CDA3000-HF
CDD3000-HF
CDS4000

Order Catalogue

Drive solutions for high-frequency applications

C-line high-frequency drive system

LUST

Order Catalogue - High-Frequency Drive Systems
CDA/CDD3000-HF, CDS4000

ID no.: 1000.24 B.0-00

Date: 04/2006

We reserve the right to make technical changes.

The drive controllers with the c-line technology

The particular benefits to users of LUST 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.

Inverters and servocontrollers based on same concept

The c-line DRIVES are ideal for virtually any task. They include the CDA inverters with the Voltage Frequency Control (VFC) method, Field Oriented Regulation (FOR) with encoder evaluation, and Sensorless Flux Control (SFC). The CDD servocontrollers include a highly dynamic speed/torque/position control. The high-frequency (HF) series CDA3000-HF and CDD3000-HF and the CDS4000 series, with output frequencies up to 4000 Hz, offer a wide range, from V/F characteristic control to field oriented regulation of synchronous and asynchronous motors.

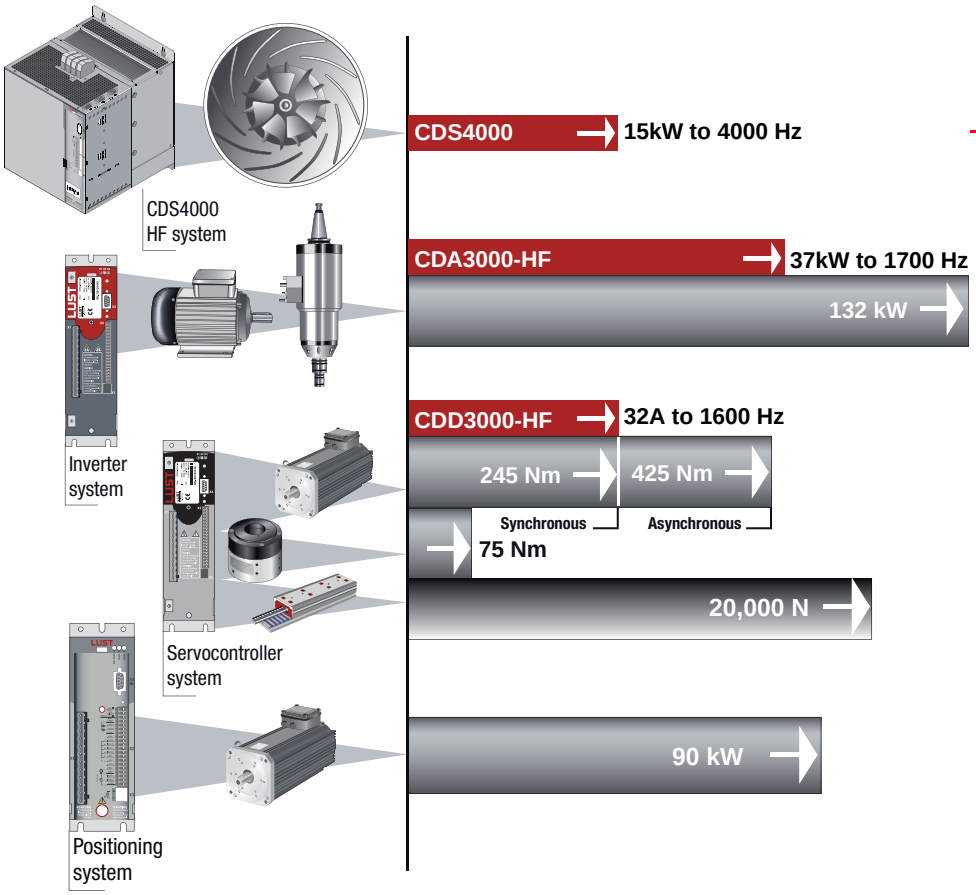
All c-line DRIVES drive controllers have the same basis, with a wide range of variants for specific solutions. A platform of this kind enables rapid, cost-effective response to new developments.

Common features of the c-line DRIVES:

- their design, metal enclosures and cooling method for
  - wall mounting
  - cold plate
  - push-through heat sink
- their excellent EMC performance
- their user-friendly operation with the DRIVEMANAGER
- easy serial commissioning with KEYPAD and SMARTCARD
- the modular networking concept
- the comprehensive range of accessories and complementary components

Our focus is on custom drive solutions with our:

- positioning systems, 0.375 kW to 90 kW
- inverter systems, 0.75 kW to 132 kW
- controller series for asynchronous motors up to 425 Nm, synchronous motors up to 245 Nm, hollow-shaft motors up to 75 Nm and linear motors up to 20,000 N
- HF inverters up to 1700 Hz/50 kVA
- HF drive controllers up to 4000 Hz/22 kVA



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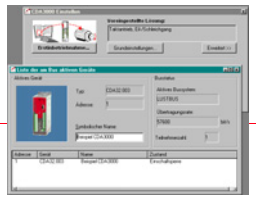


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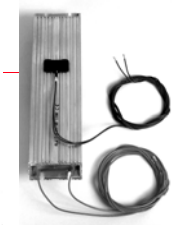



LUST

High-frequency series of the c-line Drives family

- Drive controller CDA3000-HF (inverter system)
- Drive controller CDD3000-HF (servo system)
- Drive controller CDS4000 (servo system)

Precision at high speed

The new members of the c-line Drives family are the optimum choice for all kinds of high-frequency applications. This is founded on our decades of experience in building know-how in the field of high-frequency drives, paired with the deployment of state-of-the-art power stage technology and topologies. Integration into the c-line Drives family provides compatibility with the servo and positioning systems, simplifying interconnection within a single system.

The devices of the high-frequency series are equipped to handle a wide range of applications, including:

- milling or grinding spindles,
- centrifuges in medical technology
- driving high-vacuum pumps or blowers, such as in laser applications.

Outstanding range of functionality

Whether spindle positioning, power failure bridging, evaluation of HF-compatible encoder systems, support for motor chokes and sine filters to suppress current harmonics, the HF drive units offer a wealth of functionality.

The devices of the high-frequency series, with their HF-optimized pulse width modulation, attain output frequencies up to 4000 Hz (CDS4000). They are suitable for controlling both synchronous and asynchronous motors.

Staying cool

Drive controllers must stay cool if the power components are to be utilized to the full. The modular cooling method enables a free choice to be made in keeping with the respective installation. Whether in cold plate design or with the heat sink inside or outside the installation space, the choice can be made according to the situation.

More momentum by automation

New technologies brought to production maturity deliver functional improvements with reliable specifications.

Quick and easy

The new HF drive system is designed to enable users to configure and operate their optimum drive solution even more quickly and easily, despite expanded functionality and a greater range of system components.

The KeyPad and the DriveManager PC-based user software provide user-friendly setting and analysis options for all LUST drive controllers.

EMC with assurance

All devices have a sheet steel housing with an aluminium/zinc finish. This means the housing offers a high degree of protection against interference emission to the direct surroundings. To reduce the interference emission, the radio interference suppression filters are ready integrated into the drive controller. That reduces the cost and labour involved in the overall installation process.

Features

	CDA3000-HF	CDD3000-HF	CDS4000
Mains input			
230 V 50/60 Hz	X	X	-
400/460 V 50/60 Hz	X	X	X
Motor output			
Frequency [Hz]	1700	1600	4000
Power [kVA]	1.6 to 55	1.6 to 22	11 to 22
Current [A]	2.2 to 70	2.2 to 32	17 to 32
Switching frequency	4, 8, 12, 16	4, 8, 12, 16	64, 32, 16 kHz
Controller method			
Loop-controlled V/F characteristic	X	-	-
FOR (Field-Oriented Regulation) for synchronous and asynchronous motors	-	X	X
Encoder systems			
Hall sensors	X	X	X
Sin/Cos encoders optical/gear	-	X	X
Resolvers	-	X	X
Encoder simulation	-	X	X
Interfaces			
RS232 (service and diagnosis)	X	X	X
Digital inputs (fully programmable)	4	5	5
Digital outputs (fully programmable)	3	4	4
Analog inputs	2	2	2
Analog outputs	1	-	-
Motor temperature monitoring (PTC/KTY)	X	X	X
Expansion slots for CAN, CANopen, PROFIBUS, digital inputs and outputs	X	X	X
Connection for ext. braking resistor	X	X	X
Sequence program, fully programmable (PLC)	-	X	X
Other features	Standstill and start-up monitoring Stall monitoring Anti-oscillation Active power load detector Load-sensitive switching frequency Load-sensitive characteristic adaptation	Torque/speed/position control Online switching between positioning and speed mode Power failure bridging Incorporation of motor sine filter and motor choke	

Performance data

HF drive controllers for 230 V systems:

Controller type	Device power output [kVA]	Rated current [A]	Peak current [A]	Size [BG]	Dimensions [mm] Width x height x depth CDA/CDD
CDA/CDD32.003.C,HF	1.0	2.4	4.3[1)]	BG1	70 x 193/223 x 152.5
CDA/CDD32.004.C,HF	1.7	4.0 A	7.2[1)]	BG1	70 x 193/223 x 152.5
CDA/CDD32.006.C,HF	2.3	5.5 A	9.9[1)]	BG2	70 x 218/248 x 177.5
CDA/CDD32.008.C,HF	3.0	7.1 A	12.8[1)]	BG2	70 x 218/248 x 177.5

Mains voltage 1 x 230 V -20% +15%
Cooling air temperature (1000 m above MSL) 45°C at power stage switching frequency 4 kHz
Rotating field frequency 0 ... 1700 Hz (CDA3000-HF), 0 ... 1600 Hz (CDD3000-HF)

1) 1.8 x I_N for 30 s

HF drive controllers for 400/460 V systems:

Controller type	Device power output [kVA]	Rated current [A]	Peak current [A]	Size [BG]	Dimensions [mm] Width x height x depth CDA/CDD
CDA/CDD34.003.C,HF	1.5	2.2	4.0[1)]	BG2	70 x 218/248 x 177.5
CDD34.005.C,HF	2.8	4.1	7.4[1)]	BG2	70 x 248 x 177.5
CDA/CDD34.005.W,HF	2.8	4.1	7.4[1)]	BG2	70 x 218/248 x 177.5
CDA/CDD34.006.W,HF	3.9	5.7	10.3[1)]	BG2	70 x 240/258 x 177.5
CDA/CDD34.008.W,HF	5.4	7.8	14[1)]	BG3	70 x 300 x 250.5
CDA/CDD34.010.W,HF	6.9	10	18[1)]	BG3	70 x 300 x 250.5
CDA/CDD34.014.W,HF	9.7	14	25[1)]	BG4	120 x 300 x 250.5
CDA/CDD34.017.W,HF	11.8	17	31[1)]	BG4	120 x 300 x 250.566
CDA/CDD34.024.W,HF	16.6	24	43[1)]	BG5	170 x 300 x 250.5
CDA/CDD34.032.W,HF	22.2	32	58[1)]	BG5	170 x 300 x 250.5
CDA34.044.W,HF	32.8	45	68[2)]	BG6	190 x 230 x 349
CDA34.058.W,HF	43.8	60	90[2)]	BG6	190 x 230 x 349
CDA34.070.W,HF	52.5	72	108[2)]	BG6	190 x 230 x 349

Mains voltage 3 x 460 V -25% +10%
Rotating field frequency 0 ... 1600 Hz (CDD)
Rotating field frequency 0 ... 1700 Hz (CDA)

1) 1.8 x I_N for 30 s
2) 1.5 x I_N for 60 s

Controller type	Device power output	Rated current	Peak current [A]	Dimensions Width x height x depth
CDS44.017	11.8 kVA	17 A	22 A[1)]	260 x 245 x 285 mm[2)] 260 x 345 x 285 mm[3)]
CDS44.032	22.2 kVA	32 A	41.6 A[1)]	260 x 245 x 285 mm[2)] 260 x 345 x 285 mm[3)]

Mains voltage 3 x 460 V -25% +10%
Cooling air temperature (1000 m above MSL) 40°C at power stage switching frequency 64 kHz
Rotating field frequency 0 ... 4000 Hz

1) 1.3 x I_N for 30 s
2) Standard version
3) With filter assembly

Acceptance tests/Ambient conditions

CE mark

The HF series[1)] conform to the requirements of the Low Voltage Directive DIN EN 50178 and the product standard EN 61800-3 (EMC).

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

The HF series[1)] CDA/CDD3000-HF and CDS4000 are CE marked accordingly. The CE mark on the type plate indicates conformity with the above Directives.

We will be pleased to issue a relevant Declaration of Conformity.

cUL approbation

The HF drive controllers CDA/CDD3000-HF[1)] (except: BG5BR, special devices CDS) carry cUL approbation. For the HF drive controller CDS4000 cUL approbation is in preparation. The cUL approbation is equivalent to UL and CSA approbation.

1) Also applies to user and communication module

EMC acceptance tests

All HF series[1)] have a sheet steel housing with an aluminium/zinc finish to enhance interference immunity (to EN61800-3, environments 1 and 2).

To limit line-borne interference emission to the permissible level, all CDA/CDD3000 HF series up to 11.8 kVA are fitted with integral mains filters. For all other devices suitable external mains filters are available. This ensures compliance with the EMC product standard DIN EN 61800-3:

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

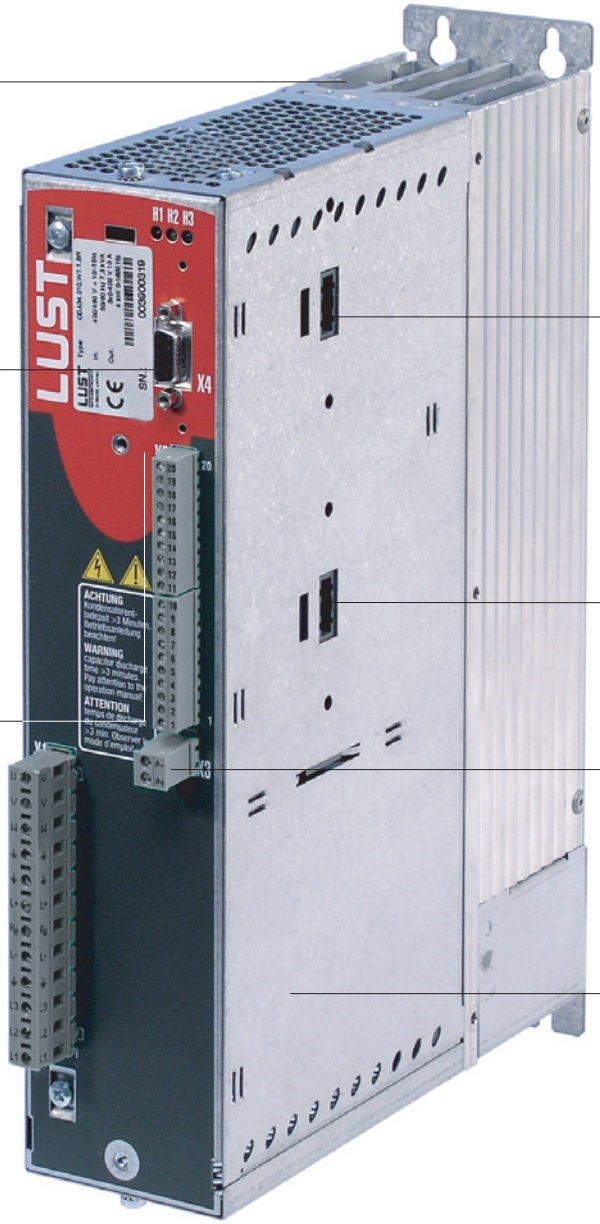
Industrial low voltage system:
Industrial areas up to 25 metres motor cable length

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.

