190 x 345 x 230
BG6	CDE/CDB34.070,W ²⁾	37	50	72	190 x 345 x 230
BG7	CDE/CDB34.088,W ²⁾	45	62	90	280 x 540 x 267.5
BG7	CDE/CDB34.108,W ²⁾	55	76	110	280 x 540 x 267.5
BG7a	CDE/CDB34.140,W ²⁾	75	99	143	280 x 540 x 321
BG7a	CDE/CDB34.168,W ²⁾	90	118	170	280 x 540 x 321
BG6	CDE/CDB34.044,L ²⁾	22	31	45	190 x 394.75 x 190 ³⁾
BG6	CDE/CDB34.058,L ²⁾	30	42	60	190 x 394.75 x 190 ³⁾
BG6	CDE/CDB34.070,L ²⁾	37	50	72	190 x 394.75 x 190 ³⁾
BG7	CDE/CDB34.088,L ²⁾	55	76	110	280 x 600 x 201 ³⁾
BG7	CDE/CDB34.108,L ²⁾	75	99	143	280 x 600 x 201 ³⁾
BG7a	CDE/CDB34.140,L ²⁾	90	118	170	280 x 600 x 281 ³⁾
BG7a	CDE/CDB34.168,L ²⁾	110	128	210	280 x 600 x 281 ³⁾

1) Mains voltage 3 x 400/460 V -15 % +10 %
2) Mains voltage 3 x 400/480 V -25 % +10 %
3) Without pipe socket for water connection
Rotating field frequency 0 ... 400 Hz
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 kHz at power stage switching frequency 12, 16 kHz with derating

Acceptance tests/Ambient conditions

CE mark

The positioning controllers¹⁾ conform to the requirements of the Low Voltage Directive 2006/95/EC and the product standard EN 61800-3 (EMC).

The positioning controllers¹⁾ 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 controllers¹⁾ 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.

1) Also applies to user and communication modules

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/EC:

Public low voltage system: Residential 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 is also available. For more details refer to the "Supplementary components" section.

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 ²⁾ 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 ²⁾ at relative humidity of 5 ... 85 % without condensation
	in transit as per EN 61800-2, IEC 60721-3-2 class 2K3	-25 ... +55 °C ³⁾ at relative humidity of 5 ... 95 %
Device	-25 ... +70 °C ⁴⁾ Relative humidity 95 % at max. +40 C	
Protection	IP20 (terminals IP00)	
Cooling method	Cold Plate IP20 Push-through heat sink IP54	Convection IP20
Touch protection	BGV 3	
Mounting height	up to 1000 m above MSL, above 1000 m above MSL with power reduction, max. 2000 m above MSL	

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

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

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

Drop height of packed device max. 0.25 m

Vibration limit of system⁵⁾, 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

2) 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.

3) 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.

4) 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%.

5) The devices are only designed for stationary use.

Cooling methods

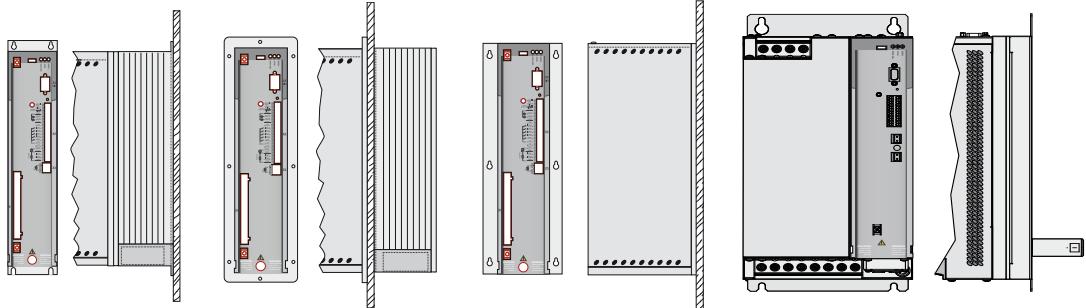
The positioning controllers offer two different mounting and cooling methods (example CDB3000, size 3).

Wall-mounted

Push-through heat sink

Cold plate

Liquid-cooled



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

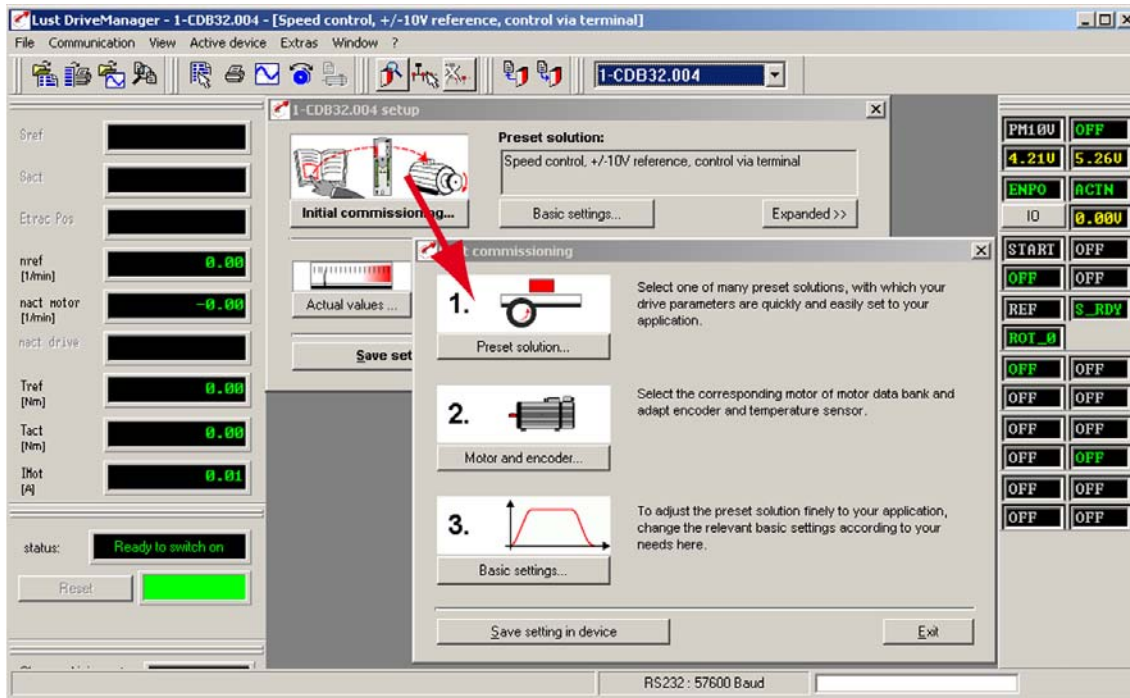
1) Equivalent to cold plate type with accessory heat sink HS3X.xxx

2) Protection IP54

Initial commissioning made easy

The DRIVEMANAGER 3 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. 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 DSP402

Expansion slot
e.g. PROFIBUS-DP

Safe Standstill
with relay output

Inputs:
8 digital, 2 analog / 10 bit,

Outputs:
2 digital, 1 relay

Power output 2 A

CAN address

PTC / Klixon / KTY

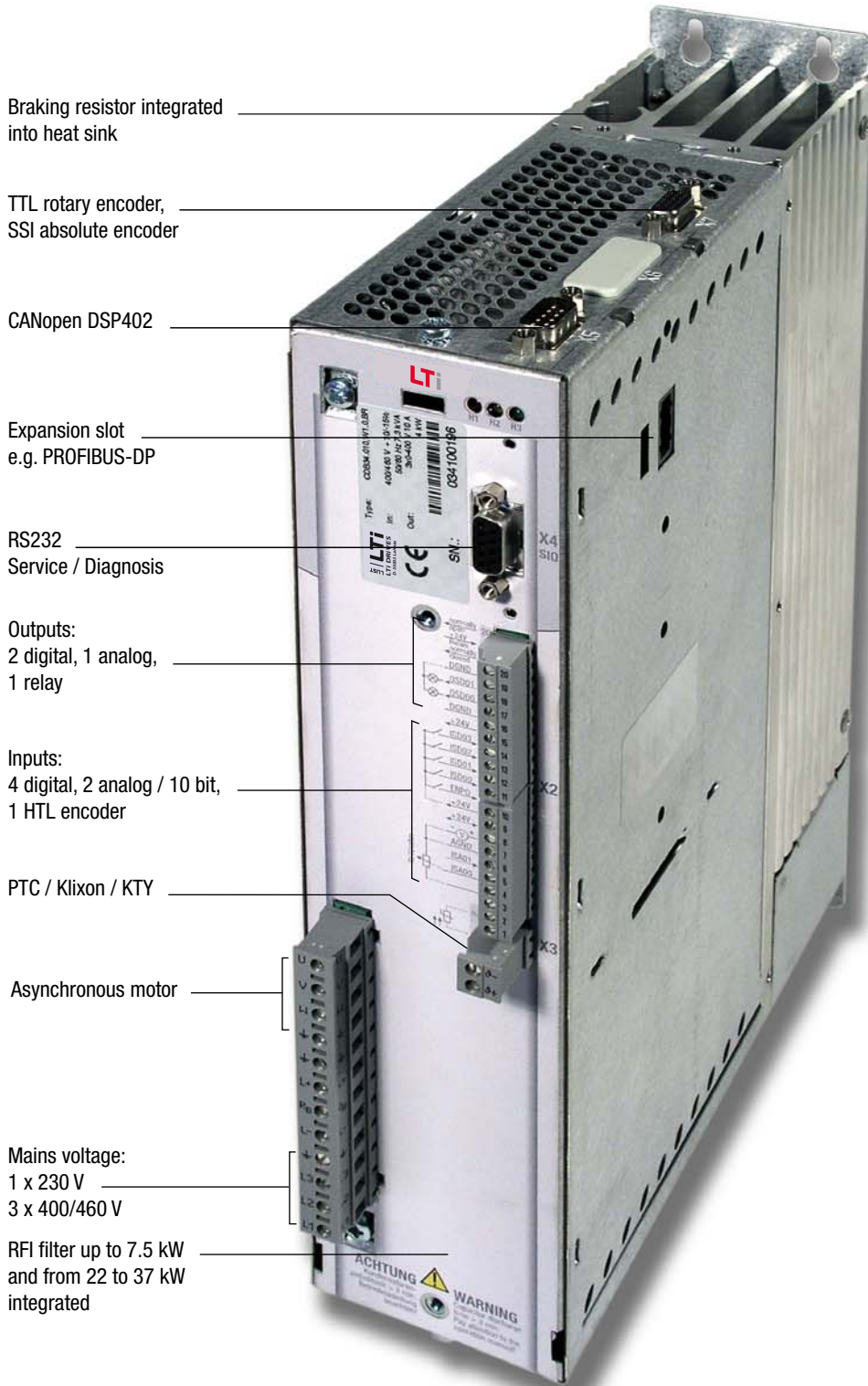
Synchronous or asynchronous motor

Mains voltage:
1 x 230 V
3 x 400/460 V

RFI 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 400/460 V

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

ECOpos — Positioning at its finest

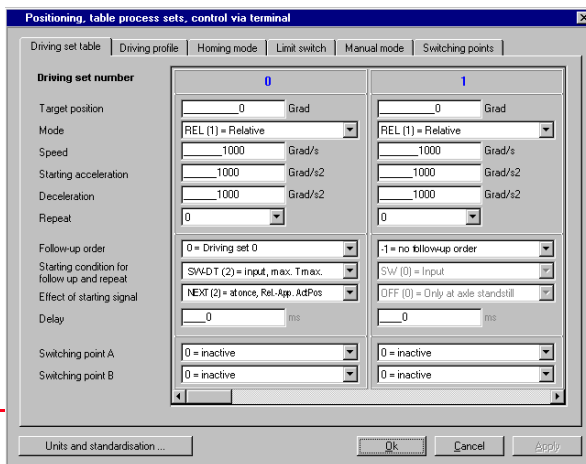
The CDE/CDB3000 drive controllers are optimized for the positioning of electric drives. Alternatively, operation of the drive can also be speed or torque controlled.