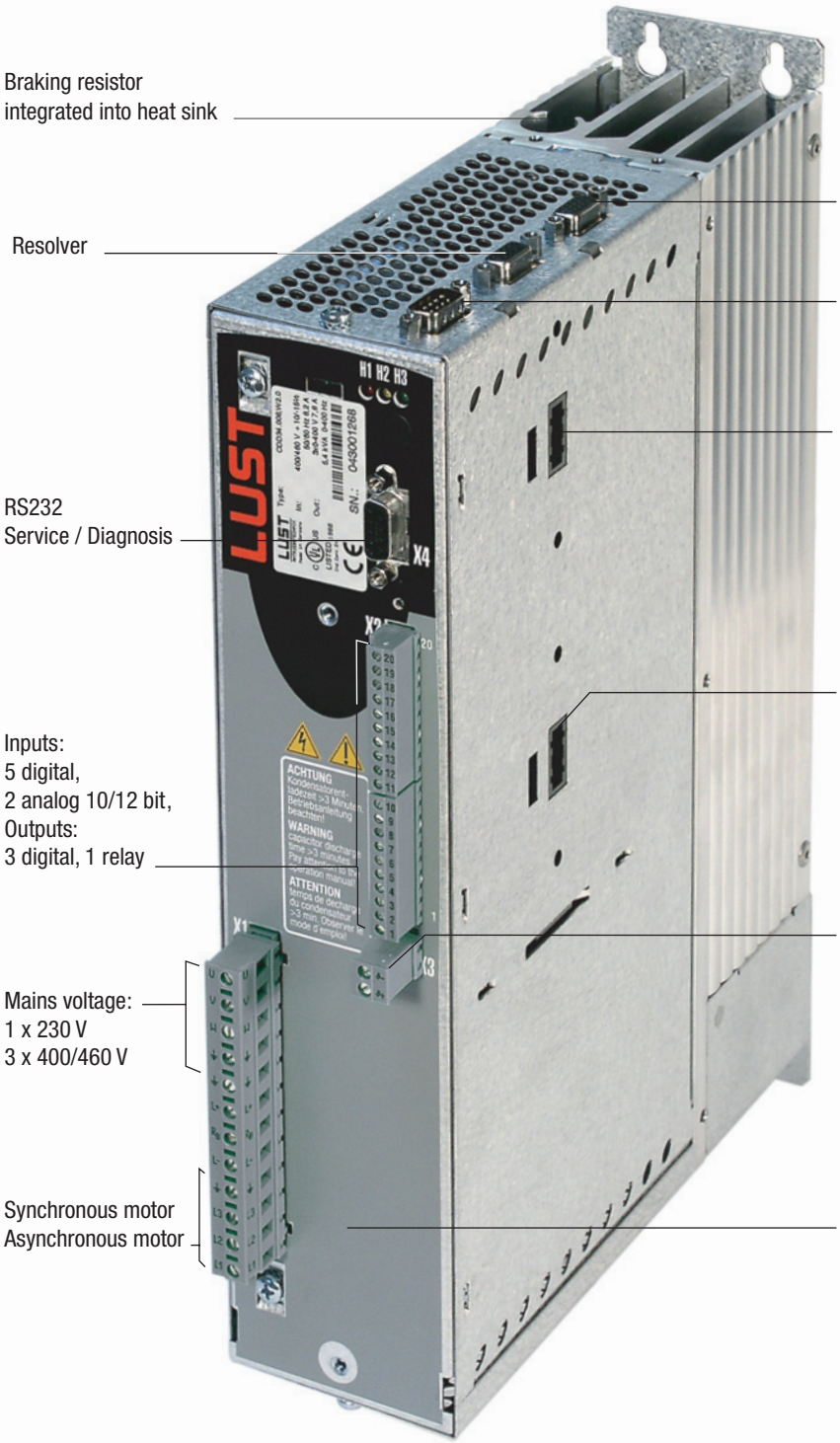
Characteristic		Drive controller CDA/CDD3000-HF	Drive controller CDS4000	KeyPad KP200-XL User and communication module
Temperature range	in operation	-10 ... 45°C (BG1 ... BG5) 0 ... 45°C (BG6) up to 55°C with power reduction	0 ... 40°C with overload 0 ... 55°C without overload	-10 ... 55°C
	in storage	-25 ... +55°C		
	in transit	-25 ... +70°C		
Relative air humidity		15 ... 85%, condensation not permitted		
Protection	Device	IP20 (NEMA 1)		
	Cooling method	Cold Plate IP20 Push-through heat sink IP54	IP20	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		

Attention: Do not install the drive controller in areas where it subject to continuous vibration/shaking.

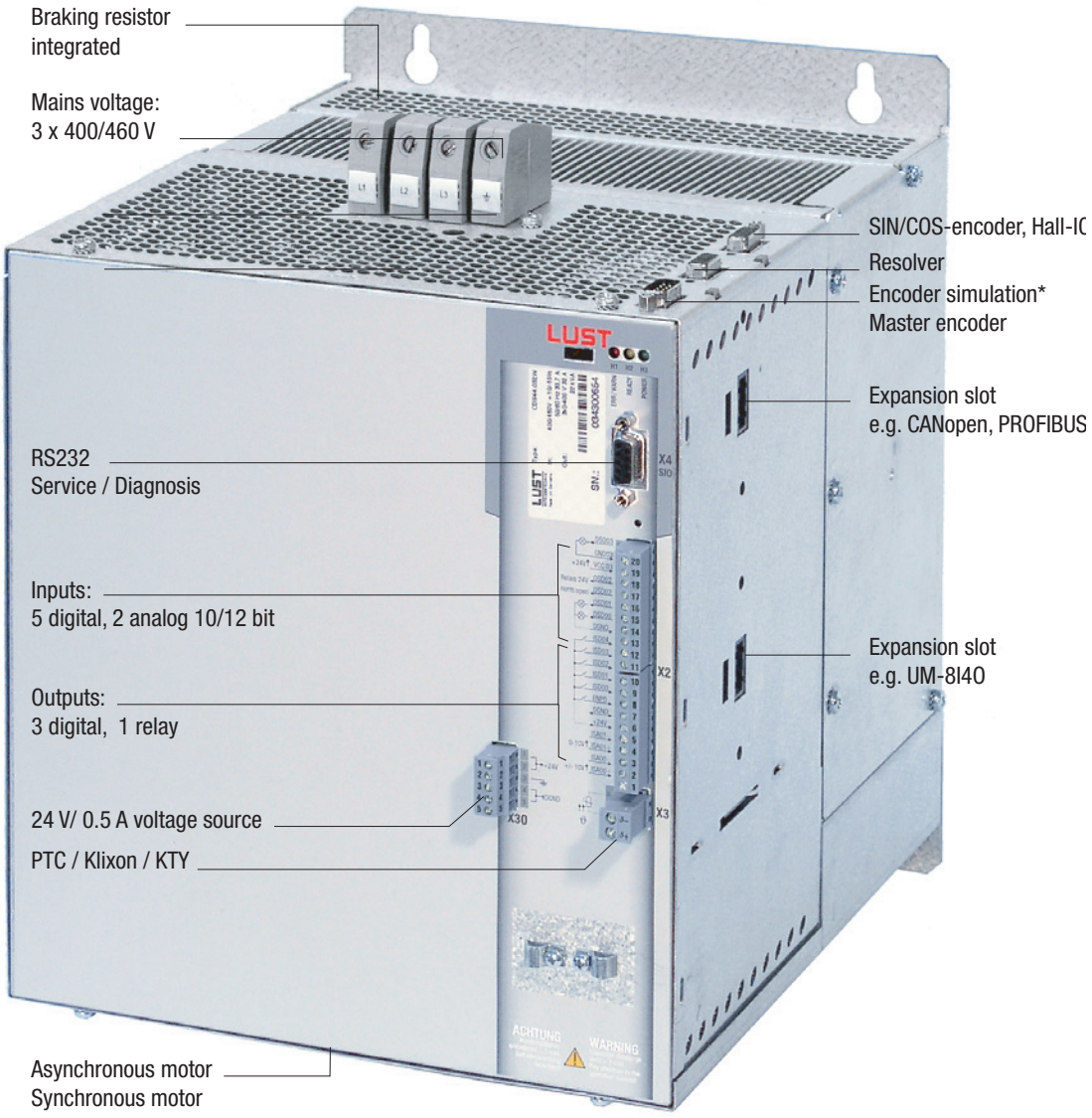
Equipment features - CDA3000-HF



Equipment features - CDD3000-HF



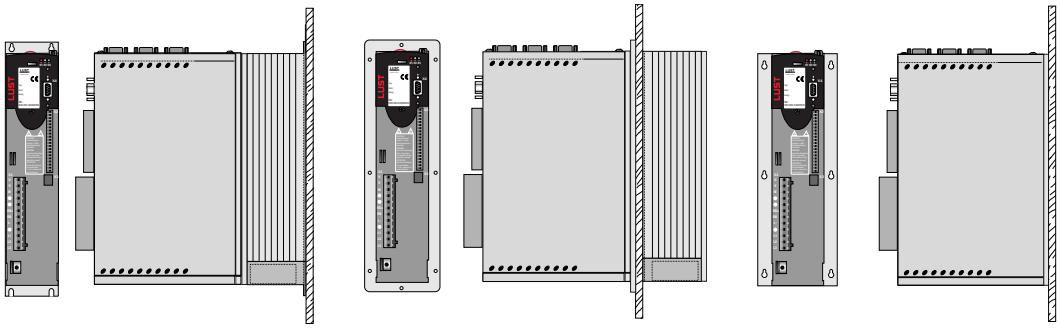
Equipment features - CDS4000



Cooling methods

The base module of the HF drive controllers offers three different mounting and cooling methods (example: CDD3000-HF, size 3)

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



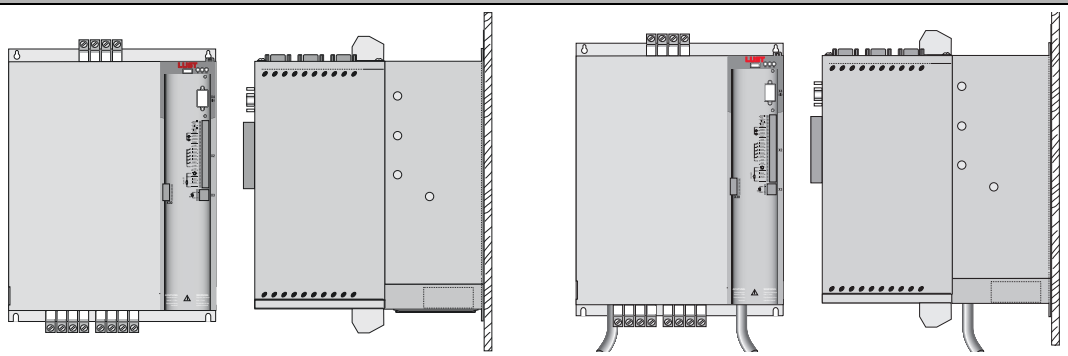
Size	Motor power	HF drive controllers	Wall mounting	Push-through heat sink	Cold plate	Water cooled
BG1	0.375 kW 0.75 kW	CDD32.003 CDA/CDD32.004	YES[1)]	NO	YES	NO
BG2	1.1 kW 1.5 kW 0.75 kW 1.5 kW	CDA/CDD32.006 CDA/CDD32.008 CDA/CDD34.003 CDA/CDD34.005	YES	NO	YES	NO
BG2	2.2 kW	CDA/CDD34.006	YES	NO	YES	NO
BG3	3.0 kW 4.0 kW	CDA/CDD34.008 CDA/CDD34.010	YES	YES[2)]	YES	On request
BG4	5.5 kW 7.5 kW	CDA/CDD34.014 CDA/CDD34.017	YES	YES[2)]	YES	On request
BG5	11 kW 15 kW	CDA/CDD34.024 CDA/CDD34.032	YES	YES[2)]	YES	On request
BG6	22 kW 30 kW 37 kW	CDA34.045 CDA34.060 CDA34.072	YES	YES[2)]	YES	On request

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

2) Protection class IP54 (device side only IP20)

The CDS4000 provides two cooling methods:

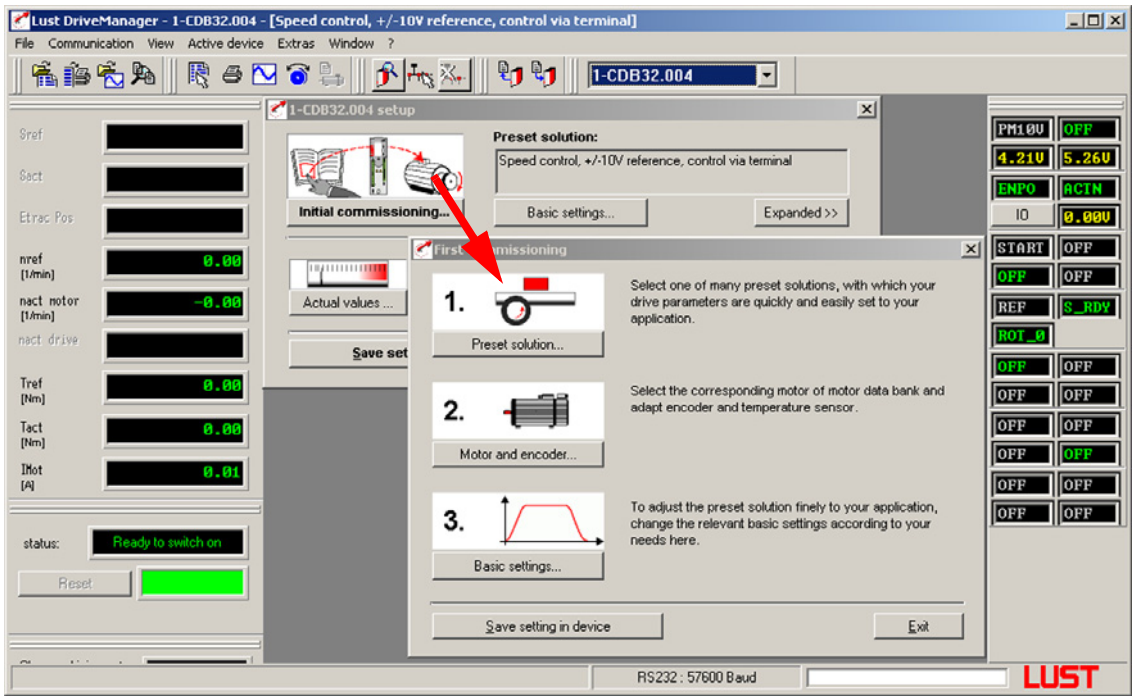
Wall mounted - air cooling | **Wall mounted - water cooling**



Size	Power	HF drive controllers	Wall mounted - air cooling	Wall mounted - water cooling
BG1	7.5 kW	CDS44.017	YES	YES
BG1	15 kW	CDS44.032	YES	YES

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 HF drive 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 HF drive 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.

The motor data and control loops are set using a data set that is stored in a database.

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.

Services

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

http://www.lust-tec.de

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

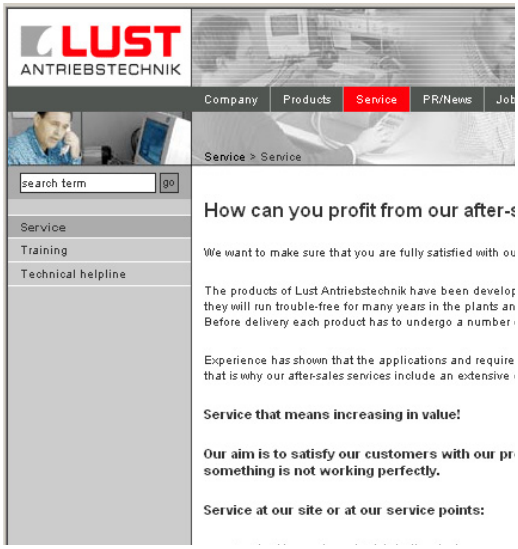
Logistics

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.

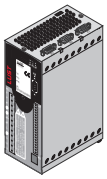
You can reach us:

Mon.-Thur.:	8 a.m. - 4.30 p.m.	Tel. 06441/966-180
Fri.:	8 a.m. - 4 p.m.	Tel. 06441/966-180

Fax: 06441/966-137
e-mail: helpline@lust-tec.de

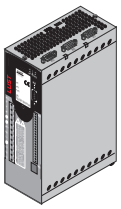
Overview - HF drive controllers 0.375 to 37 kW

BG1



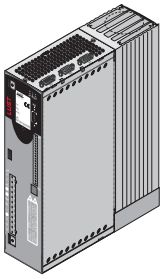
CDD32.003-HF
CDA/CDD32.004-HF

BG2



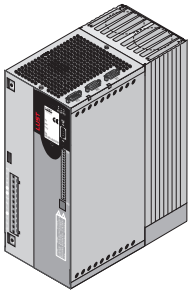
CDA/CDD32.006-HF
CDA/CDD32.008-HF
CDA/CDD34.003-HF
CDA/CDD34.005-HF
CDA/CDD34.006-HF

BG3



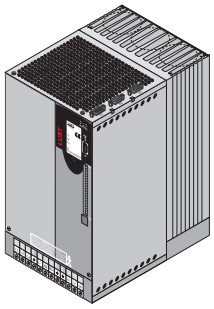
CDA/CDD34.008-HF
CDA/CDD34.010-HF

BG4



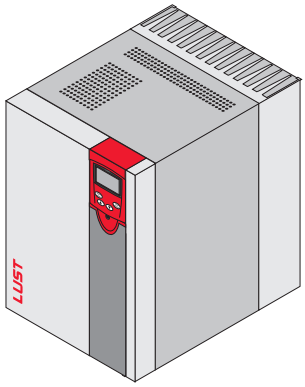
CDA/CDD34.014-HF
CDA/CDD34.017-HF

BG5

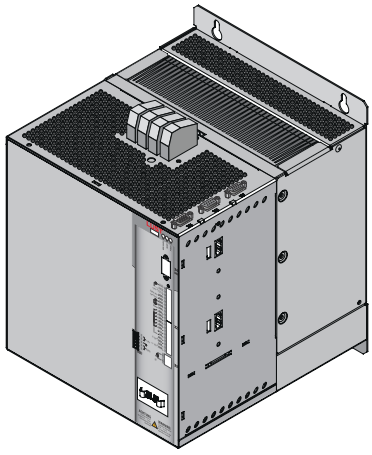


CDA/CDD34.024-HF
CDA/CDD34.032-HF

BG6



CDA34.045-HF
CDA34.060-HF
CDA34.072-HF



CDS44.017
CDS44.032

Size Series	BG1 CDA-HF	BG2 CDA-HF	BG2 CDA-HF	BG3 CDA-HF	BG4 CDA-HF	BG5 CDA-HF	BG6 CDA-HF	CDS4000
Output frequency	0 ... 1700 Hz						0 ... 1000 Hz	0 ... 4000 Hz
Output power	0.75 kW	1.1 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	
Series	**CDD-HF**	**CDD-HF**	**CDD-HF**	**CDD-HF**	**CDD-HF**	**CDD-HF**	-	-
Output frequency	0 ... 1600 Hz							
Output current	2.4 A 4.0 A	5.5 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		17 A 32 A
Mains voltage	1 x 208 V, 230 V, 240 V		3 x 400, 440, 460 V					
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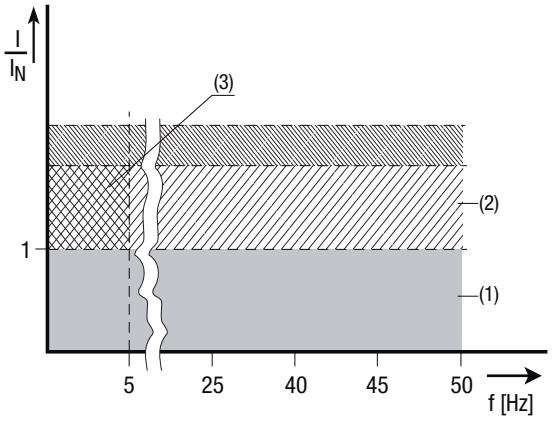
Current carrying capacity of HF drive controllers

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 the conditions change, the maximum permissible current capacity of the HF drive controllers also changes. For details of which current load on the power stage modules is permissible under which changed background conditions, refer to the following characteristic diagrams and tables.



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

(1) Continuous operation

(2) Intermittent* > 5 Hz rotating field frequency

HF drive controllers 0.37 to 37 kW (CDA-HF)
I/I_N = **1.8** for 30 s at 4/8/12/16 kHz

HF drive controllers 2 to 32 A (CDD-HF)
I/I_N = **1.8** for 30 s at 4/8/12/16 kHz

HF drive controllers 17 to 32 A (CDS)
I/I_N = **1.3** at 64 kHz / **1.6** at 32 kHz
(for 30s respectively)

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

HF drive controllers 2.4 A to 32 A (CDA/CDD)
I/I_N = **1.8** for 30 s at 4 kHz
I/I_N = **1.25 - 1.8** for 30 s at 8 kHz

HF drive controllers 45 to 72 A (CDA)
I/I_N = **2.0** for 3 s at 4/8 kHz

HF drive controllers 17 to 32 A (CDS)
I/I_N = **1.3** at 64 kHz / **1.6** at 32 kHz
(for 30s respectively)

HF drive controllers for 230 V systems

CDA/CDD3000-HF Modules	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]
CDD 32.003,Cx.x,HF	4	2.4	4.3	4.3
	8	2.4	4.3	4.3
	12	2.1	3.75	3.75
	16	1.8	3.2	3.2
CDA/CDD 32.004,Cx.x,HF[1)]	4	4	7.2	7.2
	8	4	7.2	7.2
	12	3.5	5.7	6.3
	16	3	5.4	5.4
CDA/CDD 32.006,Cx.x,HF[1)]	4	5.5	9.9	9.9
	8	5.5	9.9	9.9
	12	4.9	7.1	8.8
	16	4.3	7.7	7.7
CDA/CDD 32.008,Cx.x,HF[1)]	4	7.1	12.8	12.8
	8	7.1	12.8	12.8
	12	6.3	9.1	11.3
	16	5.5	8	9.9

Cooling air temperature: 45°C at power stage switching frequency 4 kHz
40°C at power stage switching frequency 8,12,16 kHz

1) With heat sink HS3 ... or additional cooling surface

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

Drive controllers for 400/460 V systems:

CDA/CDD3000-HF Modules	Switching frequency of power stage [kHz]	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]	Peak current for intermittent mode > 5 Hz [A]
CDA/CDD 34.003,Cx.x,HF	4	2.2	2.2	4	4
	8	2.2	2.2	4	4
	12	1.6	1.6	1.8	2.9
	16	1.0	1.0	1.1	1.8
CDA/CDD 34.005,Wx.x,HF	4	4.1	4.1	7.4	7.4
	8	4.1	3.6	7.4	7.4
	12	3.2	-	5.8	5.8
	16	2.4	-	4.3	4.3
CDA/CDD 34.006,Wx.x,HF	4	5.7	5.7	10.3	10.3
	8	5.7	5.7	10.3	10.3
	12	4.1	-	7.4	7.5
	16	2.6	-	4.7	4.7
CDA/CDD 34.008,Wx.x,HF	4	7.8	7.8	14	14
	8	7.8	7.8	14	14
	12	6.4	-	9.9	11.5
	16	5	-	7.8	9
CDA/CDD 34.010,Wx.x,HF	4	10	10	18	18
	8	10	8.8	16.5	18
	12	8.1	-	10.1	14.5
	16	6.2	-	7.8	11
CDA/CDD 34.014,Wx.x,HF	4	14	14	25	25
	8	14	12.2	25	25
	12	10.3	-	14.4	18.4
	16	6.6	-	11.9	11.9
CDA/CDD 34.017,Wx.x,HF	4	17	17	31	31
	8	17	13.5	31	31
	12	12.5	-	14.4	22.5
	16	8	-	14.4	14.4
CDA/CDD 34.024,Wx.x,HF	4	24	24	43	43
	8	24	24	40	43
	12	19.5	-	28.3	35
	16	15	-	22	27
CDA/CDD 34.032,Wx.x,HF	4	32	32	58	58
	8	32	28	40	58
	12	26	-	29.1	47
	16	20	-	22	36
CDA34.045.Wx.x,HF	4	45	45	68	68
	8	45	39	54	68
CDA34.060.Wx.x,HF	4	60	60	90	90
	8	60	52	71	90
CDA34.072.Wx.x,HF	4	72	72	112	112
	8	72	62	78	112

Cooling air temperature: 45°C at power stage switching frequency 4 kHz
40°C at power stage switching frequency 8,12,16 kHz

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

CDS4000 Modules					
CDS44.017	32	17	17	27.2	27.2
	64			22	22
CDS44.032	32	32	32	51.2	51.2
	64			41.6	41.6

Cooling air temperature 40°C at power stage switching frequency 32 kHz,64 kHz
Water cooling

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

CDA/CDD-HF drive controllers 0.375 to 0.75 kW (BG1 + 2)

Type CDA/CDD32.004.C1.0,HF

CDA/CDD3 ☐.☐☐☐, ☐x.x,HF

- Technical data
- Cooling method
- Version

Order code

For complete ordering data please refer to the following tables.

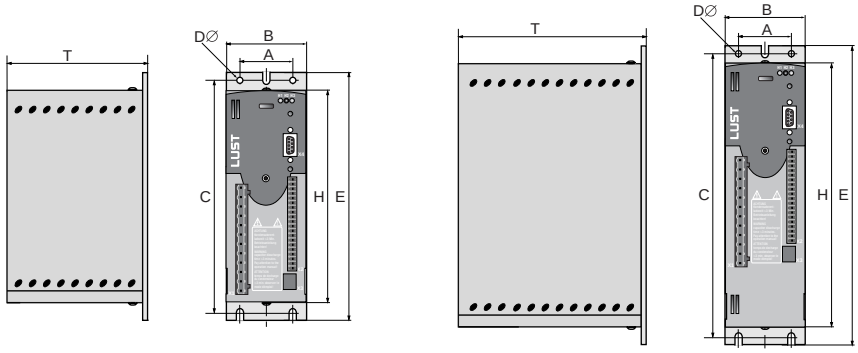
Tech. data	CDD32.003.HF	CDA/CDD32.004.HF	CDA/CDD34.003.HF
Output, motor side			
Recommended rated power with 4-pole Standard motor	0.375 kW	0.75 kW	0.75 kW
Device rated power	1.0 kVA	1.6 kVA	1.5 kVA
Voltage	3 x 0 ... 230 V		3 x 0 ... 400/460 V[1)]
Effective rated current (I_N at 4/8 kHz)	2.4 A	4.0 A	2.2 A
Peak current for 30 s	4.3 A[2)]	7.2 A[2)]	4.0 A[2)]
Rotating field frequency	CDA 0 ... 1700 Hz, CDD 0 ... 1600 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	1 x 230 V -20% +15%		3 x 460 V -25% +10%
Asymmetry of mains voltage	-	-	±3% max.
Frequency	50/60 Hz ±10%		
Power loss 4 (8,12,16) kHz CDD Power loss 4 (8,12,16) kHz CDA	49 (52) W 35 (30) W	63 (70) W 48, 55 W	70 (85) 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

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

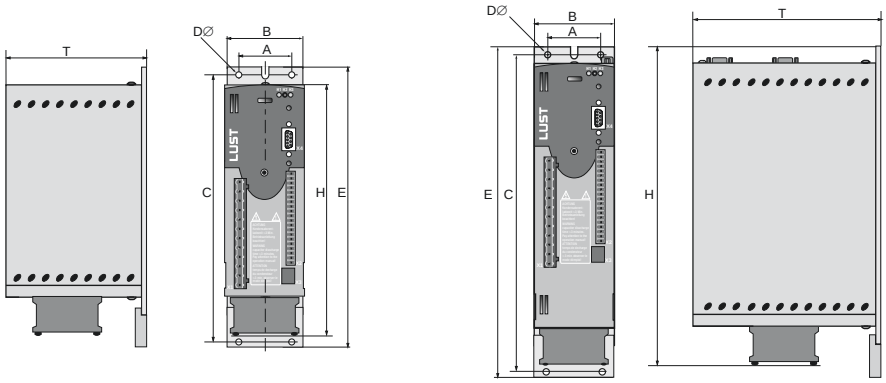
Cooling method	CDA32.004.Cx.x,HF	CDA34.003.Cx.x,HF
Protection	IP20	
Cooling air temperature	45°C (at 4 kHz switching frequency of power stage)	
Weight	1.6 kg	2.3 kg
Single mounting	Additional cooling via mounting plate (unvarnished) of 0.065/0.3 m²	
End-to-end mounting of multiple HF drive controllers	with accessories HS32.1BR, HS32.100	with accessory HS32.200 or HS34.2BR
Dimensions	**BG1 [mm]**	**BG2 [mm]**
W (width)	70	70
H (height)	193	218
D (depth)	120	145
A	50	50
C	205	230
E	215	240
D ∅	∅ 4.8	∅ 4.8

Dimensional drawings



Cooling method	CDD32.003.Cx.x,HF	CDD32.004.Cx.x,HF	CDD34.003.Cx.x,HF
Protection	IP20		
Cooling air temperature	45°C (at 4 kHz switching frequency of power stage)		
Weight	1.6 kg		2.3 kg
Single mounting	Additional cooling via mounting plate (unvarnished) of 0.065/0.3 m²		
End-to-end mounting of multiple HF drive controllers	with accessories HS32.1BR, HS32.100		with accessory HS32.200 or HS34.2BR
Dimensions	**BG1 [mm]**		**BG2 [mm]**
W (width)	70		70
H (height)	220		248
D (depth)	120		145
A	50		50
C	230		255
E	242		267
D ∅	4.8		4.8

Dimensional drawings



CDD-HF drive controllers 1.5 to 2.2 kW (BG2)

Type CDD32.008.C1.0,HF

CDD3 □.□□□, □x.x, HF

- Technical data
- Cooling method
- Version

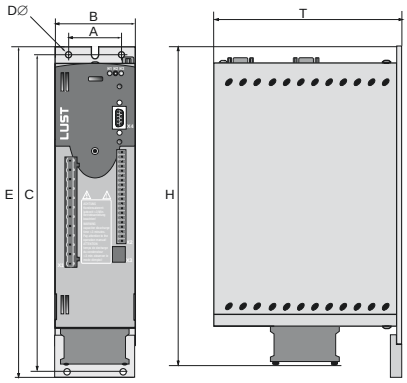
For complete ordering data please refer to the following tables.