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 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

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

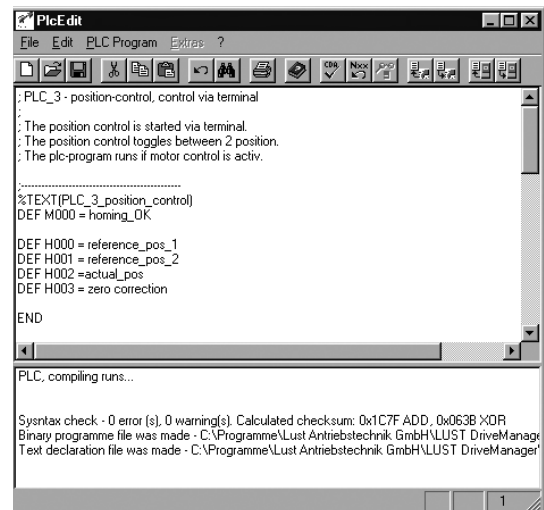
PDO control information is typically processed within 1 ms, making for very short response times.

With **PROFIBUS** networking, specially matched 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 1ms.

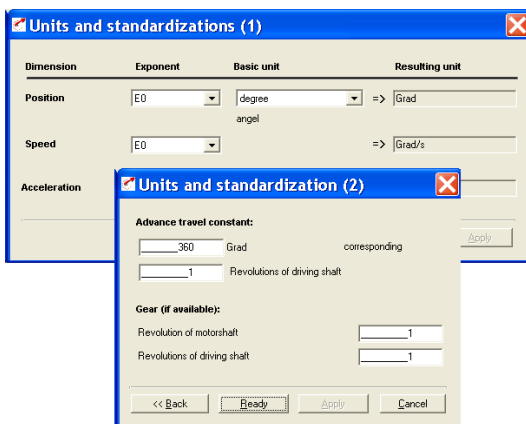
- Short cycle times thanks to a setup time of just 1 ms
- Absolute or relative positioning, endless traversing
- Linear acceleration and braking ramps or with adjustable jolt limiting for motions that are easy on the mechanics
- Jolt-limited changes to the motion job in just 1 ms even during ongoing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

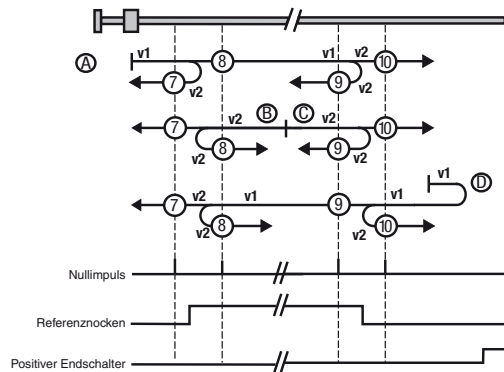
Comprehensive basic functions for positioning

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



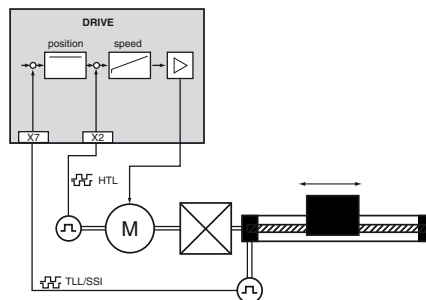
- Different types of reference traverses, including with continuous referencing for slip-prone systems such as conveyor belt



- 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.

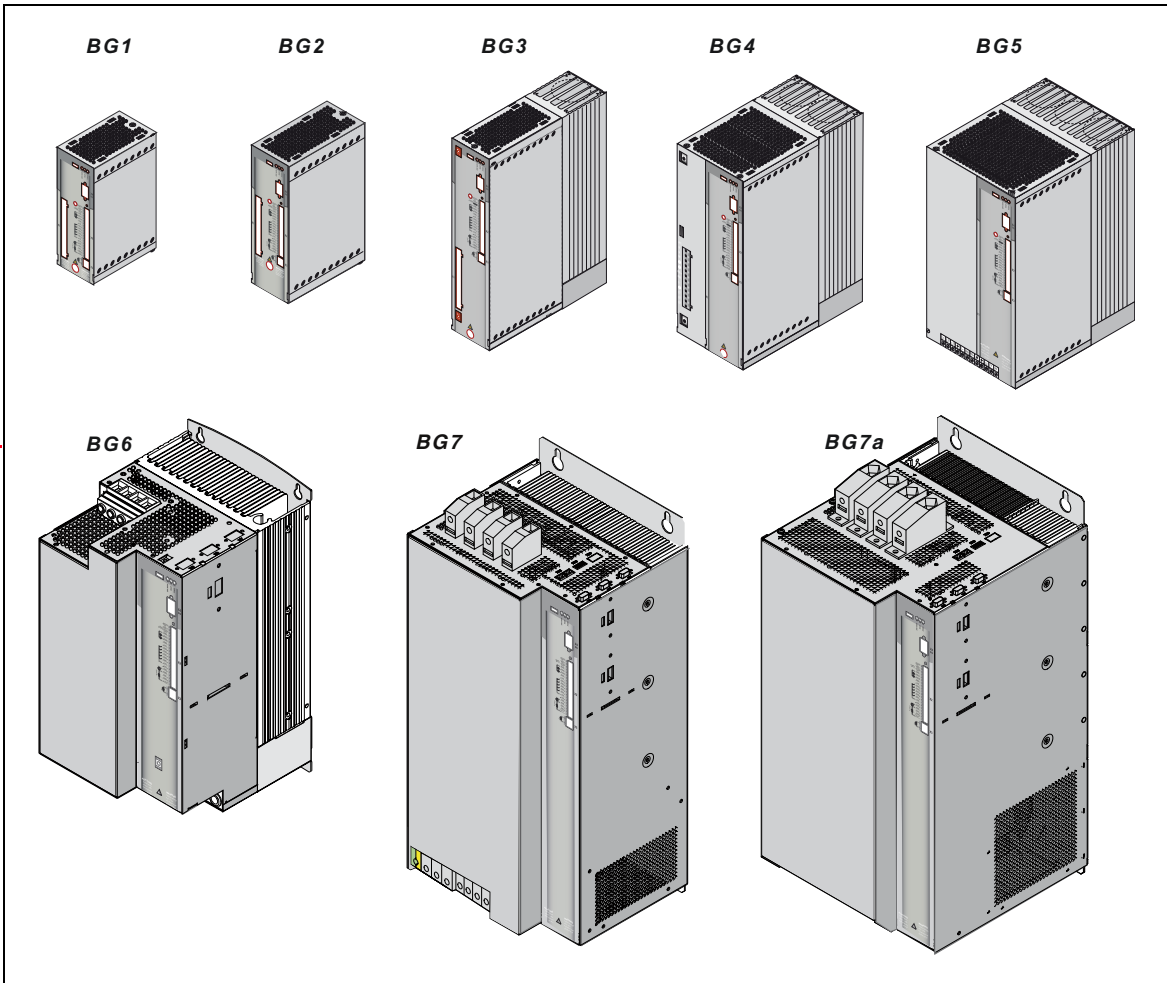
- Evaluation of two position measuring systems for pin-point positioning with loose mechanisms



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 master encoder input

Positioning Controllers 0.375 to 110 kW / 2.4 to 210 A



CDE/CDB3000 Sizes	BG1	BG2	BG2	BG3	BG4	BG5	BG6	BG7	BG7a
CDE3000			2.2 A	7.8 A	14 A	24 A	45 A	90 A	143 A
Power classes	2.4 A 4.0 A	7.1 A	4.1 A 5.7 A	10 A	17 A	32 A	60 A 72 A	110 A 143 A ¹⁾	170 A 210 A ¹⁾
CDB3000			0.75 kW	3.0 kW	5.5 kW	11 kW	22 kW	47 kW	75 kW
Power classes	0.375 kW 0.75 kW	1.5 kW	1.5 kW 2.2 kW	4.0 kW	7.5 kW	15 kW	30 kW 37 kW	55 kW 75 kW ¹⁾	90 kW 110 kW ¹⁾
Mains voltage	230 V -20% +15%		3 x 400 V (-15%) ... 3 x 460 V (+10%)				3 x 400 V (-25%) ... 3 x 480 V (+10%)		

¹⁾ Only in liquid-cooled variant

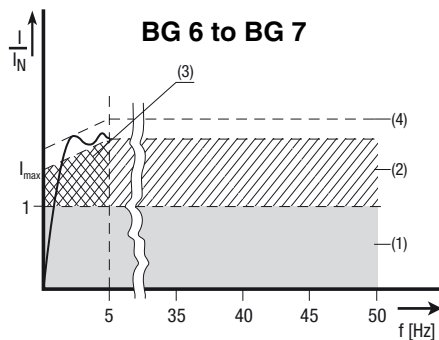
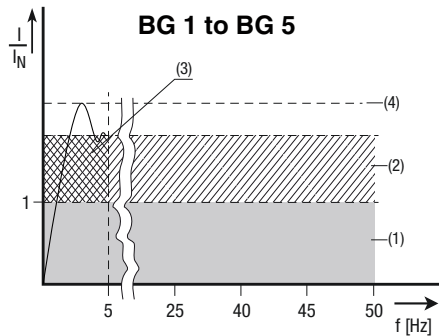
Current capacity of positioning controllers

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)
 $I/I_N = 2.1$ at 4/8/12/16 kHz

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



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	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⁾	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	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 1,000 m above MSL

End-to-end mounting

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

Servocontrollers	Switching frequency of power stage [kHz]	Ambient temperature °C	Rated current		Peak current [A_{eff}] ³⁾			for time ⁴⁾ [s]
			at 400 V	at 460 V	at rotating field frequency rising in linear mode 0 to 5 Hz		for intermittent operation	
			[A_{eff}]	[A_{eff}]	0 Hz	5 Hz	> 5 Hz	
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 $I^2 \times t$ characteristic

Motor cable length 10 m

Mounting height 1,000 m above MSL

End-to-end mounting

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

Servocontroller s	Switching frequency of power stage [kHz]	Ambient temperature °C	Rated current		Peak current [A _{eff}] ³⁾			for time ⁴⁾ [s]
			at 400 V	at 480 V	at rotating field frequency rising in linear mode 0 to 5 Hz		for intermittent operation	
			[A _{eff}]	[A _{eff}]	0 Hz	5 Hz	> 5 Hz	
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 I² x t characteristic

Motor cable length 10 m

2) = CDB

5) Under pre-load of max. 70%

Mounting height 1,000 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":

Servocontrollers	Switching frequency of power stage [kHz]	Ambient temperature °C	Rated current		Peak current [I_{eff}] ³⁾			
			at 400 V	at 480 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]
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)	

³⁾ For 400 V systems

⁴⁾ Shut-off as per $I^2 \times t$ characteristic

Motor cable length 10 m

Mounting height 1,000 m above MSL

End-to-end mounting

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

2



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

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDB-32.004,C

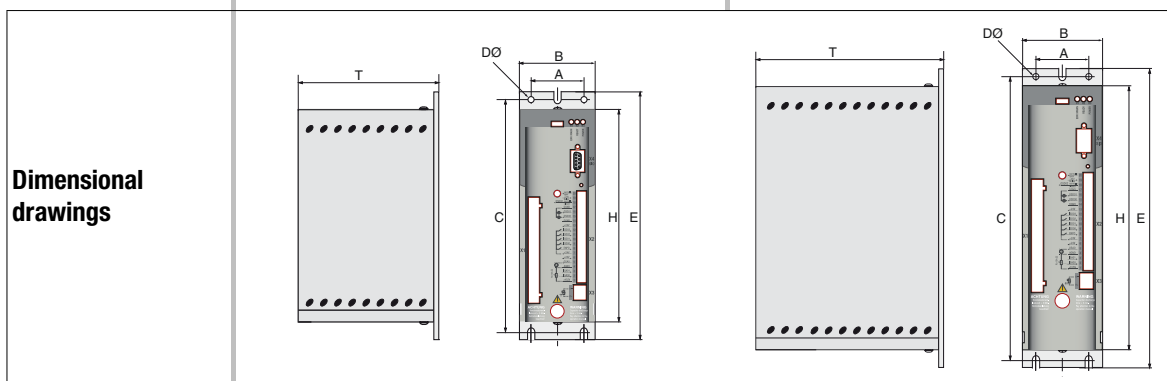
Order code

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⁾	4.3 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 -20 % +15 %		3 x 400 V (-15%) ... 3 x 460 V (+10%)
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