Order code

Tech. data	CDD32.006.HF	CDD32.008.HF	CDD34.005.HF	CDD34.006.HF
Output, motor side				
Device rated power	2.2 kVA	2.83 kVA	2.84 kVA	3.94 kVA
Voltage	3 x 0 ... 230 V		3 x 0 ... 400/460 V[1)]	
Effective rated current (I_N at 4/8 kHz)	5.5 A	7.1 A	4.1 A	5.7 A
Peak current 1.8 x I_N (4.8 kHz) for 30 s	9.9 A[2)]	12.8 A[2)]	7.4 A[2)]	10.3 A[2)]
Rotating field frequency	0 ... 1600 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	1 x 230 V -20% +15%		3 x 460 V -25% +10%	
Asymmetry of mains voltage	-	-	±3% max.	
Frequency	50/60 Hz ±10%			
Power loss 4 (8, 12, 16) kHz	90 (97) W	110 (120) W	95 (127) W	121 (163) W
Braking chopper power electronics				
Peak braking power with int. braking resistor (only with version CDA/CDD34 ..., Wx.x, BR)	-	-	-	1.6 kW at 360 Ω
Minimum ohmic resistance of an externally installed braking resistor	56 Ω	56 Ω	180 Ω	180 Ω

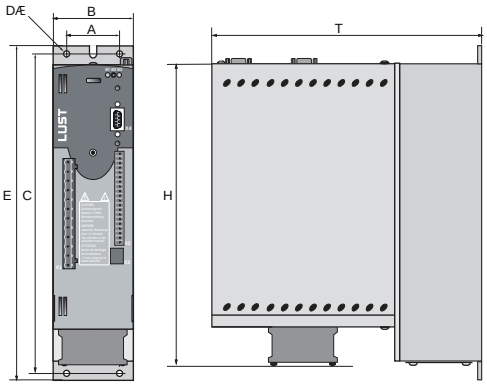
1) Permissible currents at 460 V are documented on pages 2-2 and 2-3
2) For further current data see pages 2-2 and 2-3

Cooling method	CDD32.006. C x.x,HF	CDD32.008. C x.x,HF	CDD34.005. C x.x,HF	Dimensional drawing
Mechanism				
Protection	IP20			
Cooling air temperature	45°C (at 4 kHz switching frequency of power stage)			
Weight	2.3 kg			
Single mounting	Additional cooling via mounting plate (unvarnished) of 0.065/0.3 m²			
Dimensions	**BG2 [mm]**			
W (width)	70			
H (height)	248			
D (depth)	145			
A	50			
C	260			
E	270			
D ∅	4.8			



Vertical mounting, wall mounting

Cooling method	CDD34.006. W x.x,HF	Dimensional drawing
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)	248	
D (depth)	220	
A	50	
C	260	
E	270	
D ∅	4.8	



Vertical mounting, wall mounting

Version	Characteristic
CDD34.006.Wx.x,HF,BR	Internal braking resistor

CDA-HF drive controllers 1.5 to 2.2 kW (BG2)

Type CDA34.005.C1.0,HF

CDA3 ☐.☐☐☐, ☐x.x,HF

- Technical data
- Cooling method
- Version

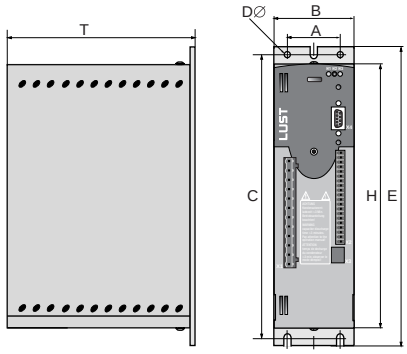
For complete ordering data please refer to the following tables.

Tech. data	CDA32.006.HF	CDA32.008.HF	CDA34.005.HF	CDA34.006.HF
Output, motor side				
Recommended rated power with 4-pole Standard motor	1.1 kW	1.5 kW	1.5 kW	2.2 kW
Device rated power	2.2 kVA	2.8 kVA	2.8 kVA	3.9 kVA
Voltage	3 x 0 ... 230 V		3 x 0 ... 400/460 V[1)]	
Effective rated current (I_N at 4/8 kHz)	5.5 A	7.1 A	4.1 A	5.7 A
Peak current 1.8 x I_N (4/8 kHz) for 30 s	9.9 A[2)]	12.8 A[2)]	7.4 A[2)]	10.3 A[2)]
Rotating field frequency	0 ... 1700 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	1 x 230 V -20% +15%		3 x 460 V -25% +10%	
Asymmetry of mains voltage	-	-	±3% max.	
Frequency	50/60 Hz ±10%			
Power loss 4 (8, 12, 16) kHz	75/(82) W	95 (105) W	80 (112) W	106 (148) W
Braking chopper power electronics				
Peak braking power with int. braking resistor (only with version CDA/CDD34 ..., Wx.x, BR)				1.6 kW at 360 Ω
Minimum ohmic resistance of an externally installed braking resistor	56 Ω	56 Ω	180 Ω	180 Ω

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

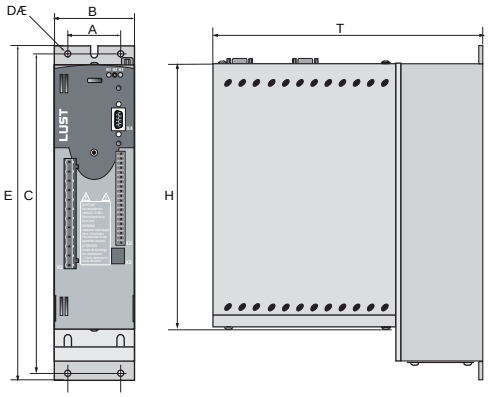
2) For further current data see pages 2-2 and 2-3

Cooling method	CDA32.006.C, HF	CDA32.008.C, HF	CDA34.005.C, HF	Dimensional drawing
Mechanism				
Protection	IP20			
Cooling air temperature	45°C (at 4 kHz switching frequency of power stage)			
Weight	2.3 kg			
Mounting type				
Single mounting	Additional cooling via cabinet mounting plate (unvarnished) of 0.3 m²			
End-to-end mounting of multiple drive controllers	Only with accessory HS32.200 or HS32.2BR		Only with accessory HS32.200/ HS34.2BR	
Dimensions	**BG2 [mm]**			
W (width)	70			
H (height)	218			
D (depth)	145			
A	50			
C	230			
E	240			
D	∅ 4.8			



Vertical mounting, cold plate

Cooling method	CDA 34,006,Wx.x,HF
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)	240
D (depth)	220
A	40
C	260
E	270
D	∅ 4.8



Vertical mounting, wall mounting

Version	Characteristic
CDA34.006,Wx.x,HF,BR	Internal braking resistor

Note: For the associated heat sinks refer to page 3-16.

CDA/CDD-HF drive controllers 3.0 to 4.0 kW (BG3)

Type CDA/CDD34.008.W1.0,HF

CDA/CDD3 ☐.☐☐☐, ☐x.x,HF

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

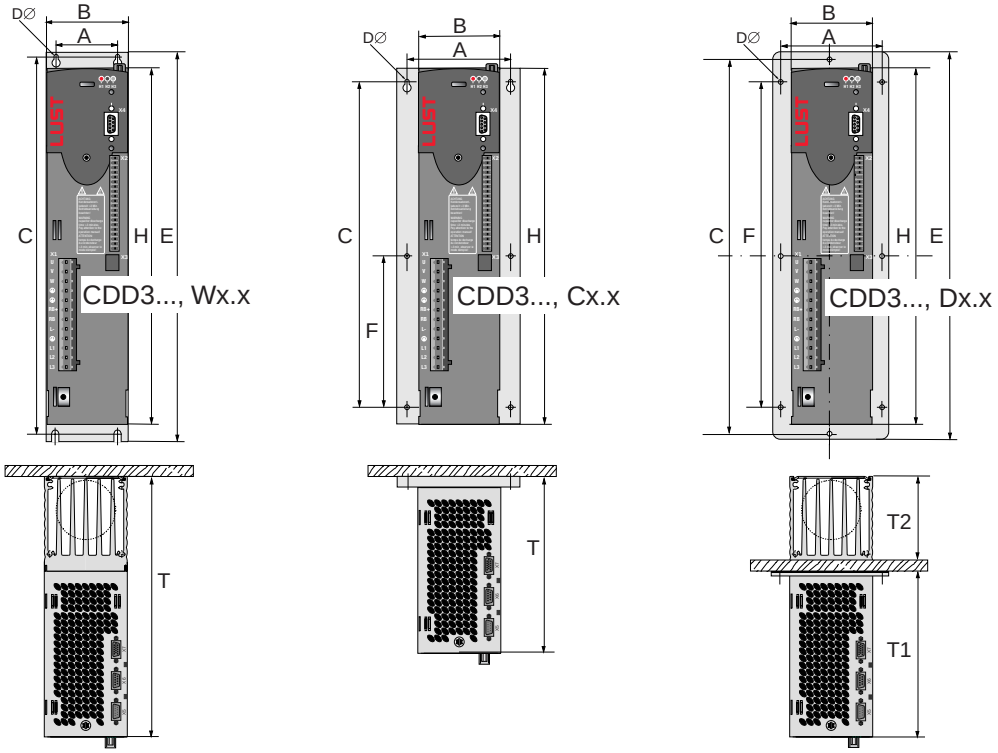
Tech. data	CDA/CDD34.008.HF	CDA/CDD34.010.HF
Output, motor side		
Recommended rated power with 4-pin Standard motor	3.0 kW	4.0 kW
Device rated power (400 V)	5.4 kVA	6.9 kVA
Voltage	3 x 0 ... 400/460 V[1)]	
Effective rated current (I_N at 4/8 kHz)	7.8 A	10 A
Peak current 1.8 x I_N (4 kHz) for 30 s	14 A[2)]	18 A[2)]
Rotating field frequency	CDA 0 ... 1700 Hz, CDD 0 ... 1600 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%
Asymmetry	±3% max.	
Frequency	50/60 Hz ±10%	
Power loss 4 (8, 12, 16) kHz	CDA 135 (162) W CDD 150 (177) W	CDA 172 (207) W CDD 187 (222) W
Braking chopper power electronics		
Peak braking power with int. braking resistor (only with version CDA/CDD34 ..., 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) 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

	CDA/CDD34 ...,Wx.x,HF	CDA/CDD34 ...,Cx.x,HF	CDA/CDD34 ...,Dx.x,HF
Cooling method	**Wall mounting**	**Cold plate**	**Push-through heat sink**
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting on mounting plate or cooling section	Vertical mounting, heat sink pushed through mounting plate
Protection	IP20	IP20	IP20 (device) IP54 (heat sink side)
Cooling air temperature	45°C (at 4 kHz switching frequency of power stage)		
Weight	4.4 kg	3.2 kg	4.6 kg
Dimensions	**BG3 [mm]**	**BG3 [mm]**	**BG3 [mm]**
W (width)	70	70 (100)	70 (110)
H (height)	300	300	300
D (depth)	218	150	T1 138, T2 80
A	40	85	90
C	320	200	320
D	∅ 4.8	∅ 5.5	∅ 4.8
E	330	--	340
F	--	100	200

Dimensional drawings



Version	Characteristic
CDA/CDD34.xxx,HF,BR	Internal braking resistor only for devices with **CDA/CDD34 ...., Wx.x** or **CDA/CDD34 ...., Dx.x cooling method**

CDA/CDD-HF drive controllers 5.5 to7.5 kW (BG4)

Type CDA/CDD34.014.W1.0,HF

CDA/CDD3 ☐.☐☐☐, ☐x.x, HF

- Technical data
- Cooling method
- Version

For complete ordering data please refer to the following tables.

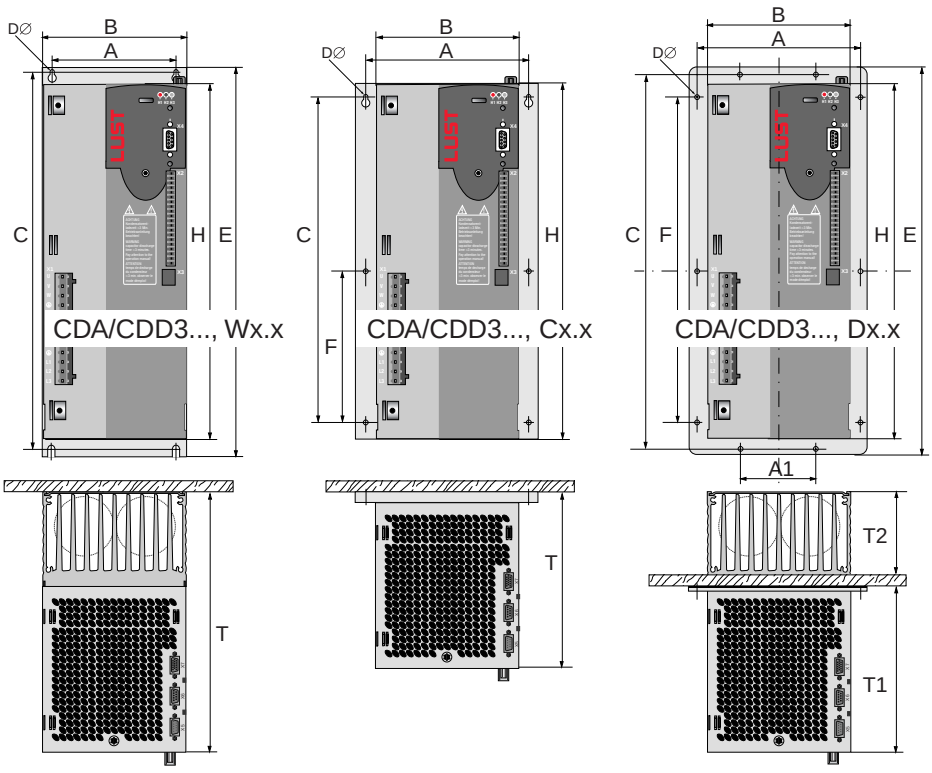
Tech. data	CDA/CDD34.014.HF	CDA/CDD34.017.HF
Output, motor side		
Recommended rated power with 4-pin Standard motor	5.5 kW	7.5 kW
Device rated power (400 V)	9.7 kVA	11.8 kVA
Voltage	3 x 0 ... 400/460 V[1)]	
Effective rated current (I_N at 4/8 kHz)	14 A	17 A
Peak current 1.8 x I_N for 30 s	25 A[2)]	31 A[2)]
Rotating field frequency	CDA 0 ... 1700 Hz, CDD 0 ... 1600 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%
Asymmetry of mains voltage	±3% max.	
Frequency	50/60 Hz ±10%	
Power loss 4 (8, 12, 16) kHz	CDA 210 (268) W CDD 225 (283) W	CDA 255 (325) W CDD 270 (340) W
Braking chopper power electronics		
Peak braking power with int. braking resistor (only with version CDA/CDD3 ...,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) 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

	CDA/CDD3...,Wx.x,HF	CDA/CDD3...,Cx.x,HF	CDA/CDD3...,Dx.x,HF
Cooling method	**Wall mounting**	**Cold plate**	**Push-through heat sink**
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting on mounting plate or cooling section	Vertical mounting, heat sink pushed through mounting plate
Protection	IP20	IP20	IP20 (device) IP54 (heat sink side)
Cooling air temperature	45°C (at 4 kHz switching frequency of power stage)		
Weight	6.5 kg	5.2 kg	6.7 kg
Dimensions	**BG4 [mm]**	**BG4 [mm]**	**BG4 [mm]**
W (width)	120	120 (150)	120 (160)
H (height)	300	300	300
D (depth)	218	150	T1 138, T2 80
A	80	135	A 140, A1 80
C	320	200	320
D	∅ 4.8	∅ 5.5	∅ 4.8
E	330	--	340
F	--	100	200

Dimensional drawings



Version	Characteristic
CDA/CDD34.xxx,HF,BR	Internal braking resistor only for devices with **CDA/CDD34 ...., Wx.x** or **CDA/CDD34 ...., Dx.x** cooling method

CDA/CDD-HF drive controllers 11 to 15 kW (BG5)

Type CDA/CDD34.024.W1.0,HF

CDA/CDD3 ☐.☐☐☐, ☐x.x, **HF**

Technical data

Cooling method

Version

For complete ordering data please refer to the following tables.

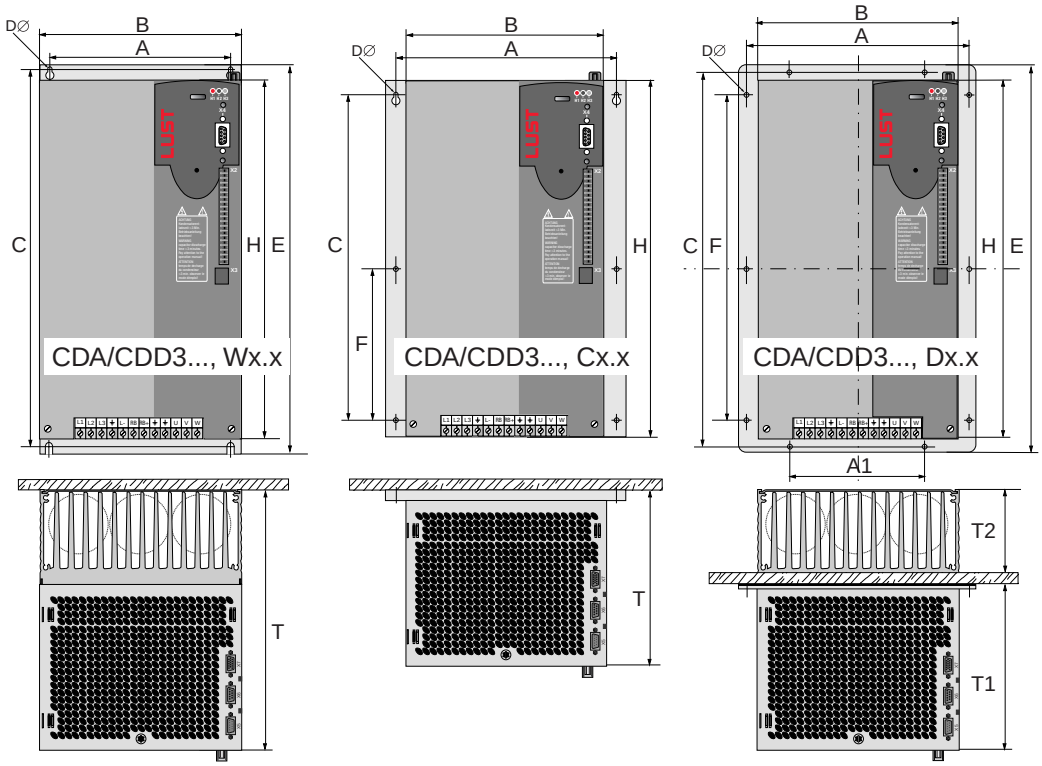
Tech. data	CDA/CDD34.024.HF	CDA/CDD34.032.HF
Output, motor side		
Recommended rated power with 4-pin Standard motor	11 kW	15 kW
Device rated power (400V)	16.6 kVA	22.2 kVA
Voltage	3 x 0 ... 400/460 V[1)]	
Effective rated current (I_N at 4/8 kHz)	24 A	32 A
Peak current 1.8 x I_N (4 kHz) for 30 s	43 A[2)]	58 A[2)]
Rotating field frequency	CDA 0 ... 1700 Hz, CDD 0 ... 1600 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%
Asymmetry of mains voltage	±3% max.	
Frequency	50/60 Hz ±10%	
Power loss 4 (8, 12, 16) kHz	CDA 315 (400) W CDD 330 (415) W	CDA 400 (510) W CDD 415 (525) W
Braking chopper power electronics		
Peak braking power with int. braking resistor (only with version CDA/CDD3 ...,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) 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

	CDA/CDD3 ...,Wx.x,HF	CDA/CDD3 ...,Cx.x,HF	CDA/CDD3 ...,Dx.x,HF
Cooling method	**Wall mounting**	**Cold plate**	**Push-through heat sink**
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting, on mounting plate or cooling profile section	Vertical mounting, heat sink pushed through mounting plate
Protection	IP20	IP20	IP20 (device) IP54 (heat sink side)
Cooling air temperature	45°C (at 4 kHz switching frequency of power stage)		
Weight	7.2 kg	6.4 kg	7.4 kg
Dimensions	**BG5 [mm]**	**BG5 [mm]**	**BG5 [mm]**
W (width)	170	170 (200)	170 (210)
H (height)	300	300	300
D (depth)	218	150	T1 138, T2 135
A	130	185	A 190, A1 100
C	320	200	320
D	∅ 4.8	∅ 5.5	∅ 4.8
E	330	--	340
F	--	100	200

Dimensional drawings



Version	Characteristic
CDA/CDD34.xxx,HF,BR	Internal braking resistor only for devices with cooling method **CDA/CDD34 ...., Wx.x** or **CDA/CDD34 ...., Dx.x**

CDA-HF drive controllers 22 to 37 kW (BG6)

Type CDA34.045.W1.0,HF

CDA ☐.☐☐☐, ☐x.x, HF

Technical data

Cooling method

Version

For complete ordering data please refer to the following tables.

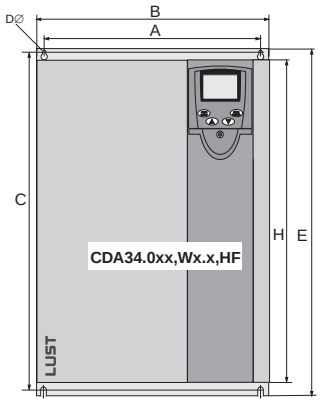
Tech. data	CDA34.045.HF	CDA34.060.HF	CDA34.072.HF
Output, motor side			
Device rated power (400V)	32.8 kVA	43.8 kVA	52.5 kVA
Voltage		3 x 0 ... 400/460[1)]	
Effective rated current (I_N at 4/8 kHz)	45 A	60 A	72 A
Peak current 1.5 x I_N (4 kHz) for 60 s	68 A[2)]	90 A[2)]	112 A[2)]
Rotating field frequency		0 ... 1000 Hz	
Switching frequency of power stage		**4**, 8 kHz (factory setting 4 kHz)	
Input, mains side			
Mains voltage		3 x 460 V -25% +15%	
Asymmetry of mains voltage		±3% max.	
Frequency		50/60 Hz ±10%	
Power loss 4 kHz	777 W	1010 W	1270 W
Power loss 8 kHz	933 W	1220 W	1530 W
Braking chopper power electronics			
Minimum ohmic resistance of an externally installed braking resistor	18 Ω	18 Ω	13 Ω

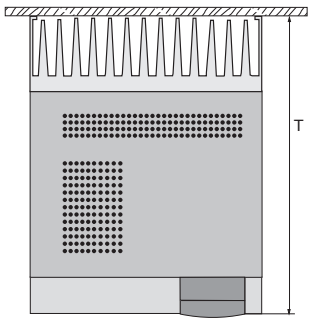
1) For permissible currents at 460 V see page 2-3

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

	CDA34.0xx,Wx.x,HF
Cooling method	**Wall mounting**
Mounting type	Vertical mounting with unhindered air flow
Protection	IP20
Cooling air temperature	40°C (at 4 kHz switching frequency of power stage)
Weight	20 kg
Dimensions	**BG6 [mm]**
W (width)	250
H (height)	345
D (depth)	325
A	215
C	360
D	∅ 6.0
E	375

Dimensional drawings





CDS4000 drive controllers 7.5 to 15 kW

Type CDS44.032. W1.0

CDS4 ☐.☐☐☐, ☐x.x, ☐☐, ... ☐☐

- Technical data
- Cooling method
- Version

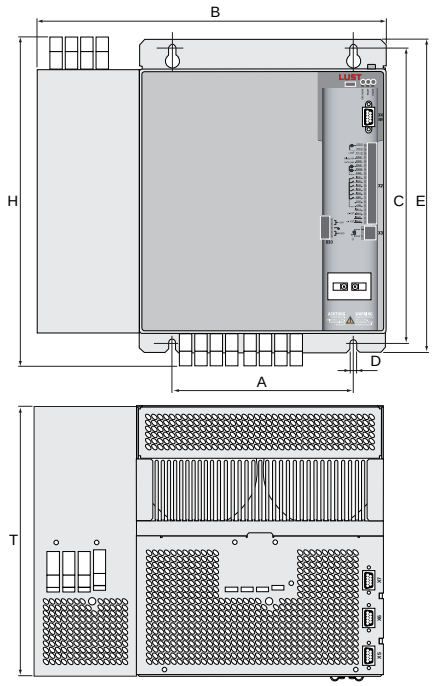
For complete ordering data please refer to the following tables.

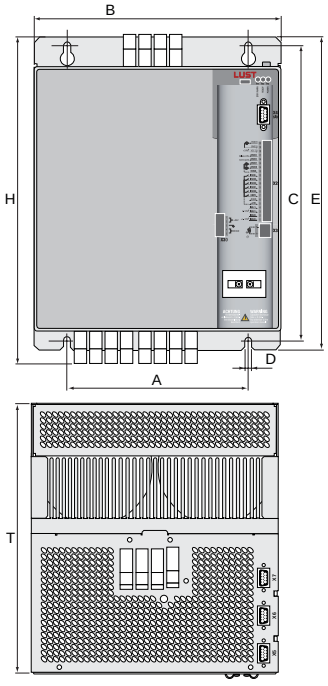
Tech. data	CDS44.017	CDS44.032
Output, motor side		
Device rated power (400 V)	11.7 kVA	22 kVA
Voltage	3 x 400/460 V	
Effective rated current (I_N at 32/64 kHz)	17 A	32 A
Peak current 1.6 x I_N (32 kHz) / 1.3 x I_N (64 kHz) for 30 s	27 A/22 A	51.2 A/41.6 A
Rotating field frequency	0 ... 4000 Hz	
Switching frequency of power stage	nominal 64 kHz	
Input, mains side		
Mains voltage	3 x 400/460 V +/- 10%	
Asymmetry of mains voltage	+/- 3%	
Frequency	50/60 Hz	
Power loss 32/64 kHz	CDS44017 330 W/450 W CDS44032 650 W/900 W	
Braking chopper power electronics		
Minimum ohmic resistance of an externally installed braking resistor	33 Ω -10%	

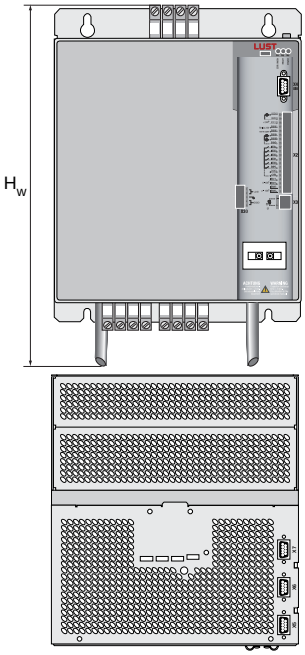
1) Observe current capacity, see Section 2, page 2-3

	CDS44.017.Wx.x,NF, CDS44.032.Wx.x,NF	CDS44.017.Wx.x, CDS44.032.Wx.x	CDS44.017.LCx.x CDS44.032.LCx.x
Cooling method	**Wall mounting**	**Wall mounting**	**Wall mounting**
Mounting type	Vertical mounting with unhindered air flow	Vertical mounting with Unhindered air flow	Vertical mounting with water cooling
Protection	IP20	IP20	IP20
Cooling air temperature	40°C (at 64 kHz switching frequency of power stage)	40°C (at 64 kHz switching frequency of power stage)	40°C (at 64 kHz switching frequency of power stage)
Weight	22.5 kg	20.5 kg	20.5 kg
Dimensions	**with built-on mains filter [mm]**	**Standard device [mm]**	**Standard device [mm]**
W (width)	245,5	346,5	245
H (height)	327	327	327
D (depth)	267.5	267.5	269
A	180	180	180
C	293	293	293
D	7	7	7
E	310	310	310

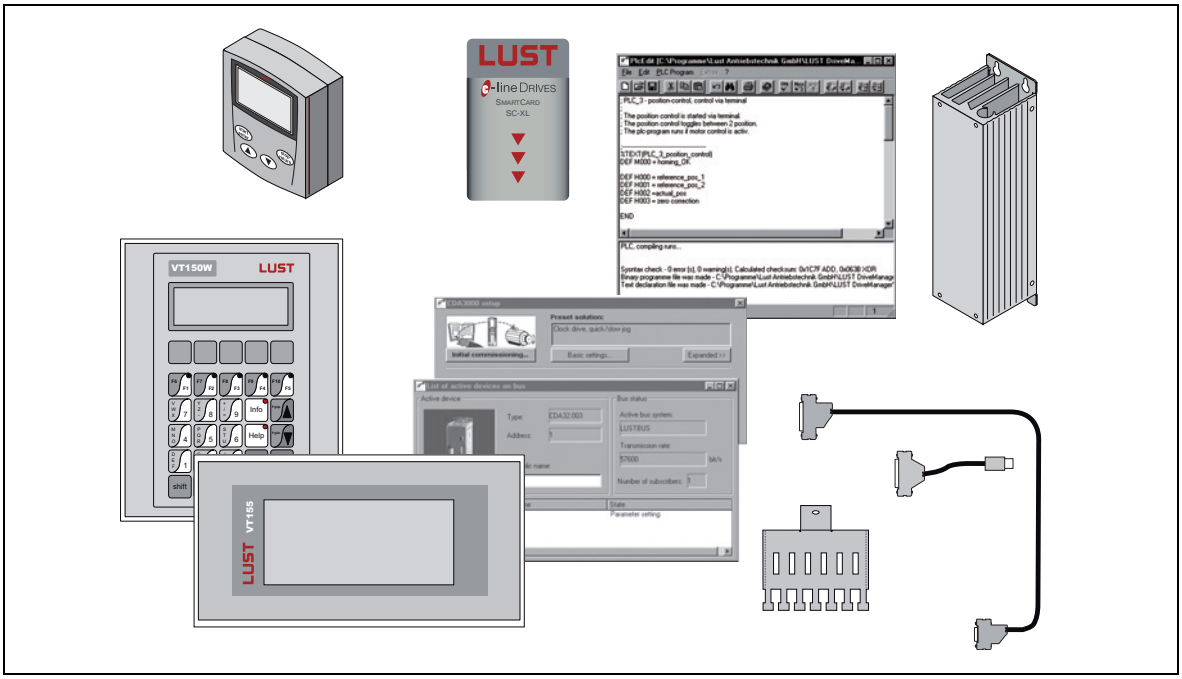
Dimensional drawing - standard device with built-on mains filter	Dimensional drawing - standard device	Dimensional drawing - standard device with water cooling







Overview of accessories for HF drive controllers



Operator module

KP 200 - XX

KEYPAD

Series

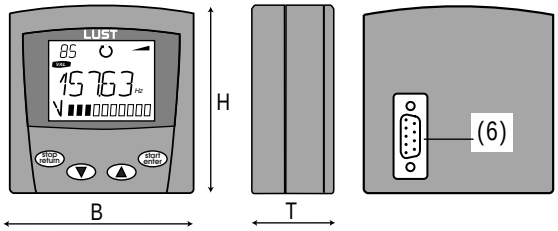
Version

KP200-XL

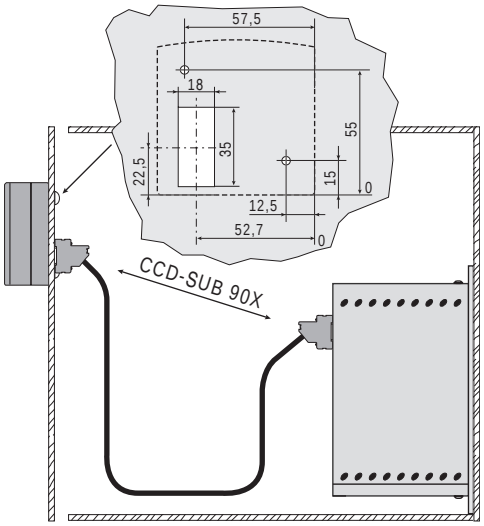
Order code

Order designation	Summary explanation
KP200-XL	KEYPAD for parameter setting, actual value display and serial commissioning of HF drive 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.

Mechanism KP200-XL	
Dimensions (see illustration)	70 x 73 x 33 mm (w x h x d)
Weight	150 g
Connection (RS232)	
Standard (6)	The KEYPAD can be plugged directly into the inverter module.



Cable connection	Installation in switch cabinet door
Connection between KP200-XL and drive controller, CDA/ CDD3000-HF or CDS4000 with 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 thermo-plastics (e.g. EJOT PT screw, type K30 x 8 WN1412).