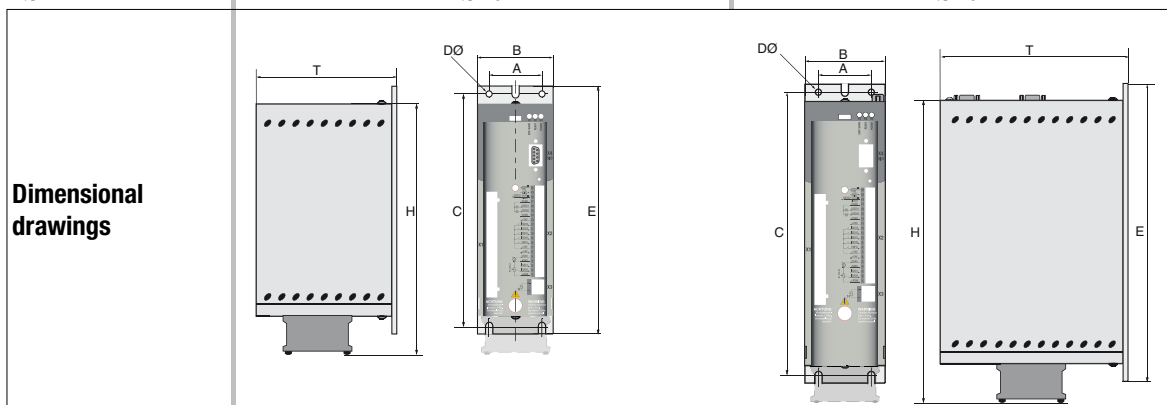
¹⁾ All data apply
to 1-phase units at 230 V
to 3-phase units at 400 V

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

Cooling method	CDB32.003. <u>C</u> x.x	CDB32.004. <u>C</u> x.x	CDB34.003. <u>C</u> 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		Ø4.8



Cooling method	CDE32.003. <u>C</u> x.x	CDE32.004. <u>C</u> x.x	CDE34.003. <u>C</u> 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	Ø4.8		Ø4.8



Positioning controllers CDE3000 4.1 to 7.1 A (BG2)



CDE3 ., x.x, , ...

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

Type CDE-34.006,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 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 -20 % +15 %	3 x 400 V (-15%) ... 3 x 460 V (+10%)	
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 electronics			
Peak braking power with int. braking resistor (only with variant CDE34 ..., Wx.x, BR)	1.7 kW at 90 Ω	1.6 kW at 360 Ω	1.6 kW at 360 Ω
Minimum ohmic resistance of an externally installed braking resistor	56 Ω	180 Ω	180 Ω

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

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

Cooling method	CDE32.008. <u>W</u> x.x	CDE34.005. <u>W</u> x.x	CDE34.006. <u>W</u> x.x	Dimensional drawing
Mechanism				<p>Vertical mounting, wall mounting</p>
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		Ø4.8		

Variant	Characteristic
CDE32.008.Wx.x, <u>BR</u>	Internal braking resistor
CDE34.005.Wx.x, <u>BR</u>	Internal braking resistor
CDE34.006.Wx.x, <u>BR</u>	Internal braking resistor

Positioning controllers CDB3000 1.5 to 2.2 kW (BG2)



CDB3 ., x.x, , ...

Technical data

Cooling method

Variant

Type CDB-32.008,C

For complete ordering data please refer to the following tables.

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 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 -20 % +15 %	3 x 400 V (-15%) ... 3 x 460 V (+10%)	
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 electronics			
Peak braking power with int. braking resistor (only with variant CDB34 ..., 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, <u>C</u> x.x	Dimensional drawing
Mechanism		
Mounting method	Vertical assembly, end-to-end	<p>Vertical mounting, cold plate</p>
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	Ø4.8	

Cooling method	CDB32.008, <u>W</u>	CDB34.005, <u>W</u>	CDB34.006, <u>W</u>
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	Ø4.8		

Variant	Characteristic
CDB32.008,Wx.x, <u>BR</u>	Internal braking resistor
CDB34.005,Wx.x, <u>BR</u>	Internal braking resistor
CDB34.006,Wx.x, <u>BR</u>	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

Variant

For complete ordering data please refer to the following tables.

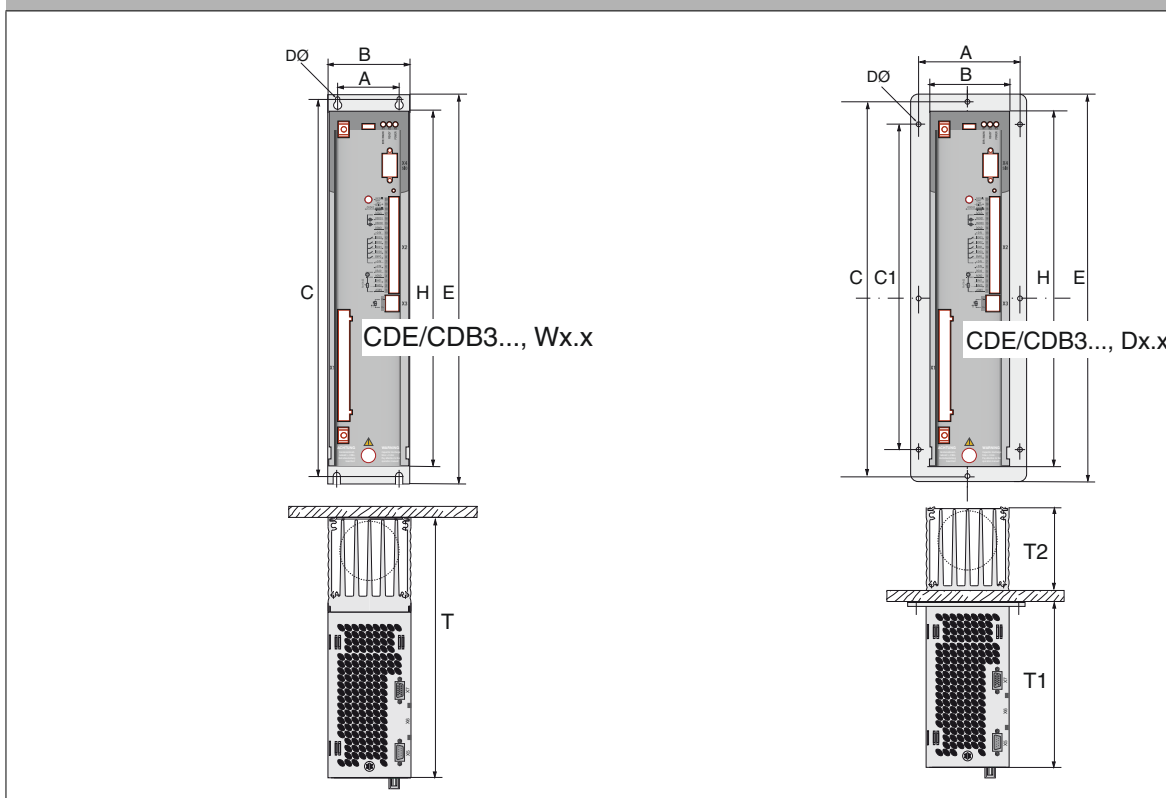
Tech. data ¹⁾	CDE/CDB34.008	CDE/CDB34.010
Output, motor side		
Recommended rated power with 4-pole standard motor	3.0 kW	4.0 kW
Voltage	3 x 0 ... 400/460 V	
Effective rated current (I_N at 4/8 kHz)	7.8 A ²⁾	10 A ²⁾
Peak current	see table on page 2-3	
Rotating field frequency	0 ... 400 Hz	
Switching frequency 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 (-15%) ... 3 x 460 V (+10%)	
Device connected load	5.7 kVA	7.3 kVA
Asymmetry	±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 electronics		
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
D \varnothing	\varnothing 4.8	\varnothing 4.8
E	330	340
C1	-	200

Dimensional drawings



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

Variant

For complete ordering data please refer to the following tables.

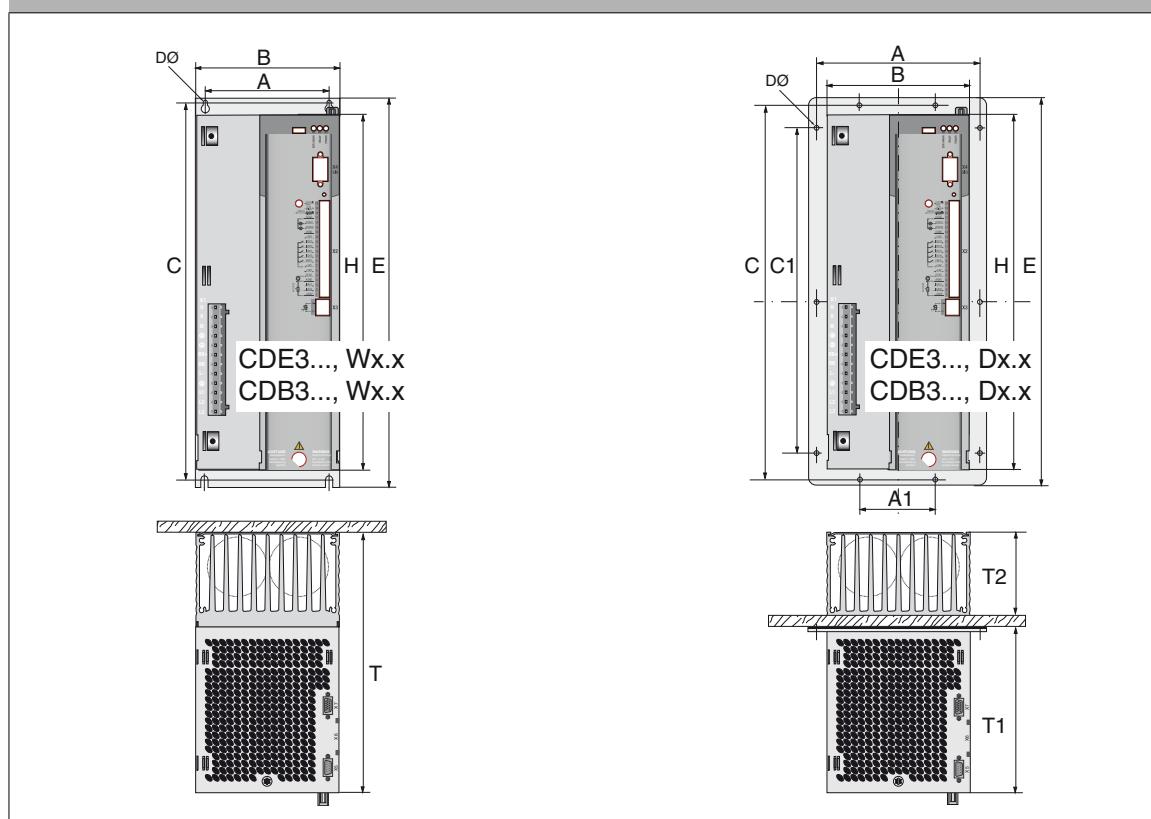
Tech. data ¹⁾	CDE/CDB34.014	CDE/CDB34.017
Output, motor side		
Recommended rated power with 4-pole standard motor	5.5 kW	7.5 kW
Voltage	3 x 0 ... 400/460V	
Effective rated current (I_N at 4/8 kHz)	14 A ²⁾	17 A ²⁾
Peak current	see table on page 2-3	
Rotating field frequency	0 ... 400 Hz	
Switching frequency 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 (-15%) ... 3 x 460 V (+10%)	
Device connected load	10.2 kVA	12.4 kVA
Asymmetry of mains voltage	±3 % max.	
Frequency	50/60Hz ±10%	
Power loss (4 / 8, 12, 16 kHz)		
CDE3000	225 / 283 W	270 / 340 W
CDB3000	210 / 268 W	255 / 325 W
Braking chopper power electronics		
Peak braking power with int. braking resistor (only with variant CDE/CDB3 ..., 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/CDB3..., <u>W</u> x.x	CDE/CDB3..., <u>D</u> x.x
Cooling method	Wall mounting	Push-through heat sink
Mounting method	Vertical assembly, 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)	
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 \varnothing	\varnothing 4.8	\varnothing 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

Variant

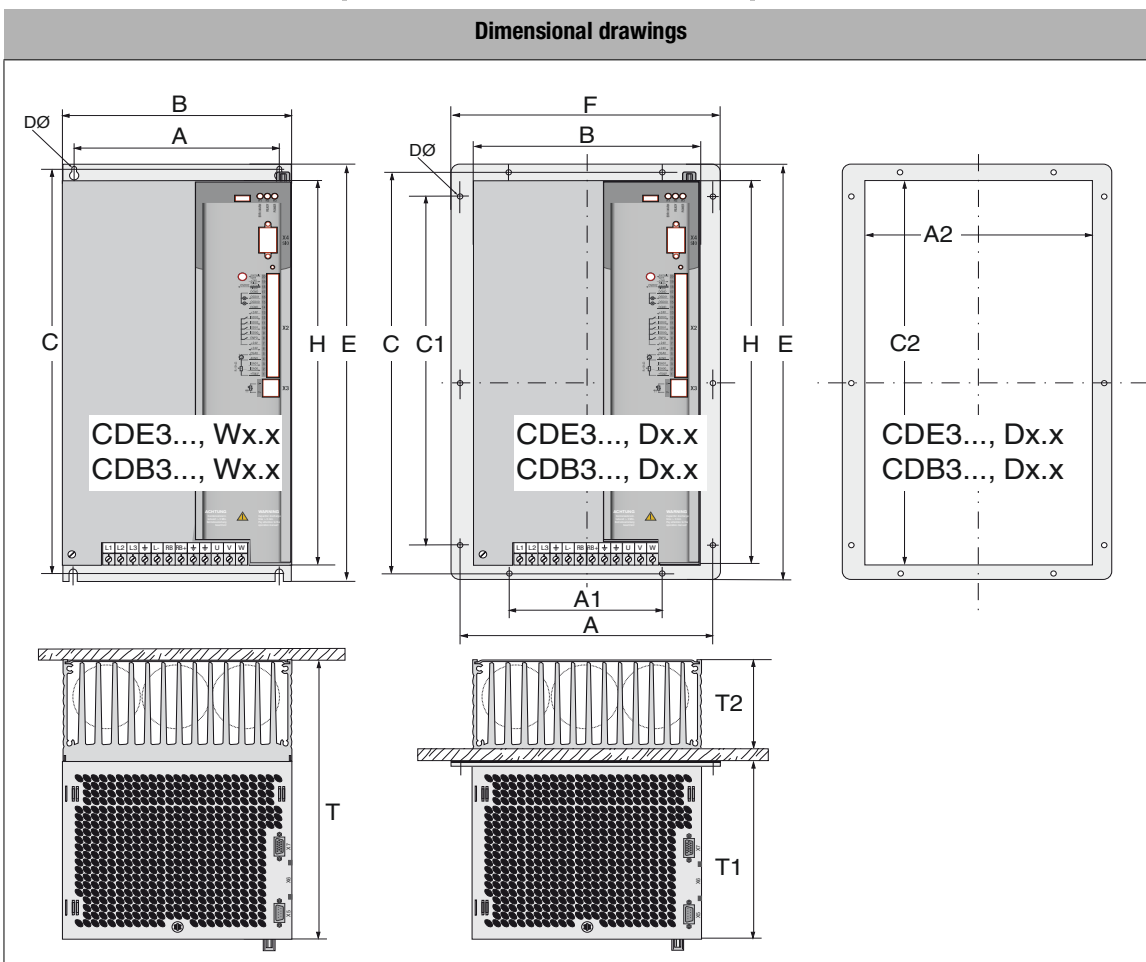
For complete ordering data please refer to the following tables.

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 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	3 x 400 V (-15%) ... 3 x 460 V (+10%)	
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 electronics		
Peak braking power with int. braking resistor (only with variant CDE/CDB3 ..., 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 ..., <u>W</u> x.x	CDE/CDB3 ..., <u>D</u> x.x
Cooling method	Wall mounting	Push-through heat sink
Mounting method	Vertical assembly, 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)	
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
C	320	C = 320 / C1 = 200
DØ	Ø 4.8	Ø 4.8
E	330	340
F	-	210
A2 (wall cut-out)	-	175
C2 (wall cut-out)	-	305



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



Type CDB-34.044,W

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

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

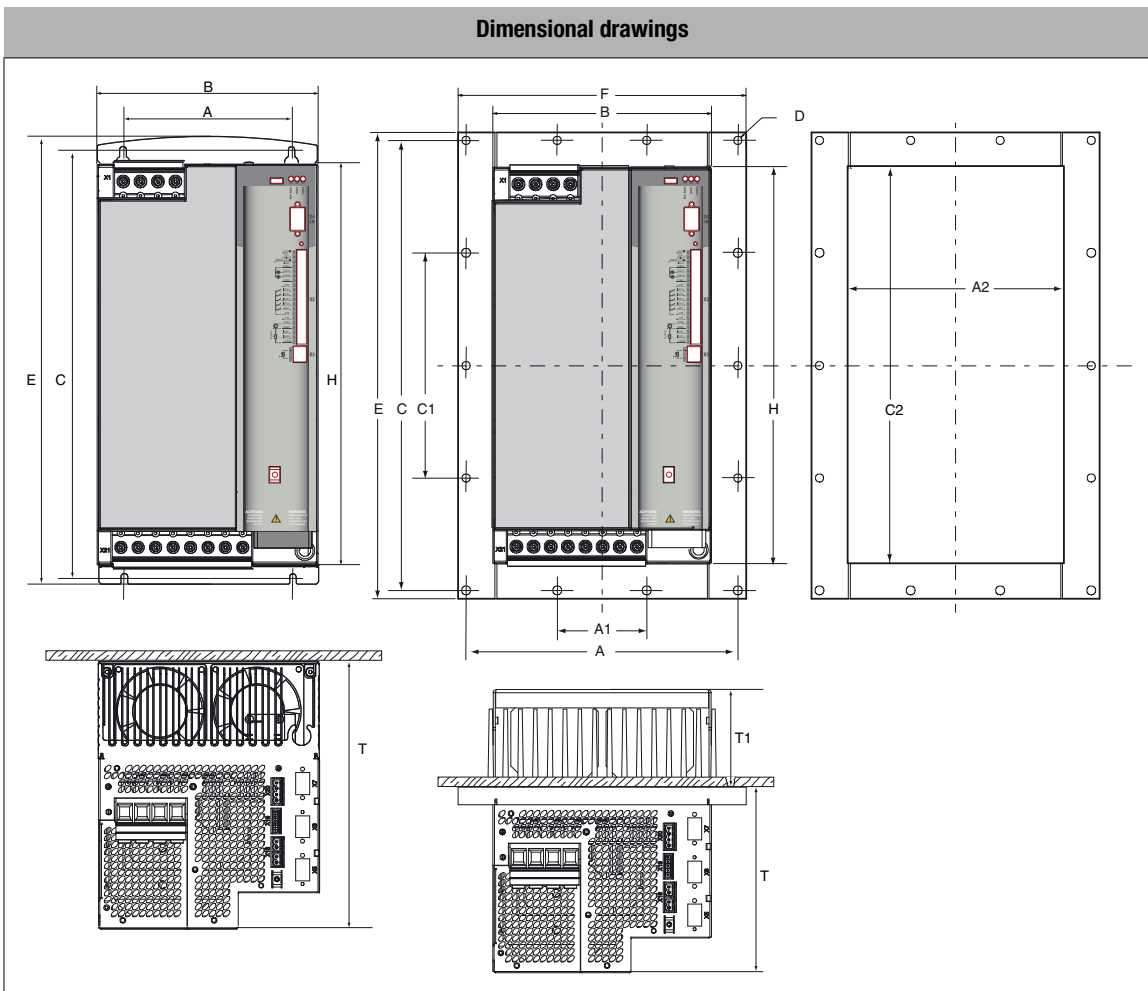
Tech. data ¹⁾	CDE/CDB34.044	CDE/CDB34.058	CDE/CDB34.070
Output, motor side CDE3000			
Voltage ³⁾		3 x 0 ... 400/480 V	
Effective rated current I _N (at 8 kHz)	45 A ²⁾	60 A ²⁾	72 A ²⁾
Peak current	see table on page 2-4		
Rotating field frequency	0 ... 400 Hz		
Switching frequency of power stage	4, 8, 12, 16 kHz (factory setting 8 kHz)		
Output, motor side CDB3000			
Voltage ³⁾		3 x 0 ... 400/480 V	
Effective rated current (I _N at 8 kHz) ¹⁾	45 A ²⁾	60 A ²⁾	72 A ²⁾
Peak current	see table on 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 (-25%) ... 3 x 480 V (+10%)		
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 electronics			
Minimum ohmic resistance of an externally installed braking resistor	18 Ω	18 Ω	13 Ω

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

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

³⁾ 3 x U_{mains} x 0.95

	CDE/CDB3..., W x.x	CDE/CDB3..., D x.x
Cooling method	Wall mounting	Push-through heat sink
Mounting method	Vertical mounting with unhindered air flow, end-to-end	Vertical mounting on mounting plate or cooling section, 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
C	365	C = 391 / C1 = 195.5
D \varnothing	$\varnothing 5.6$	$\varnothing 7.5$
E	382	405
F	-	250
A2 (wall cut-out)	-	204
C2 (wall cut-out)	-	360



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



Type CDB-34.088,W

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

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

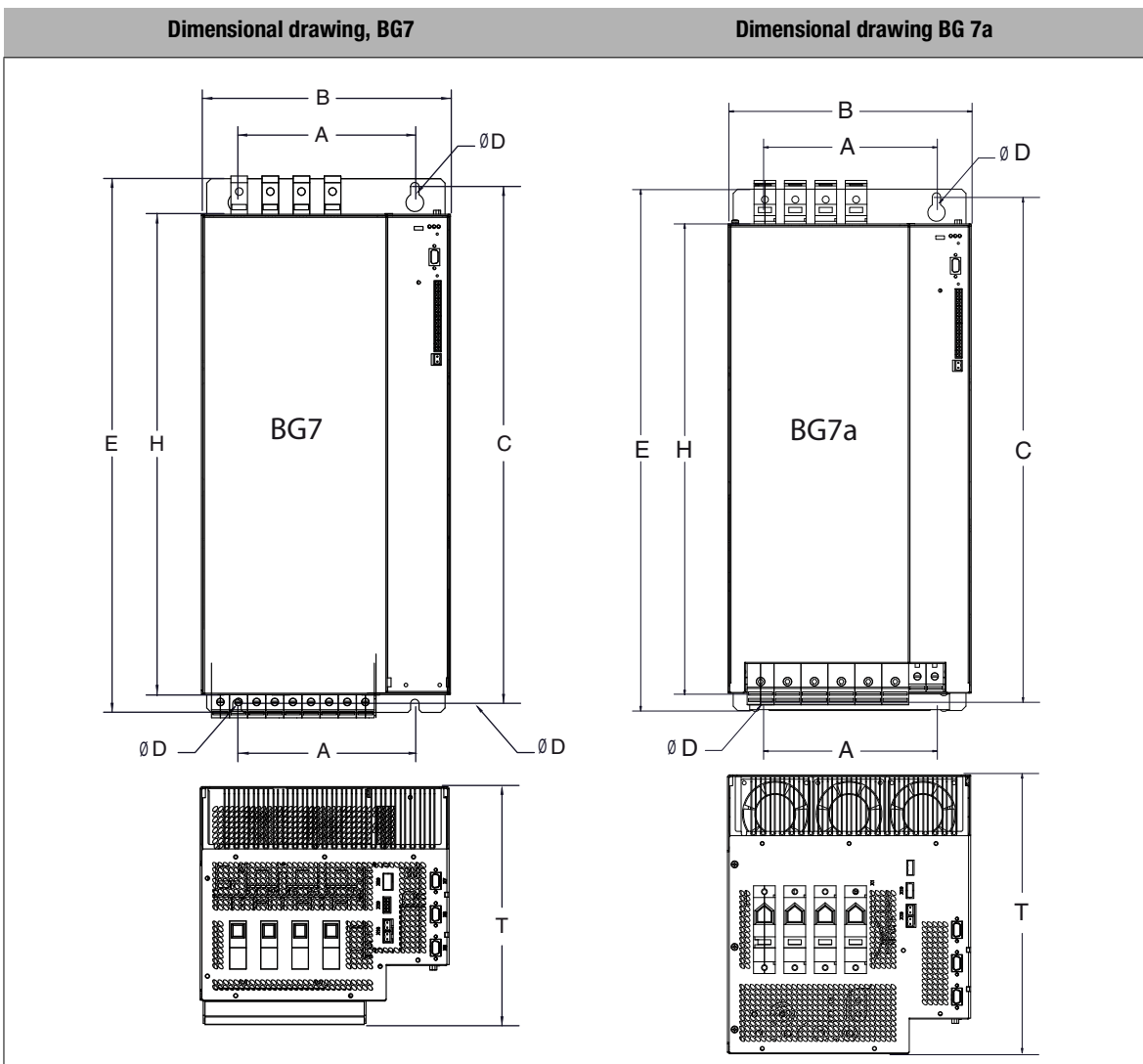
Tech. data ¹⁾	CDE/CDB34.088	CDE/CDB34.108	CDE/CDB34.140	CDE/CDB34.168
Output, motor side				
Voltage ³⁾	3 x 0 ... 400/480 V			
Effective rated current I _N (at 4 kHz)	90 A ²⁾	110 A ²⁾	143 A ²⁾	170 A ²⁾
Peak current	see table on page 2-4			
Rotating field frequency	0 ... 400 Hz			
Switching frequency of power stage	4, 8, 12, 16 kHz (factory setting 4 kHz)			
Input, mains side				
Mains voltage	3 x 400 V (-25%) ... 3 x 480 V (+10%)			
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 electronics				
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 x U_{mains} x 0.95