SMARTCARD memory card

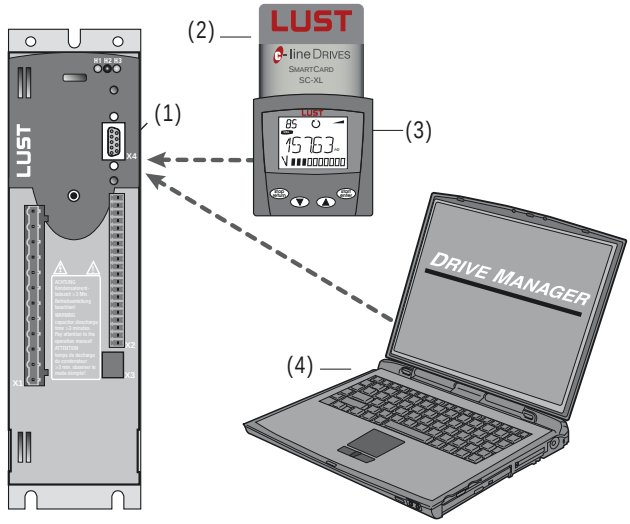
SC - XX

SMARTCARD

Memory version

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

System layout	Explanation



(1) X4 port for operator modules or PC port (RS232 interface)
(2) SMARTCARD SC/SC-XL
(3) Operator module KP200-XL
(4) PC with DRIVEMANAGER user software

Operator panels with text display

VT050

VT150W

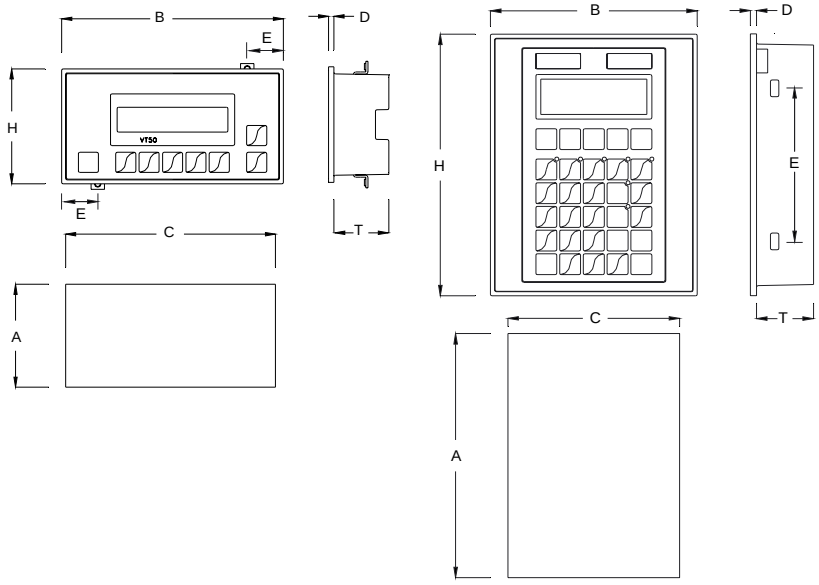
Technical data	VT050	VT150W
Voltage supply	24 VDC (18 - 32 VDC)	
Current consumption at 24 VDC	5 W	15 W
Fuse protection	315 mA (microfuse type F)	800 mA (microfuse type F)
Protection	IP65 (front panel)	
Operating temperature/storage and transport temperature	0 ... +50°C / -20° ... +60°C	
Humidity	0 ... 85%	
Quality certification/conformity	CE, NEMA12	
Dimensions (outside) w x h x d [mm]	166 x 86 x 41	148 x 188 x 41
Panel cutout w x h [mm]	157 x 77	123 x 175
Weight	0.5 kg	0.7 kg

Panel article code:	Panel features:			Panel features:		
	VT050 000 00N VT050 000 CNN			VT150W 000 00N VT150W 000 CNN		
Display						
Type	Text LCD	●	●	Text LCD	●	●
Backlighting	LED	●	●	LED	●	●
Lines x characters	2 x 20	●	●	4 x 20	●	●
View size [mm]	73.5 x 11.5	●	●	70.4 x 20.8	●	●
Character size in text mode [pixels]	5 x 7	●	●	5 x 7	●	●
Character size [mm]	3.2 x 5.5	●	●	2.95 x 4.75	●	●
Contrast control	Trimming pot	●	●	Trimming pot	●	●
Character fonts	ASCII, Katakana	●	●	ASCII, Katakana	●	●
Keypad						
System/function/alphanumeric keys	8/5/-	●	●	9/5/11	●	●
LED's for function/operation keys	-	●	●	5/2	●	●
User memory						
Project (Flash EPROM) [kB]	256 kB	●	●	256 kB	●	●
Interfaces						
Serial MSP, 25 pin female	RS232		●	RS232		●
Serial ASP, 8 pin female (for programming only)	RS232	●		RS232	●	
Networks						
Built-in	CAN_{open}	●		CAN_{open}	●	
Properties						
Project languages	4	●	●	6	●	●

Panel article code:	Panel features:			Panel features:		
	VT050 000 00N VT050 000 CNN			VT150W 000 00N VT150W 000 CNN		
Password level/password bits	-/8 bit	●	●	10/8 bit	●	●
Pages/variables per page	127/8	●	●	1024/30	●	●
Variable format	DEC, HEX, BIN, BCD, ASCII, Floating Point	●	●	DEC, HEX, BIN, BCD, ASCII, Floating Point	●	●
Dynamic texts	depending on the size of the project memory	●	●	depending on the size of the project memory	●	●
ISA alarms/info messages	-/128	●	●	-/1024	●	●
Message help (pages/info messages/alarms)	127/128/-	●	●	1024/1024/-	●	●
Automatic operations	16	●	●	16	●	●
Timer (time base 100 ms)	16	●	●	16	●	●
Equations	32	●	●	32	●	●

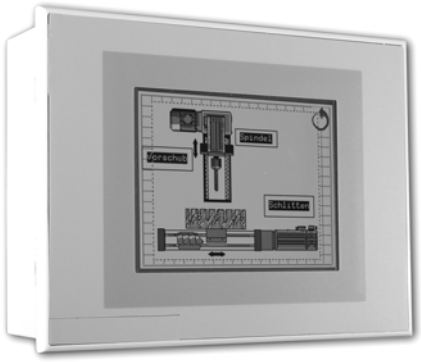
Dimensions	VT050	VT150W
W (width)	166 mm	148 mm
H (height)	86 mm	188 mm
D (depth)	41 mm	41 mm
Panel cutout A (height)	77 mm	175 mm
Panel cutout C (width)	157 mm	123 mm
D	4 mm	4.5 mm
E	27 mm	110 mm

Drawing



Operator panels with touch-screen

VT155W



VT505W

Technical data	VT155W*	VT505W
Voltage supply	24 VDC (18 - 32 VDC)	
Current consumption at 24 VDC	10 W	10 W
Fuse protection	800 mA (microfuse type F)	
Protection/quality certification, conformity	IP65 (front panel/CE, NEMA1 + 2	
Operating temperature/storage and transport temperature	0 ... +50°C / -20° ... +60°C	
Humidity	0 ... 85%	
Dimensions (outside) w x h x d [mm]	166 x 100 x 39.6	210 x 158 x 54
Panel cutout w x h [mm]	157 x 91 (91 x 157)*	198 x 148
Weight	0.5 kg	1.4 kg

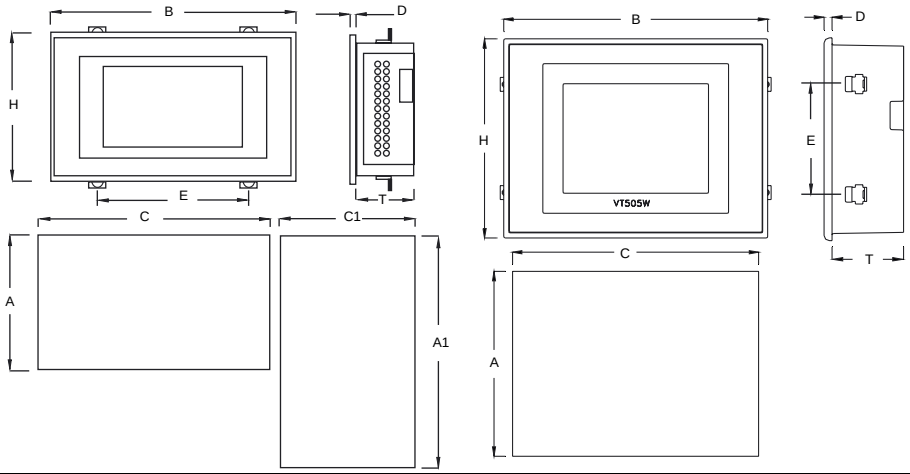
* The VT155W can be installed and programmed in either horizontal or vertical positions.

Panel article code:	Panel features:			Panel features:		
	VT155 000 00N VT155 000 CNN			VT505W 000 00N VT505W 000 CNN		
Display						
Type	Graph LCD, 4 grey tones STN	●	●	Graph LCD, 4 blue tones STN	●	●
Touch-screen	analogue/20x8 (12x16 pixels)	●	●	Matrix 20 x 16	●	●
Backlighting	LED	●	●	CCFL tube	●	●
Service life [std.)	-	●	●	15000	●	●
Resolution	240x128 pixels (4")	●	●	320 x 240 pixels (5.7")	●	●
Lines x characters	horizontal 16x40/8x20/4x10 vertical 21x30/10x15/5x7	●	●	16x40/8x20/4x10	●	●
View size [mm]	94.5 x 54.5	●	●	115.2 x 86.4	●	●
Character size in text mode [pixels]	6x8/12x16/24x32	●	●	8x15/16x30/32x60	●	●
Character size [mm] x1/x2/x4	2.3x5.2/4.6x5.8/9.1x11.7	●	●	2.8x5.2/5.6x10.4/11.2x20.8	●	●
Contrast control	Software	●	●	Software	●	●
Character fonts	prog. fonts/TTF Windows®	●	●	prog. fonts/TTF Windows®	●	●
User memory						
Project (text + image)	640 KB	●	●	640 KB	●	●
Data memory (Flash EPROM)	16 KB + 8 KB (Alarms)	●	●	16 KB	●	●
Interfaces						
Serial MSP (25 pin female)	RS232		●	RS232	●	●
Serial ASP, 8 pin female (for programming only)	RS232	●	●	-		-
Networks						
Built-in	CAN_{open}	●		CAN_{open}	●	

Panel article code:	Panel features:			Panel features:		
	VT155 000 00N VT155 000 CNN	↓	↓	VT505W 000 00N VT505W 000 CNN	↓	↓
Properties						
Project languages	4	●	●	4	●	●
Password level/bit password	10/8 bit	●	●	10/8 bit	●	●
Pages/variables per page	64/32	●	●	128/34	●	●
Variable format	DEC, HEX, BIN, BCD, ASCII, Floating Point	●	●	DEC, HEX, BIN, BCD, ASCII, Floating Point	●	●
Dynamic texts/image lists	depending on the size of the project memory	●	●	depending on the size of the project memory	●	●
ISA alarms/info messages	256/256	●	●	-/256	●	●
Message help (pages/info messages/alarms)	64/256/256	●	●	128/256/-	●	●
Alarm buffer	220	●	●	-	●	●
Macros (total, commands per macro)	1024/16	●	●	1024/16	●	●
Print pages (total/fields per page)	64/128	●	●	-	●	●
Automatic operations	16	●	●	16	●	●
Timer (time base 100 ms)	16	●	●	16	●	●
Equations	32	●	●	32	●	●
Bar graph per page	32	●	●	34	●	●
Buttons per page	24	●	●	24	●	●
Hardware clock	with backup capacitor	●	●	-	●	●

Dimensions	VT155W	VT505W
W (width)	166 mm	210 mm
H (height)	100 mm	158 mm
D (depth)	39.6 mm	54 mm
Panel cutout A (height)	91 mm	148 mm
Panel cutout C (width)	157 mm	198 mm
Panel cutout high A1	157 mm	-
Panel cutout high C1	91 mm	-
D	4 mm	6 mm
E	102 mm	86 mm

Drawing



Programming the operator panels

VTWIN

Program software
VT series

VTWINCD

Order code

Tech. data	VTWIN
Software features	The "VTWIN" programming software provides the following functions: - One software for all operator panels - Configuration of the RS232 port - Configuration of the CANopen network - User programming of text and graphic displays - Setting up of touch buttons (VT155W and VT505W only) - Conversion of projects between the operator panels - Free updates for new drivers and new functions
Hardware and software requirements	- Microsoft Windows® 95/98/ME or Windows® NT, 2000, XP - CD-ROM drive (recommended min. read x 24)
Supply package	- 1 CD-ROM for installing VTWIN - Hardware and software manuals
Languages	- You can choose one of five languages (German, English, French, Italian, Spanish)

Order designation	Licences
VTWIN	- Contains the full functionality for parameter-setting, control and monitoring. The software license permits simultaneous use at any number of workstations. - The current software version at the time of delivery is supplied.

Cables for operator panels

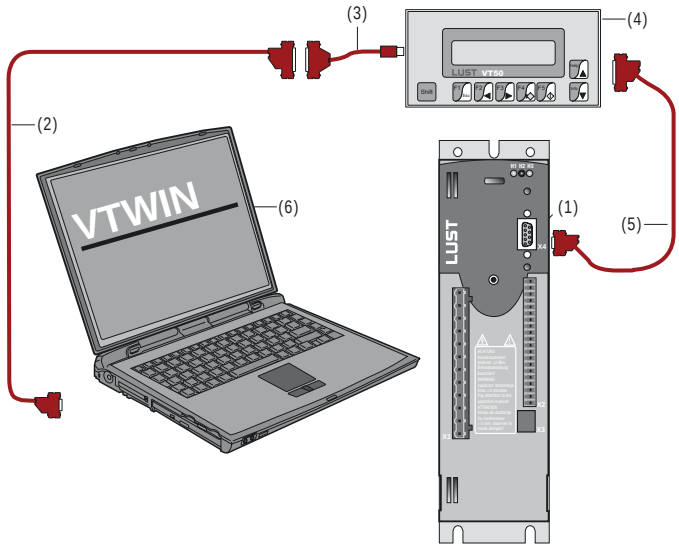
Programming cable
CVCOM 11102

Adapter for programming cable
CVCOM 25F8M

RS-232 interface cable to drive device
OPK-RS03

Order designation	Summary description	Use	
CVCOM 11102	Programming cable for connection between PC + operator panel (PC 9-pole --> MSP 25-pole)	required for operator panels	
CVCOM 25F8M	Adapter for programming cable, from PC 25-pole --> ASP 8-pole DIN circular plug (CVCOM 11102 must be fitted)	required for	- VT050 000 CNN - VT150W 000 CNN - VT505W 000 CNN - VT155W 000 00N - VT155W 000 CNN
OPK-RS03 (length = 3 m)	Serial RS232 interface cable to connect operator panel to drive device	suitable for	- VT050 000 00N - VT150W 000 00N - VT505W 000 00N - VT155W 000 00N
OPK-RS05 (length = 5 m)	Serial RS232 interface cable to connect operator panel to drive device	suitable for	- VT050 000 00N - VT150W 000 00N - VT505W 000 00N - VT155W 000 00N

System layout



Explanation

(1) X4 port for operator panel, control modules or PC (RS232 port)
(2) Programming cable CVCOM 11102
(3) Adapter for programming cable CVCOM 25F8M
(4) Operator Panel
(5) Interface cable OPK-RSXX (max. 5 m)
(6) PC with prog. software VTWIN

PC user software

DRIVEMANAGER 3.X

PC user software

Shipping status of software

DRIVEMANAGER 3.X | Order code

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 - DRIVEMANAGER manual - 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

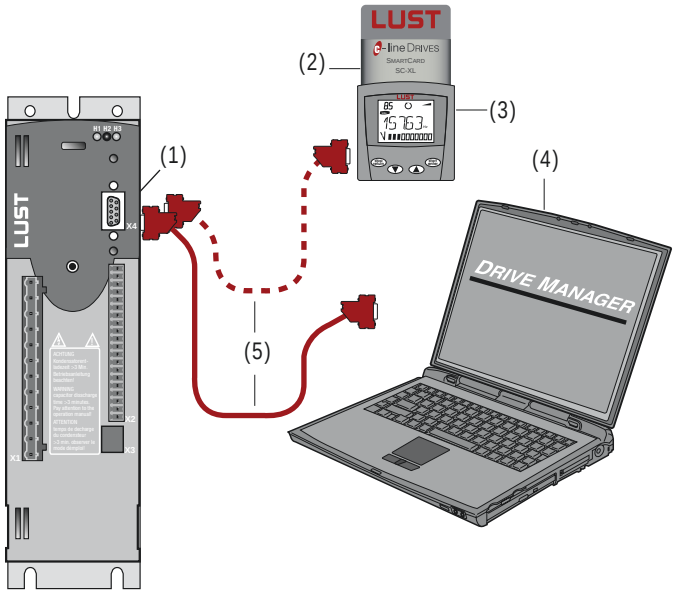
CC D-SUB 9 0x

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

Connecting cable

Order designation	Technical data
CCD-SUB 901	Cable for link between inverter module and KP200 or inverter module and PC with DRIVEMANAGER, length 1 m
CCD-SUB 902	Cable for link between inverter module and KP200 or inverter module and PC with DRIVEMANAGER, length 2 m
CCD-SUB 903	Cable for link between inverter module and KP200 or inverter module and PC with DRIVEMANAGER, length 3 m