	CDE/CDB34.088, <u>W</u> x.x to CDE/CDB34.108, <u>W</u> x.x	CDE/CDB34.140, <u>W</u> x.x to CDE/CDB34.168, <u>W</u> x.x
Cooling method	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
D \varnothing	\varnothing 9.5	\varnothing 9.5
E	600	600



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



Type CDB-34.044,L

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

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

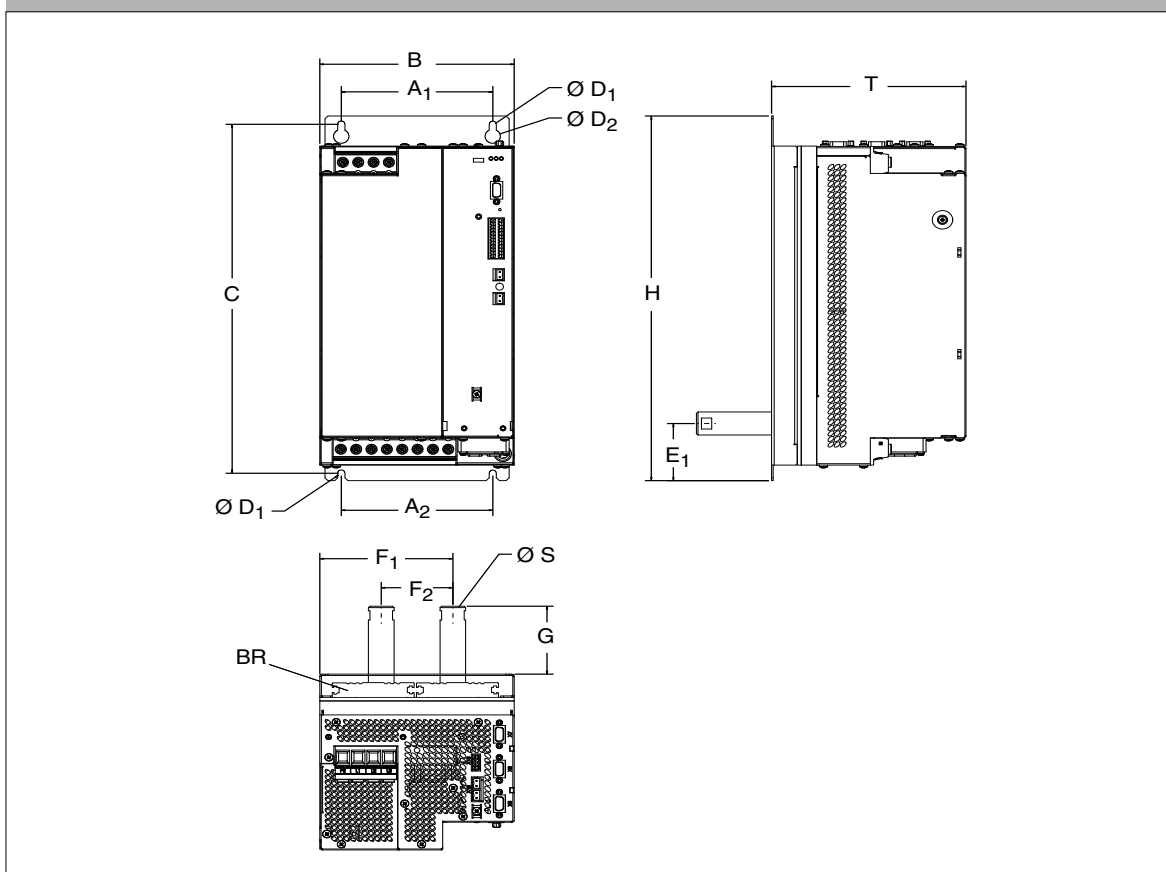
Tech. data ¹⁾	CDE/CDB34.044,L	CDE/CDB34.058,L	CDE/CDB34.070,L
Output, motor side CDE3000			
Voltage ³⁾		3 x 0 ... 400/480 V	
Effective rated current I _N (at 8 kHz)	45 A ²⁾	60 A ²⁾	72 A ²⁾
Peak current		see table on page 2-5	
Rotating field frequency		0 ... 400 Hz	
Switching frequency of power stage		4, 8, 12, 16 kHz (factory setting 8 kHz)	
Output, motor side CDB3000			
Device rated power (400V)	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 on 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 (-25%) ... 3 x 480 V (+10%)	
Device connected load	31 kVA	42 kVA	50 kVA
Asymmetry of mains voltage		±3% max.	
Frequency		50/60 Hz ±10%	
Power loss (4kHz)	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⁾ 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 x U_{mains} x 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
D ₁ Ø	Ø7.0
D ₂ Ø	Ø15
E ₁	61.75
F ₁	130
F ₂	70
G	73.5
S	3/8"

Dimensional drawings


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

Positioning controllers (BG7 / 7a) CDE3000,L 110 to 210 A Liquid-cooled CDB3000,L55to110kW

2



Type CDB-34.088,L

CDE/CDB3 □.□□□, □x.x, □□, L...□□

Technical data

Cooling method

Variant

For complete ordering data please refer to the following tables.

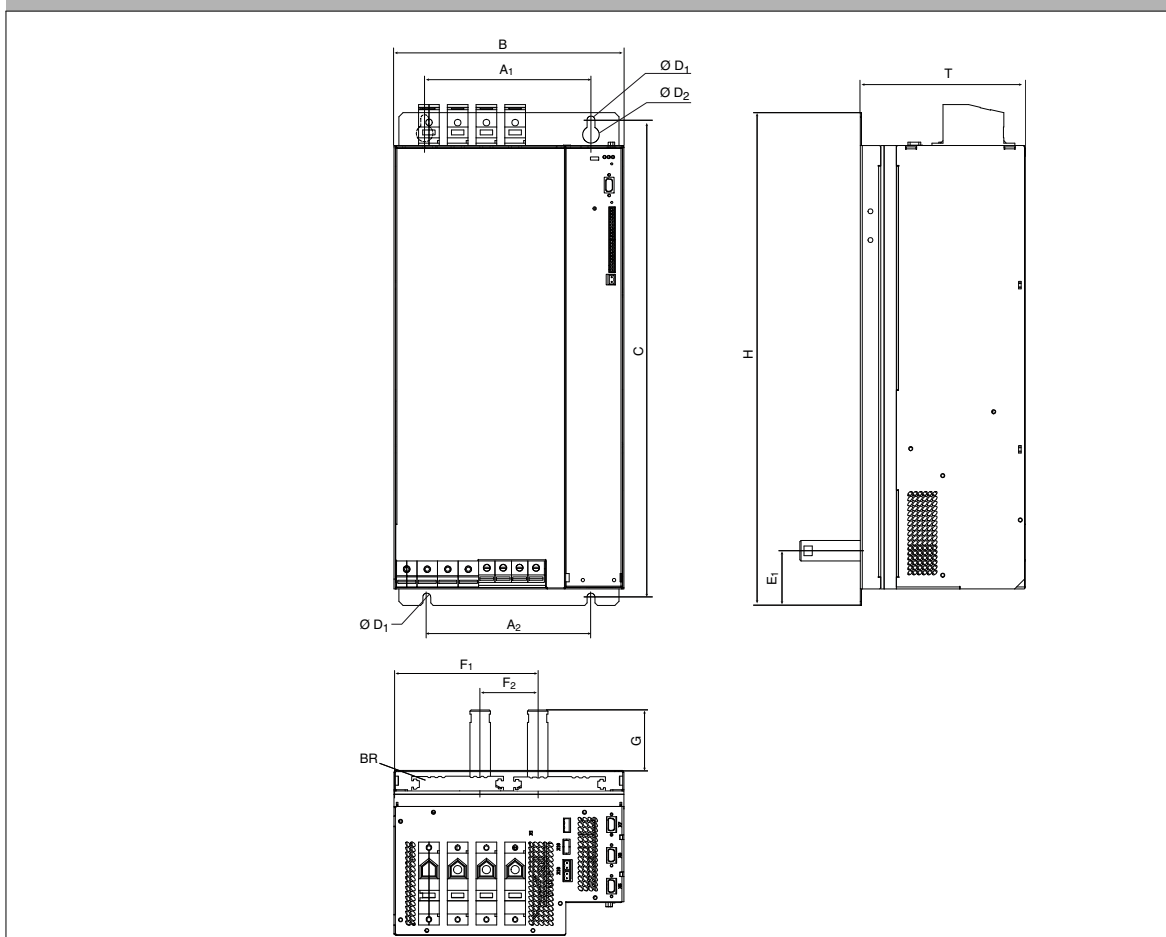
Tech. data ¹⁾	CDE/CDB34.088,L	CDE/CDB34.108,L	CDE/CDB34.140,L	CDE/CDB34.168,L
Output, motor side				
Voltage ²⁾	3 x 0 ... 400/480 V			
Effective rated current I _N (at 8 kHz)	110 A ²⁾	143 A ²⁾	170 A ²⁾	210 A ²⁾
Peak current	see table on page 2-5			
Rotating field frequency	0..0.400 Hz			
Switching frequency of power stage	4, 8, 12, 16 kHz (factory setting 8 kHz)			
Input, mains side				
Mains voltage	3 x 400 V (-25%) ... 3 x 480 V (+10%)			
Device connected load	76 kVA	99 kVA	118 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
Braking chopper power electronics				
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 2-5

	CDE/CDB34.088,L CDE/CDB34.108,L	CDE/CDB34.140,L CDE/CDB34.168,L
Cooling method	Liquid-cooled	
Mounting method	Vertical mounting with unhindered air flow, end-to-end	
Cooling air temperature	45 °C (at 4 kHz power stage switching frequency) 40 °C (at ≥8 kHz)	
Weight	28 kg	32 kg
Dimensions	BG7 [mm]	BG7a [mm]
B (width)	280	280
H (height)	600	600
T (depth)	201	281
A ₁	200	200
A ₂	200	200
C	581	581
D ₁ Ø	Ø9.5	Ø9.5
D ₂ Ø	Ø15	Ø15
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 drawings