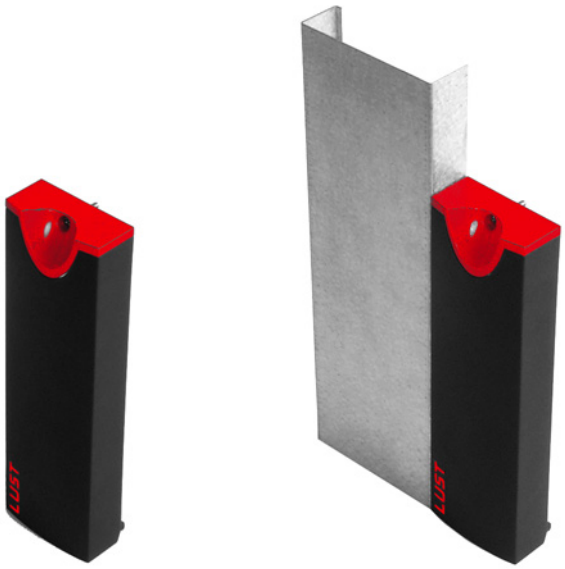
System layout



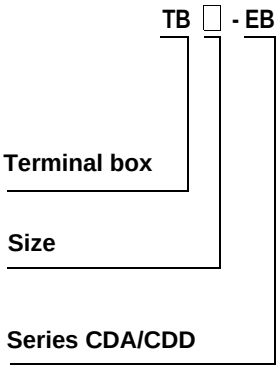
Explanation

(1) X4 port for operator modules or PC RS232 interface
(2) SMARTCARD chip card
(3) Operator module KP200
(4) PC with DRIVEMANAGER user software
(5) Connecting cable CCD-SUB90X, x.x

Terminal cover (only for CDA/CDD3000-HF)

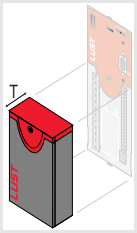
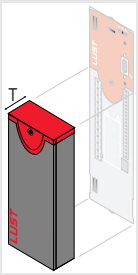
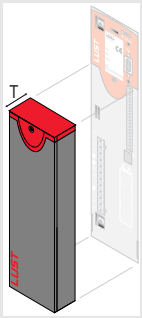
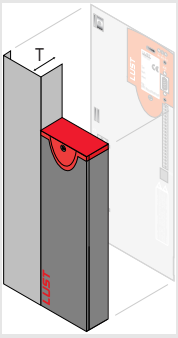
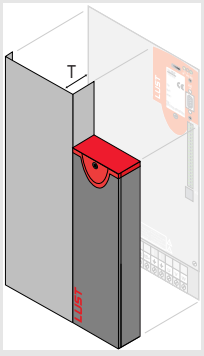


TB3

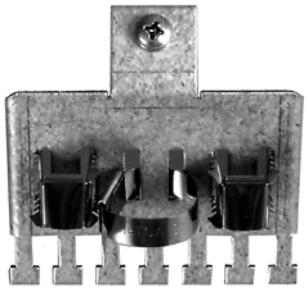


Order code

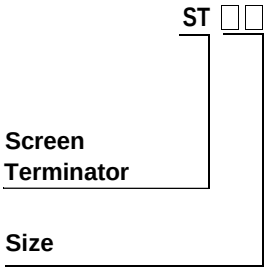
3

Order des.	TB1-EB	TB2-EB	TB3-EB	TB4-EB	TB5-EB
Suitable for drive controllers	CDA/CDD32.003.HF CDA/CDD32.004.HF	CDA/CDD32.008.HF CDA/CDD34.003.HF CDA/CDD34.005.HF CDA/CDD34.006.HF	CDA/CDD34.008.HF CDA/CDD34.010.HF	CDA/CDD34.014.HF CDA/CDD34.017.HF	CDA/CDD34.024.HF CDA/CDD34.032.HF
Power output of drive 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					

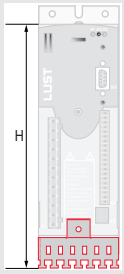
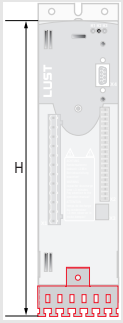
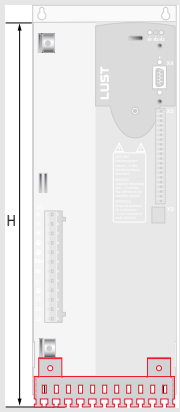
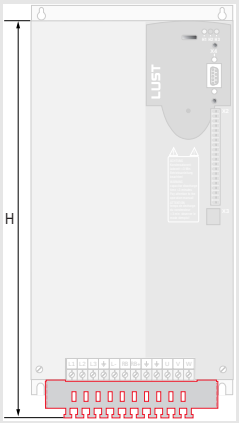
Terminal cover (only for CDA/CDD3000-HF)



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



Order code

Tech. data	ST02			ST04	ST05
Suitable for Drive controller	CDD32.003.HF CDA/CDD32.004.HF	CDA/CDD32.006.HF CDA/CDD32.008.HF CDA/CDD34.003.HF CDA/CDD34.005.HF CDA/CDD34.006.HF	CDA/CDD34.008.HF CDA/CDD34.010.HF	CDA/CDD34.014.HF CDA/CDD34.017.HF	CDA/CDD34.024.HF CDA/CDD34.032.HF
Power output of HF drive 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
H (height)	238 mm	263 mm	345 mm	345 mm	355 mm
Diagram					

Note: For size 6 HF drive controllers (cable cross-sections > 32 mm²) we recommend connecting the screens of the motor/mains lead directly to a screen rail in the cabinet.

Screen connection (only for CDS4000)

ST10 (incl. screw)

ST □□

Screen Terminator

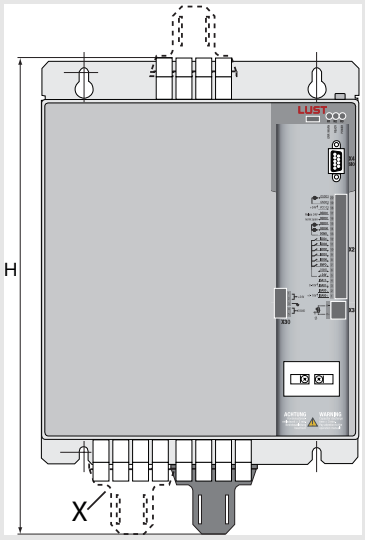
Size

Order code

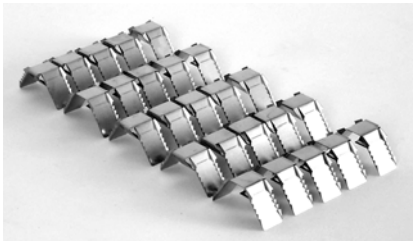
Tech. data	ST10	
Suitable for drive controllers	CDS44.017	CDS44.032
Power output of HF drive controllers	7.5 kW	15 kW
H (height)	36.5 mm	36.5 mm

Diagram

X = Two adjacent plate screens can also be mounted (e.g. for the DC link connecting cable and for the motor connecting cable)



Metal clips



SMC50

SMC □□

Shield Metal Clip

360° contacts

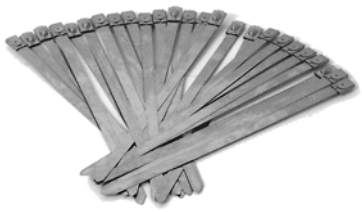
Quantity of

Packing unit

Order code

Order designation	Packing unit	Suitable for EM screen connection	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

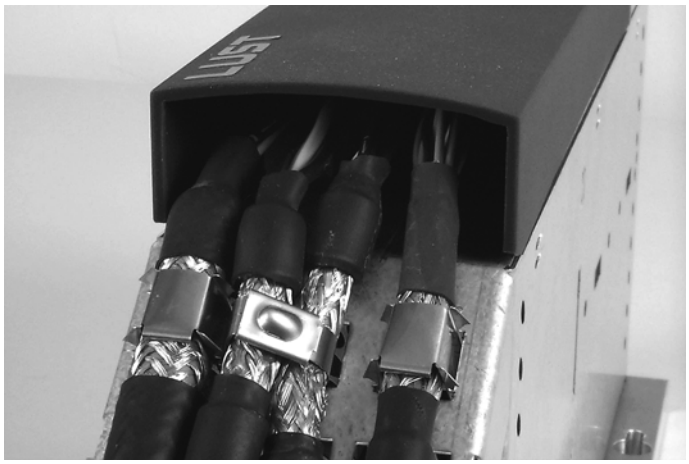
Quantity of

Packing unit

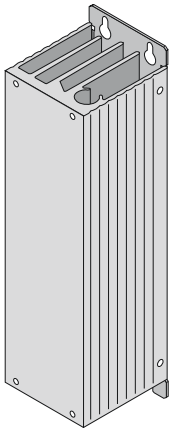
Order code

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

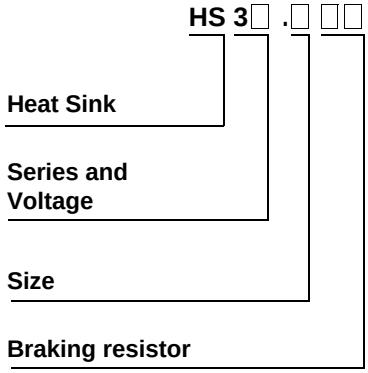
System layout



Heat sink/braking resistor for BG1 + BG2 (only for CDA/CDD-HF)



HS3X.xxx

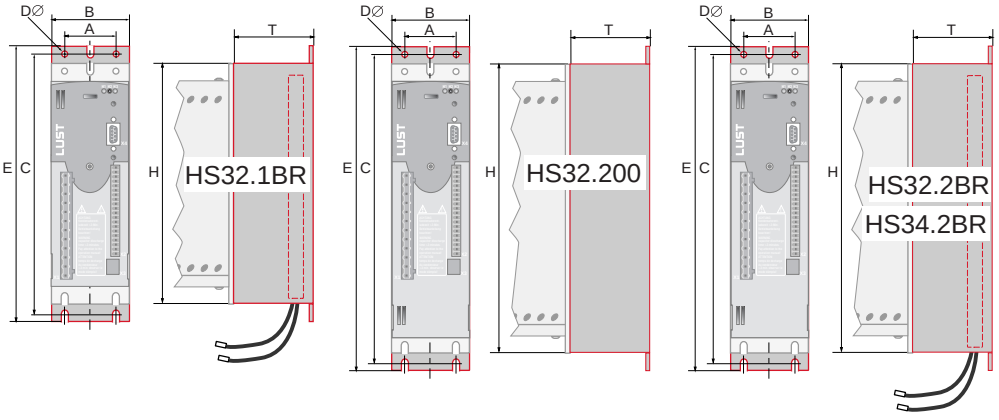


Order code

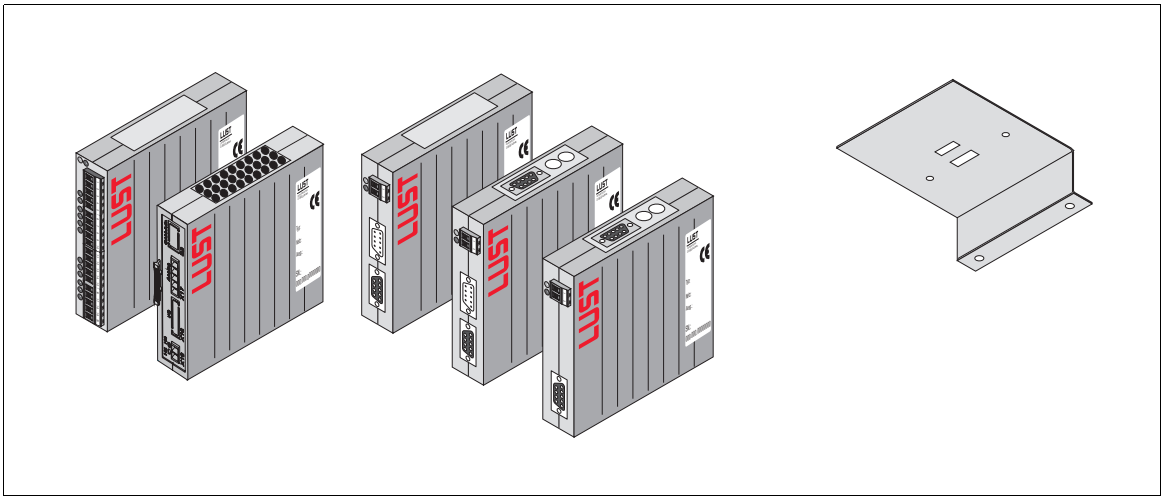
Tech. data	HS32.1BR	HS32.200	HS32.2BR	HS34.2BR
Continuous braking power when mounted on HF drive controller	CDA/CDD32.004.HF/25 W	-	CDA/CDD32.006/30 W CDA/CDD32.008/0 W	CDA/CDD34.003/35 W CDA/CDD34.005/5 W
Braking resistor	162 Ω	-	90 Ω	360 Ω
Peak braking power	0.9 kW	-	1.7 kW	1.6 kW
Heat sink for end-to-end mounting of HF drive controllers	-	CDA/CDD32.006.HF CDA/CDD32.008.HF CDA/CDD34.005.HF	-	-

Order des.	Description	Dimensions B (width) [mm]	H (height) [mm]	D (depth) [mm]	A [mm]	C [mm]	D [mm]	E [mm]
HS32.1BR	Heat sink with integr. braking resistor (230 V system)	70	215	75	40	235	∅ 4.8	245
HS32.200	Heat sink							
HS3.2BR	Heat sink with integr. braking resistor (230 V system)	70	240	75	40	260	∅ 4.8	270
HS34.2BR	Heat sink with integr. braking resistor (460 V system)							

Dimensional drawings



User and communication modules



Contents	Type	Page
User modules	UM-8I4O UM-2AO	4 - 2 4 - 3
Communication modules	CM-CAN1 CM-CAN2 CM-DPV1	4 - 4
Mounting package	MP-UMCM	4 - 6

User module (I/O expansion)

UM-8I4O

UM - □□□□

User module

Characteristic

8 I 4 O (example)

Terminal expansion by 4 outputs

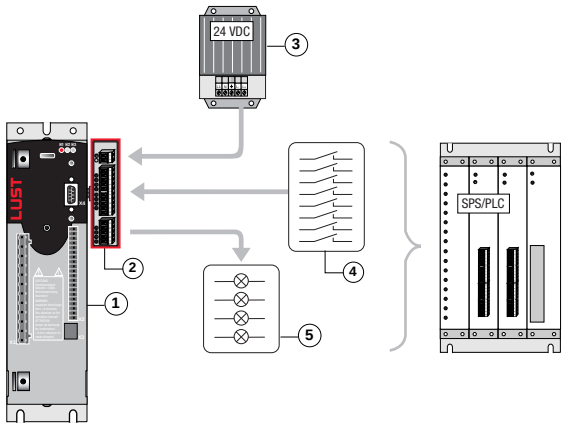
Terminal expansion by 8 inputs

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) Inverter module CDA/CDD3000-HF
(2) User module UM-8I4O
(3) External power supply 24 VDC
(4) Eight control input (programmable)
(5) Four control outputs (programmable)

User module (external analog outputs)