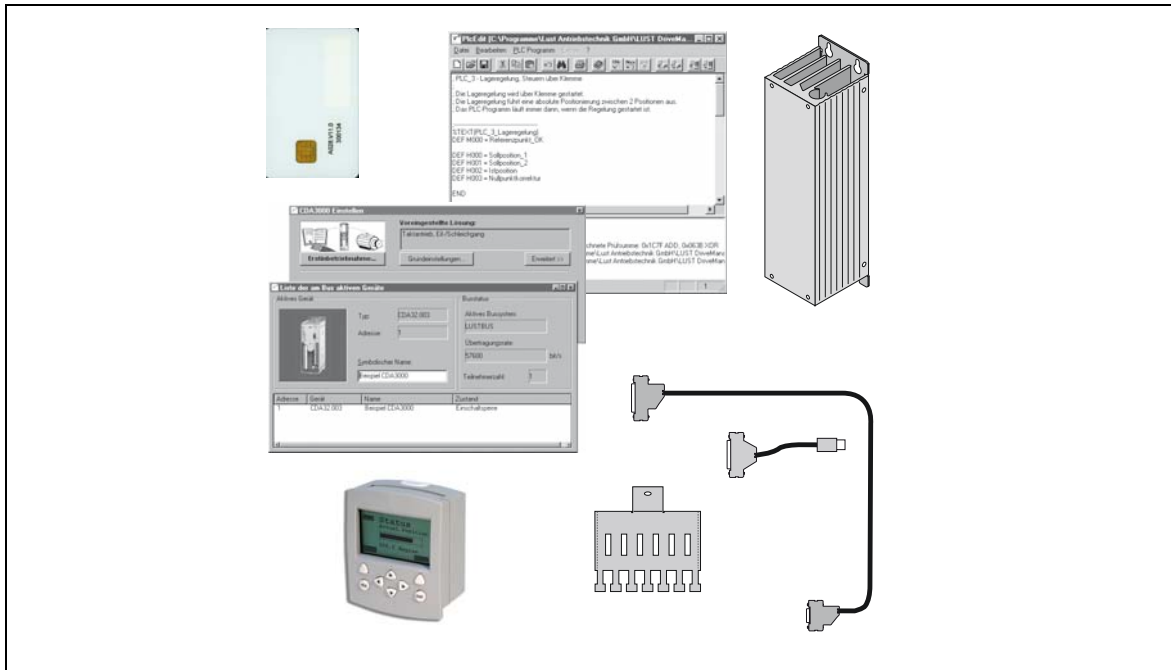


Variant	Resistance [Ω]	Continuous braking power [kW]	Peak braking power [kW]
CDE/B 34.088,L,BR	15 (3 x 5Ω)	3.0	111
CDE/B 34.108,L,BR	15 (3 x 5Ω)	3.0	111
CDE/B 34.140,L,BR	15 (3 x 5Ω)	3.0	111
CDE/B 34.168,L,BR	15 (3 x 5Ω)	3.0	111



2

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 X00 - XX

KEYPAD

Series

Variant

KP300

Order code

Order designation Summary

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

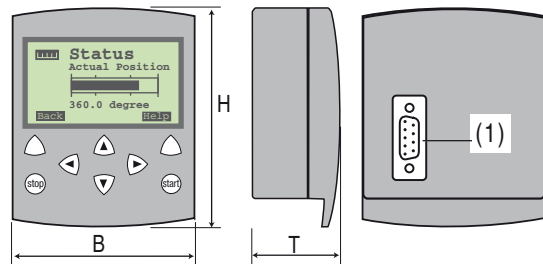
KP300 mechanism

Dimensions (see illustration) 70 x 84 x 37 mm (BxHxT)

Weight 120 g

Connection (RS232)

Standard (1) Can be plugged directly into drive unit

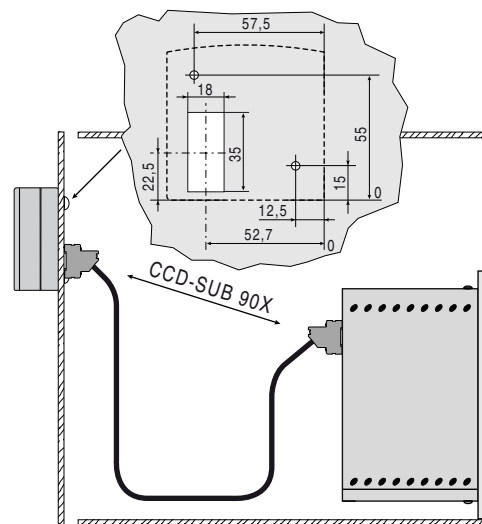


Cable connection

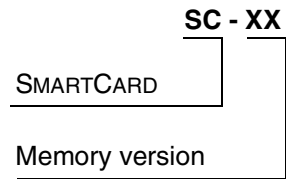
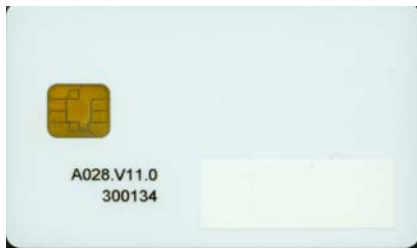
Installation in switch cabinet door

Connection between the 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 3 m.



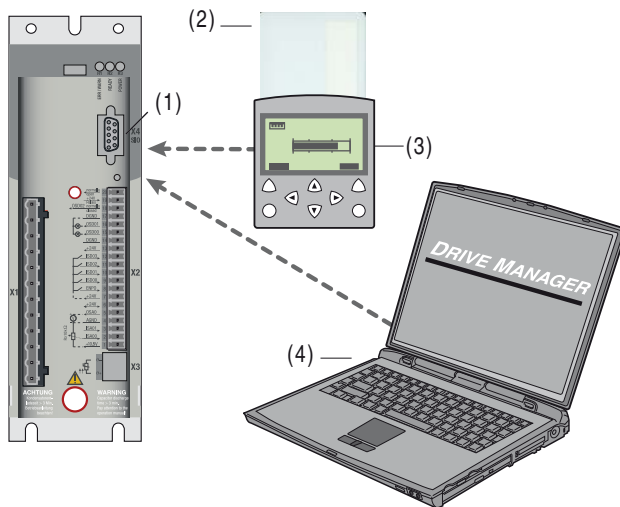
SMARTCARD memory card



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
---------------	-------------



- (1) Terminal X4 for operator control modules or PC port (RS232 interface)
- (2) SC-XL chipcard
- (3) Operator control module KP300
- (4) PC with DRIVEMANAGER user software

PLC software package



PLC Editor

PC user software

PLC Editor

Order code

Tech. data	PLC Editor
Software features	<p>The "PLCeditor" PC user software is an addition to the DRIVEMANAGER:</p> <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 data 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
PLC Editor	- 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

PC user software

Software release

DRIVEMANAGER 3.x

Order code

3

Tech. data	DRIVEMANAGER 3.x
Software features	<p>The "DRIVEMANAGER" PC user software provides the following functions:</p> <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



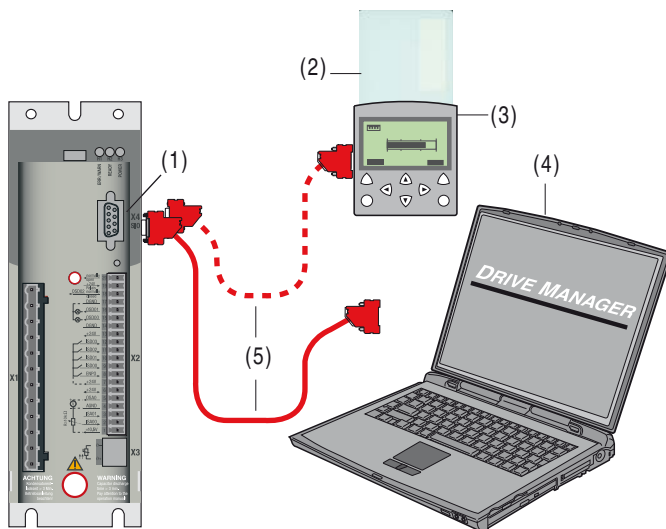
	CC D-SUB 9 0x
Connecting Cable	
Cable type D-SUB	
Cable length in metres	

CCD-SUB 90x

Connecting cable

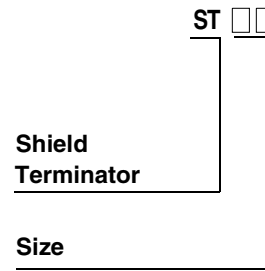
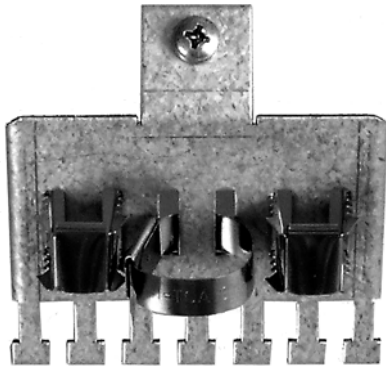
Order designation	Technical data
CCD-SUB 901	Cable for link between servocontroller and KEYPAD or drive controller and PC with DRIVEMANAGER, length 1 m
CCD-SUB 902	Cable for link between servocontroller and KEYPAD or drive controller and PC with DRIVEMANAGER, length 2 m
CCD-SUB 903	Cable for link between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

System layout	Explanation
---------------	-------------



- (1) Terminal X4 for KEYPAD or PC RS232 interface
- (2) SMARTCARD SC-XL chipcard
- (3) Operator control module KP300
- (4) PC with DRIVEMANAGER user software
- (5) Connecting cable CCD-SUB90X, x.x

Shield connection

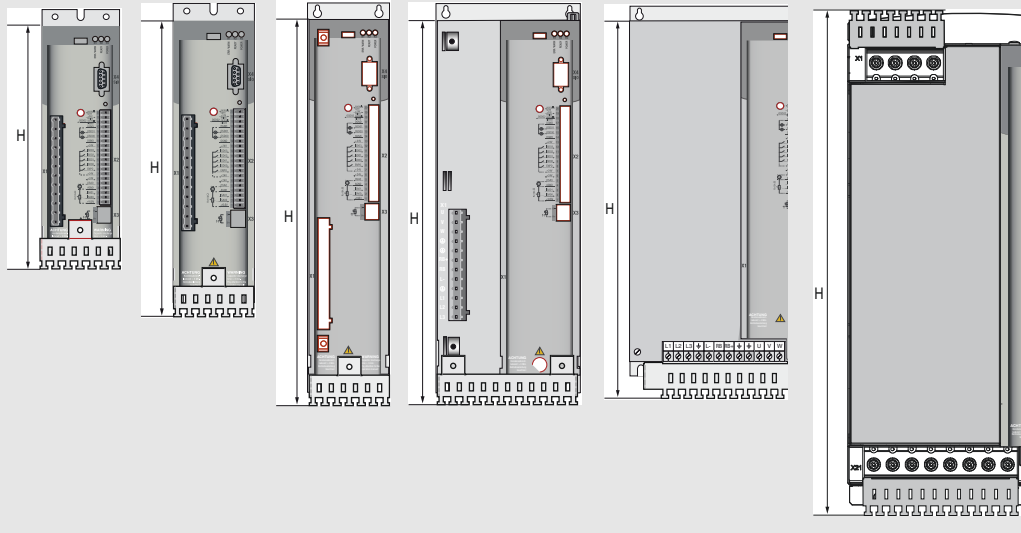


ST02 (incl. metal clips, metal cable band and screw)

Order code

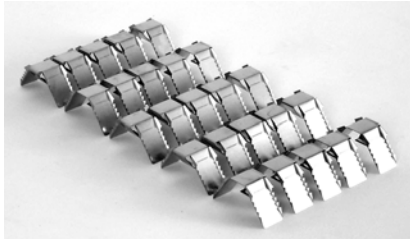
Tech. data	ST02			ST04	ST05	ST06
Suitable for positioning controllers	CDE/ CDB32.003	CDE/CDB32.008 CDE/CDB34.003 CDE/CDB34.005 CDB32.004	CDE/ CDB34.008 CDE/ CDB34.010	CDE/CDB34.014 CDE/CDB34.017	CDE/CDB34.024 CDE/CDB34.032	CDE/CDB 34.044 CDE/CDB 34.058 CDE/CDB 34.070
Power of positioning controllers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



Note: For 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 EM shielding	Usable for cable shield diameter	Material
SMC50	Pack of 50	ST xx	< 12 mm ²	Spring steel

Metal cable band



SMB

Shield Metal Band

360° contacts

Quantity of

Packing unit

SMB50

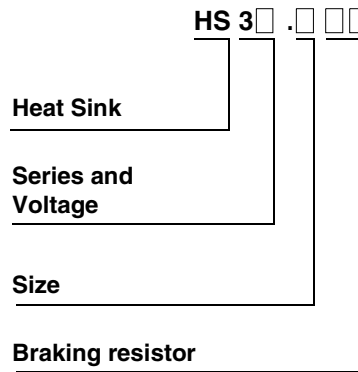
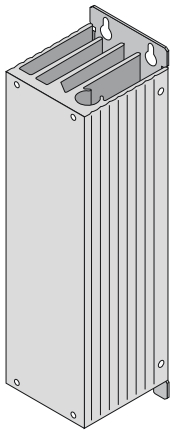
Order code

Order designation	Packing unit	Suitable for EM shielding	Usable for cable shield diameter	Material
SMB50	Pack of 50	ST xx	> 12mm ²	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]	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

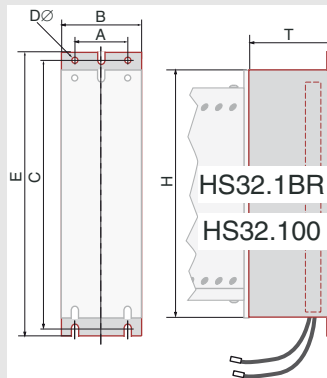
∅4.8

245

HS32.100

Heat sink

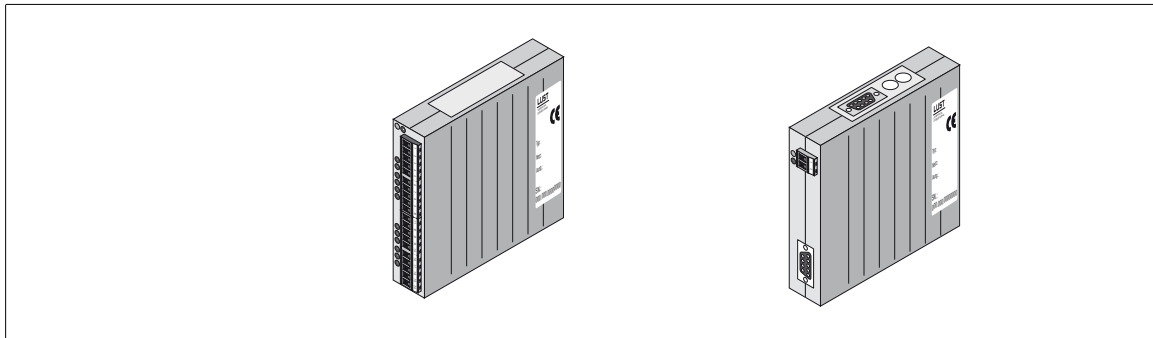
Dimensional drawing





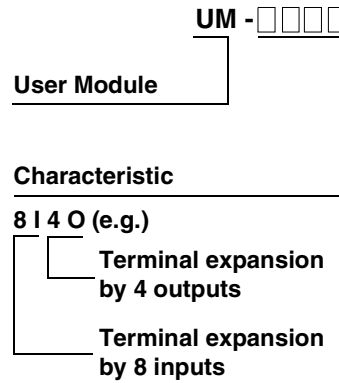
3

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-8140

Order code

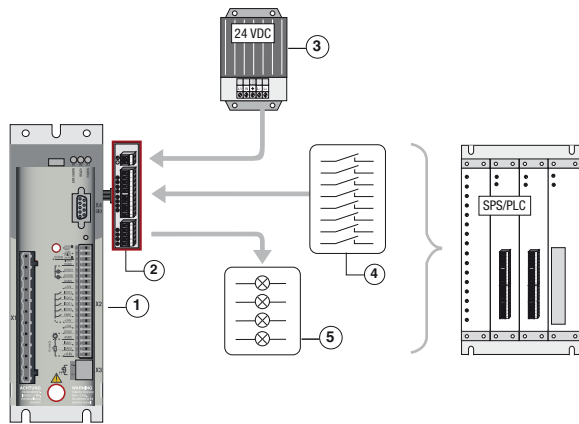
Order designation	Summary
-------------------	---------

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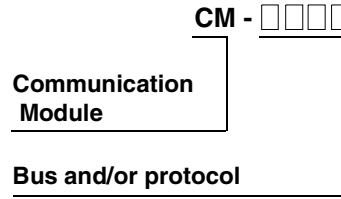
Voltage supply	24 VDC ±20 %		
Current consumption	0.6 A		
Eight inputs	Input voltage for signal "0"	from 0 to 5 V	
	Input voltage for signal "1"	>15 V	
	Input current with signal "1"	3.5 mA to 7.0 mA (6 mA at 24 VDC)	
Four outputs	Output current	Permissible range with signal "1"	
		Mean	min. 5 mA max.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

System layout, UM-8140	Explanation
------------------------	-------------



- (1) Positioning controller CDE/CDB3000
- (2) User module UM-8140
- (3) External power pack 24 VDC
- (4) Eight control inputs (programmable)
- (5) Four control outputs (programmable)

Communication module (PROFIBUS)



CM-DPV1

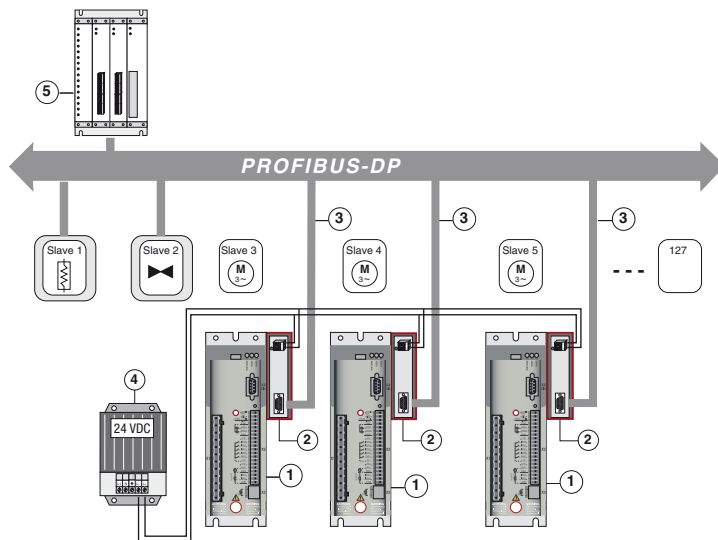
Order code

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]

System layout, PROFIBUS-DP	Explanation
----------------------------	-------------



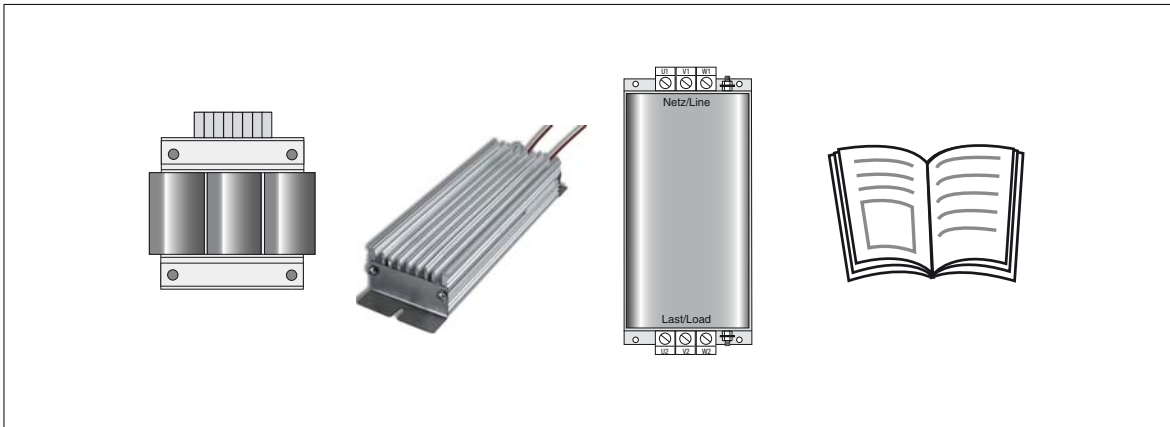
- (1) Positioning controller CDE/ CDB3000
- (2) Communication module CM-DPV1
- (3) PROFIBUS-DP system cable
- (4) Power pack 24 VDC
- (5) DP-Master

max. 127 stations



4

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

LR34.10-UR

Order code

Ambient conditions	LR 32. xxx-UR	LR 34. xxx-UR
Rated voltage	1 x 230 V, -20 % +15 %, 50/60 Hz ¹⁾	3 x 480 V, -25 % +10 %, 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 temperature	-25 °C 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 170 A
Permissible contamination	P2 as 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 %

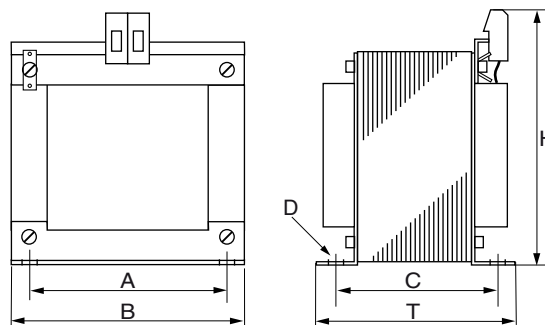
Single-phase line reactors

Suitable for positioning controllers	Tech. data	Rated current [A]	Power loss tot. [W]	Inductance [mH]	Weight [kg]	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

Dimensions [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 drawing:



Three-phase line reactors

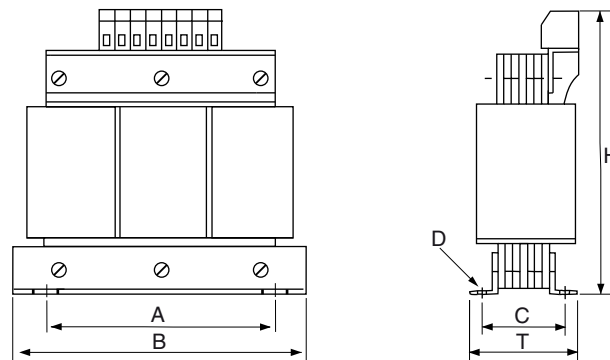
Suitable for positioning controllers	Tech. data	Rated current [A]	Power loss tot. [W]	Inductance [mH]	Weight [kg]	Connection [mm ²]
CDE/CDB34.003	LR34.4-UR	4.2	20	7	2.5	4
CDE/CDB34.005 CDE/CDB34.006	LR34.6-UR	6	25	4.88	2.5	4
CDE/CDB34.008	LR34.8-UR	8	25	3.66	2.5	4
CDE/CDB34.010	LR34.10-UR	10	35	2.93	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

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

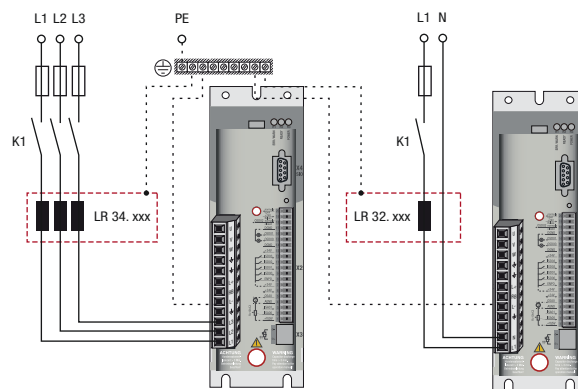
Three-phase line reactors

Dim. [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
B (width)	125	125	125	125	155	155	155	190	155	190	190	230	230	240	240
H (height)	130	130	130	130	160	160	170	200	170	200	240	300	300	330	330
T (depth)	75	75	75	75	80	80	120	110	120	120	110	160	180	190	190
A	100	100	100	100	130	130	130	170	130	170	170	180	180	190	190
C	55	55	55	55	59	59	72	58	72	68	78	98	122	125	125
D Ø	5	5	5	5	8	8	8	8	8	8	8	8	8	11	11

Dimensional drawing

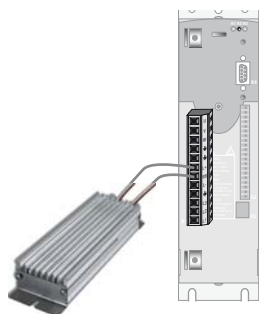


System layout



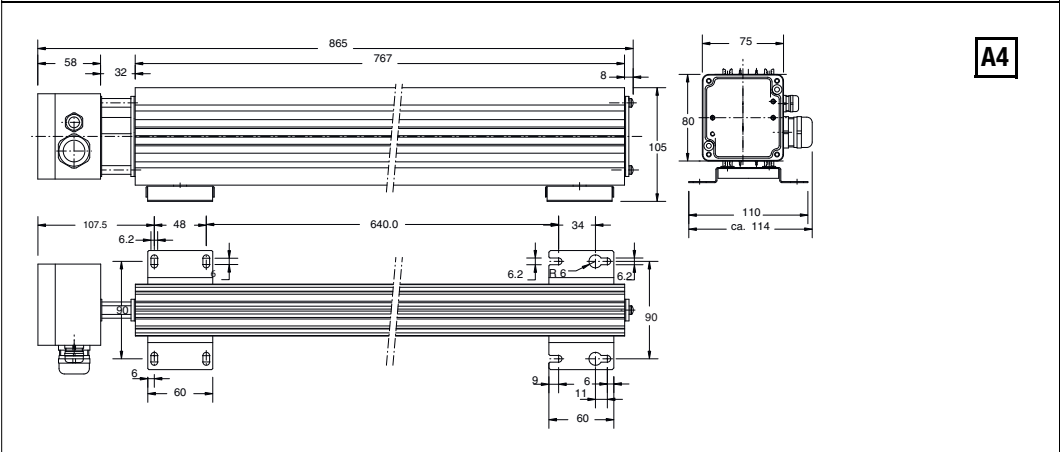
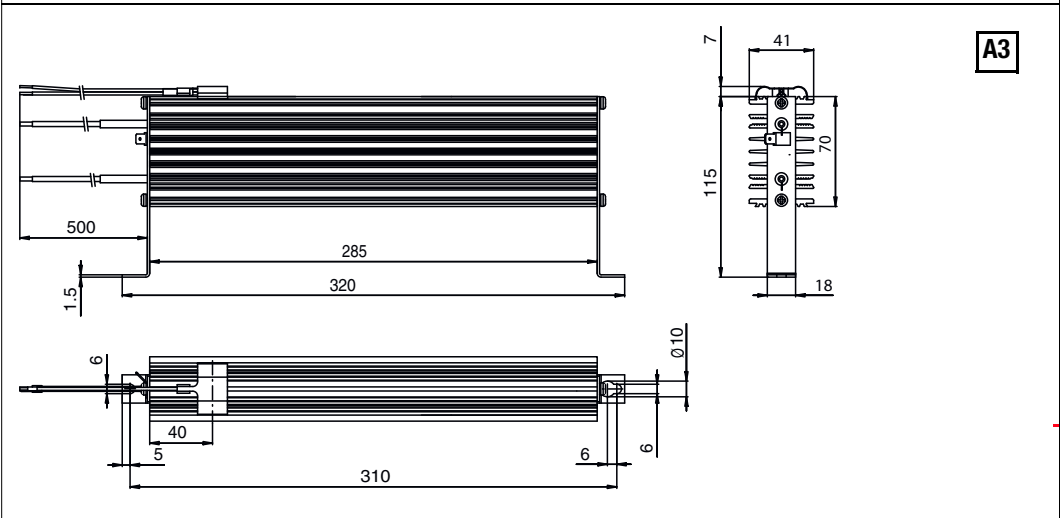
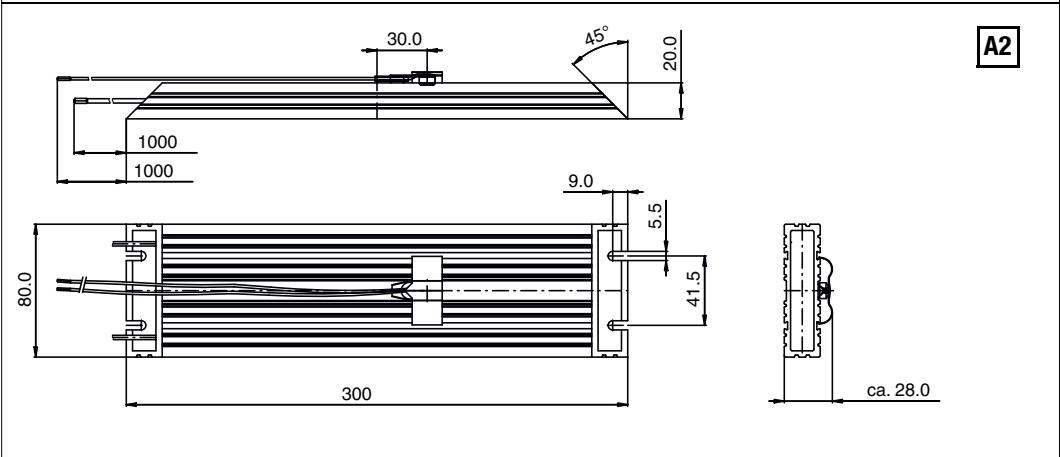
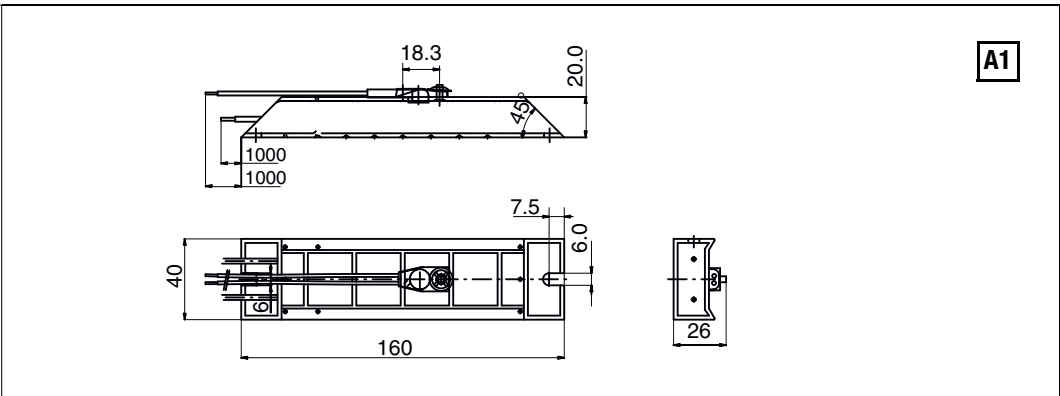
Order designation	Cont. braking power [W]	Resistance [$\Omega \pm 10\%$]	Peak braking power 750 VDC [W]	Protection	Diagram
BR-200.01, 540,UR	35	200	2800	IP54	A1
BR-200.02, 540,UR	150	200	2800	IP54	A2
BR-200.03, 540,UR	300	200	2800	IP54	A3
BR-090.01, 540,UR	35	90	6250	IP54	A1
BR-090.02, 540,UR	150	90	6250	IP54	A2
BR-090.03, 540,UR	300	90	6250	IP54	A3
BR-090.10, 650,UR	1000	90	6250	IP65	A4
BR-026.010.540,UR	35	26	21600	IP54	A1
BR-026.020.540,UR	150	26	21600	IP54	A2
BR-026.030.540,UR	300	26	21600	IP54	A3
BR-026.10,650,UR	1000	26	21600	IP65	A4

System layout



Dimensions [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
Diagram	A1	A2	A3	A4

Dimensional drawings



Mains filters



EMC □□□.□

Electro
Magnetic
Compatibility

Rated current

Variant

EMC180.1-UR

Order code

Ambient conditions	EMC.xxx.x-UR
Rated voltage	3 x 480 V, max. + 10 % 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 %/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 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]	Connection [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

1) Load side: Litz wire AWG 14, 2.08 mm², length 400 mm

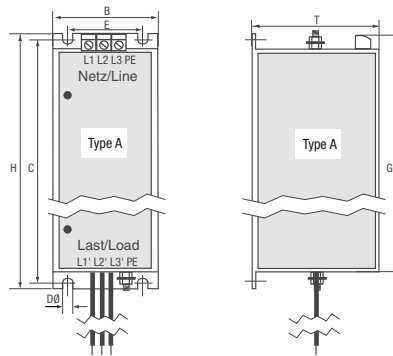
2) Load side: Litz wire AWG 12, 3.32 mm², length 400 mm

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

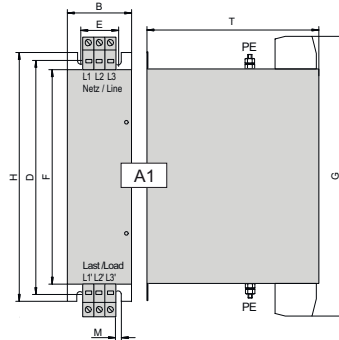
Three-phase mains filters, dimensional drawings A1 and A2

Dimensions [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
Dimensional	A			A1				A2
H (height)	270	270	270	290	280	290	320	310
B (width)	55	55	55	90	62	75	90	200
T (depth)	100	100	100	98	180	200	220	120
D	260	260	260	275	270	270	300	180
E	36	36	36	76	40	45	60	180
F	-	-	-	260	240	250	280	160
G	260	260	260	305	305	336	380	410
D Ø	4.5	4.5	4.5	7.0	7.0	7.0	8.5	4
H	-	-	-	-	-	-	45	-
I	-	-	-	-	-	-	86	-
K	-	-	-	-	-	-	30	-
L	-	-	-	-	-	-	91	-

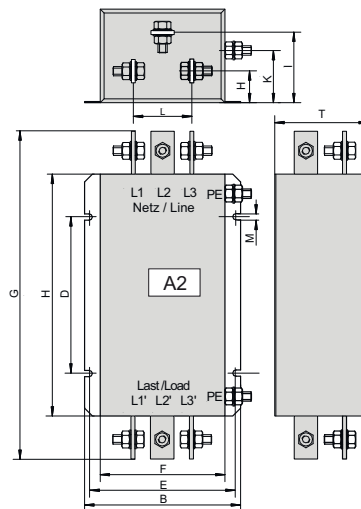
Dimensional drawing: A



Dimensional drawing: A1



Dimensional drawing: A2



User information



Order no.: 1020.01B.x-xx

Product DVD

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

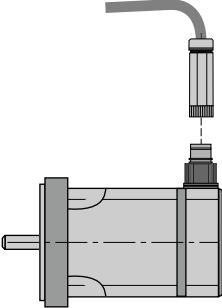
The LTi Drives product DVD includes all the documents available for the CDE/CDB3000 series (see table). You will also find on it documentation relating to other product series, such as ServoOne and the catalogue for motor series LSH and LST. The product DVD incorporates additional information in sections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

User information	Use/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 User Manual	CANopen-Kommunikation CANopen Communication	German English
Benutzerhandbuch User Manual	CM-DPV1 Kommunikationsmodul für PROFIBUS-DP CM-DPV1 Communication Module for PROFIBUS-DP	German 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	6 - 3
	LST servomotor	LST-037	
		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 100 % improvement in dynamics and significantly reduced space requirements combined with smooth running.

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]
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.

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-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.

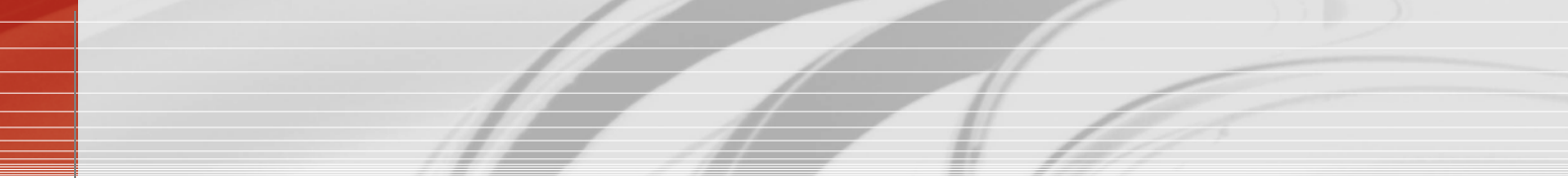
Overview of technical data

Technical data Motor	Standstill torque	Rated torque	Rated current at 24 V	Rated current at 48 V	Rated speed n_N [rpm]	
	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).





6



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We reserve the right to make technical changes.

The content of our Order Catalogue was compiled with the greatest care and attention, and based on the latest information available to us.

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>.