UM-2AO

UM - □□□□

User module

Characteristic

2 AO (e.g.)

Analog outputs

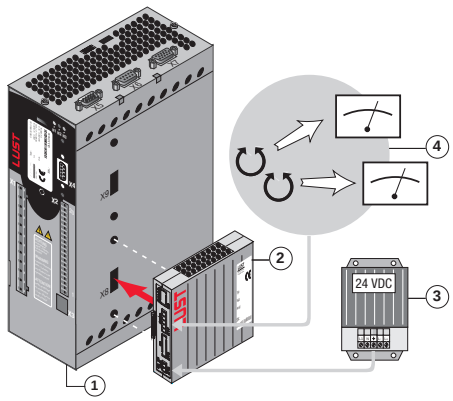
Terminal expansion by 2 outputs

Order code

Order designation	Summary explanation
UM-2AO	Terminal expansion by two analog outputs, function programmable to output current, speed, torque and position

Technical data	UM-2AO
Voltage supply	18 - 30 VDC ±20%
Current consumption	0.1 A
Resolution	10 bit
Accuracy	± 0.1% or ± 19.5 mV
Output voltage	-10 ... +10 V
Current capacity	max. 3 mA, short-circuit-proof
Filtering fixed	4. order
Limit frequency	4 kHz
Refresh cycle time	5 ms
Dimensions (W x H x D)	28 x 90 x 90 [mm]

System layout, UM-2AO	Explanation



(1) Drive controller CDD3000-HF
(2) User module UM-2AO
(3) External power supply 24 VDC
(4) Two analog outputs (+ 10 V, programmable)

Communication modules

CM-CAN1, CM-CAN2, CM-DPV1

CM - □□□□

Communication Modules

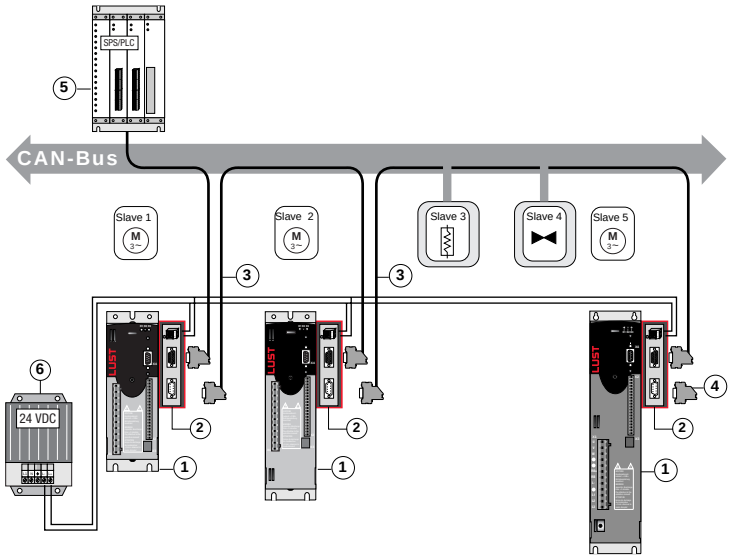
Bus and/or protocol

Order code

Order designation	Summary explanation
CM-CAN1	Communication module for CAN bus with CAN_{Lust} data transfer protocol
CM-CAN2	Communication module for CAN bus with CAN_{open} data transfer protocol
CM-DPV1	Communication module for PROFIBUS-DPV1 (you will find the current GSD file at www.lust-tec.de)

Technical data	CM-CAN1	CM-CAN2	CM-DPV1
Standardization	ISO 11898	ISO 11898	EN 50170
Communication	CiA/DS102	CiA/DS301	Directive 2.084
Device profile	based on DRIVECOM	CiA/DS402	PROFIBUS
Transfer rate/line length	25 kBit/s up to 1000 m 500 kBit/s up to 100 m	20 kBit/s up to 1000 m 1 MBit/s up to 40 m	9.6 kBit/s up to 1200 m 12 MBit/s up to 100 m
Voltage supply	19 ... 29 VDC	18 ... 30 VDC	18 ... 30 VDC
Current consumption	max. 80 mA	max. 100 mA	max. 250 mA
Dimensions (W x H x D)	8 x 90 x 90 [mm]	8 x 90 x 90 [mm]	8 x 90 x 90 [mm]

System layout, CAN, CANopen

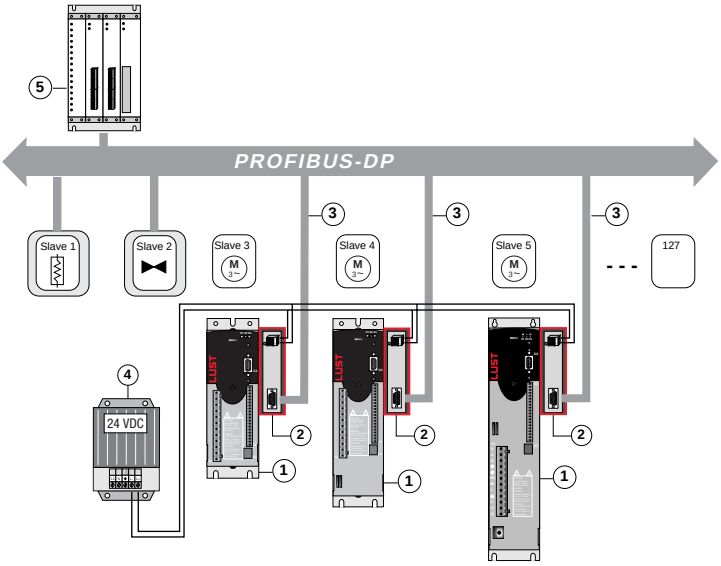


Explanation

(1) Drive controller CDA/CDD3000-HF
(2) Communication module CM-CAN1 or CM-CAN2
(3) Connecting cable CCD 90x, x.x
(4) Bus terminating plug
(5) CAN bus control
(6) Power supply (24 VDC)

max. 100 stations CAN_{LUST} (CM-CAN1)
max. 127 stations CAN_{open} (CM-CAN2)

System layout, PROFIBUS-DP

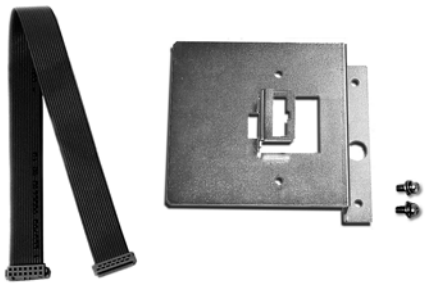


Explanation

(1) Drive controller CDA/CDD3000-HF
(2) Communication module CM-DPV1
(3) PROFIBUS-DP system cable
(4) Power supply 24 VDC
(5) DP-Master

max. 127 stations

Mounting package for UMxxx and CMxxx



MP-UMCM

MP - □□□□

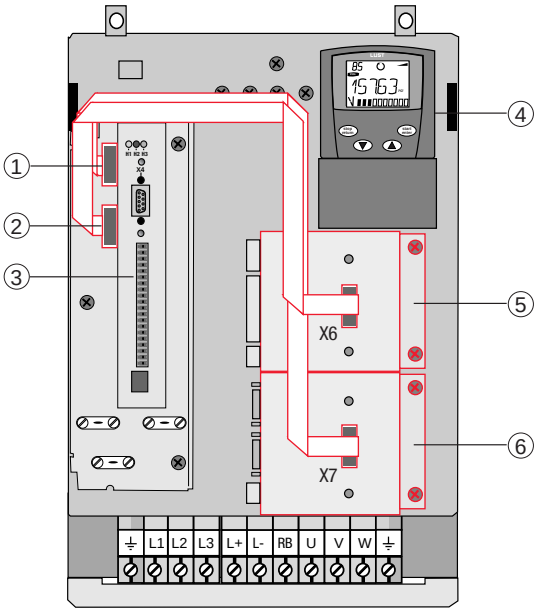
Mounting package

Type

Order code

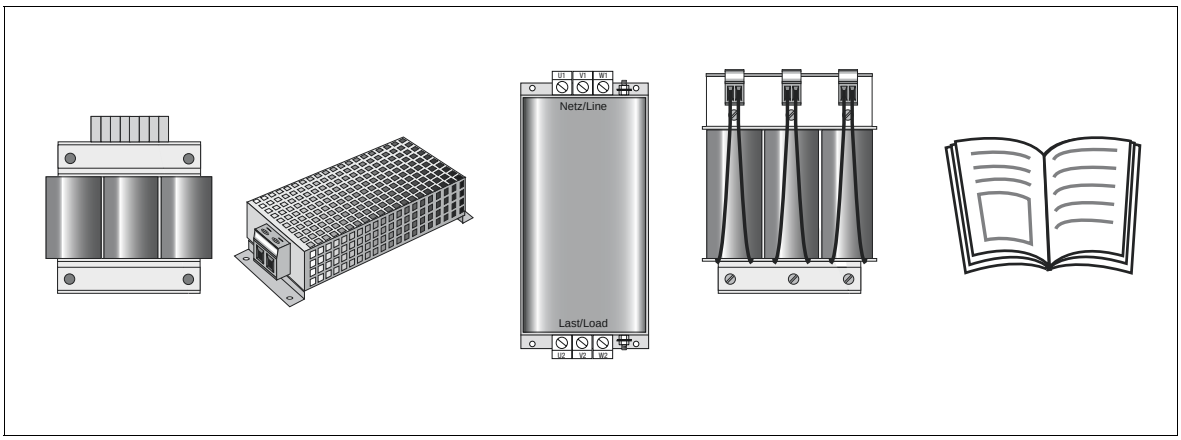
Order designation	Summary explanation
MP-UMCM	The mounting set is used to affix the user/communication module to the servocontrollers in sizes BG6, BG7 and BG8.

System layout	Explanation



(1) Plug-in terminal X7 (communication module)
(2) Plug-in terminal X6 (user module)
(3) Control terminals
(4) KP200
(5) Slot for user module (e.g. UM-8I4O)
(6) Slot for communication module (e.g. CM-CAN1)

Supplementary components



Line chokes

LR34.10

LR - 3 □.□□□

Line Reactor

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 (6%/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% at 400 V = 9.24 V
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%

Single-phase line chokes

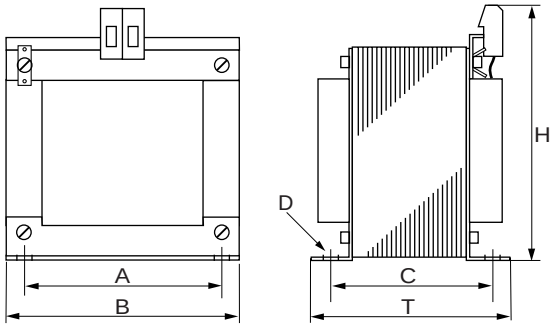
Suitable for drive controllers	Tech. data	Rated current [A]	Power loss tot. [W]	Inductance [mH]	Weight [kg]	Connection [mm²]
CDA/CDD32.003.HF CDA/CDD32.004.HF	LR32.8/ LR32.8-UR	8	10	3,66	0,8	4
CDA/CDD32.006.HF CDA/CDD32.008.HF	LR32.14/ LR32.14-UR	14	16	2,1	1,5	4
CDA/CDD32.004.HF	LR32.5/ LR32.5-UR[1)]	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
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

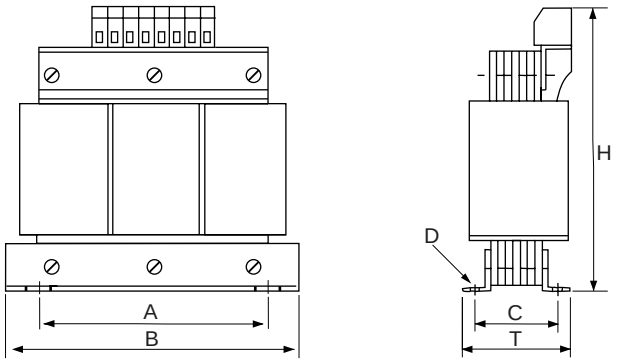
Suitable for drive controllers	Tech. data	Rated current [A]	Total power loss [W]	Inductance [mH]	Weight [kg]	Connection [mm²]
CDA/CDD34.003.HF	LR34.4/LR34.4-UR	4.2	20	7	1.6	4
CDA/CDD34.005.HF CDA/CDD34.006.HF	LR34.6/LR34.6-UR	6	26.1	4.88	2.0	4
CDA/CDD34.008.HF	LR34.8/LR34.8-UR	8	29	3.66	2.4	4
CDA/CDD34.010.HF	LR34.10/LR34.10-UR	10	33	2.93	3.0	4
CDA/CDD34.014.HF	LR34.14/LR34.14-UR	14	45	2.09	3.8	4
CDA/CDD34.017.HF	LR34.17/LR34.17-UR	17	45	1.72	4.5	4
CDA/CDD34.024.HF	LR34.24/LR34.24-UR	24	50	1.22	5.8	4
CDA/CDD34.032.HF	LR34.32/LR34.32-UR	32	67	0.92	6.7	10
CDA/CDD34.044.HF[1)]	LR34.45/LR34.45-UR	45	73	0.65	8.5	10
CDA/CDD34.058.HF[1)]	LR34.60/LR34.60-UR	60	85	0.49	10.0	10
CDA/CDD34.070.HF[1)]	LR34.72/LR34.72-UR	72	111	0.41	14.0	16
CDA/CDD34.088.HF[1)]	LR34.90/LR34.90-UR	90	135	0.33	20.0	35
CDA/CDD34.108.HF[1)]	LR34.110/LR34.110-UR	110	126	0.27	22.0	35
CDA/CDD34.140.HF[1)]	LR34.143/LR34.143-UR	143	168	0.21	28.0	70
CDA/CDD34.168.HF[1)]	LR34.170/LR34.170-UR	170	218	0.18	30.0	70

1) Use for CDA3000 is currently being tested.

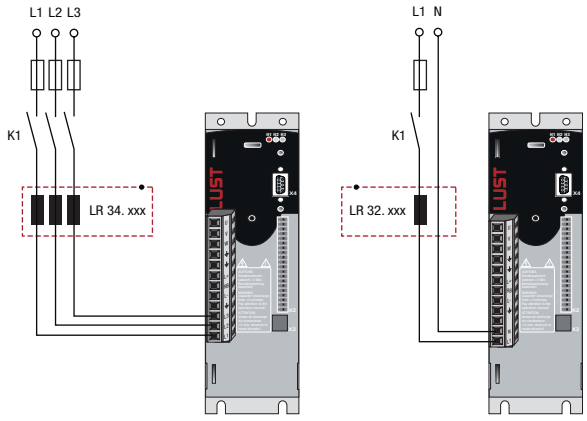
Three-phase line chokes

Dimensions [mm]	LR34.4	LR34.6	LR34.8	LR34.10	LR34.14	LR34.17	LR34.24	LR34.32	LR34.45	LR34.60	LR34.72	LR34.90	LR34.110	LR34.143	LR34.170
W (width)	100	125	125	125	155	155	155	190	190	190	230	230	230	265	300
H (height)	120	140	140	140	160	160	160	195	195	195	275	280	280	330	360
D (depth)	70	65	65	75	80	80	95	85	95	105	125	150	150	145	155
A	63	100	100	100	130	130	130	170	170	170	180	180	180	215	240
C	50	47	47	57	57	57	74	57	67	77	98	122	122	118	120
D Ø	5,8	5	5	5	8	8	8	8	8	8	8	8	8	11	11

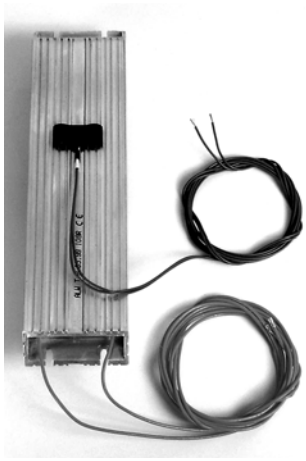
Dimensional drawing

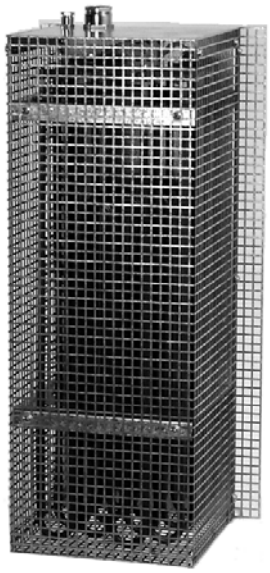


System layout



Braking resistor





BR -□□□.□□,□□ □

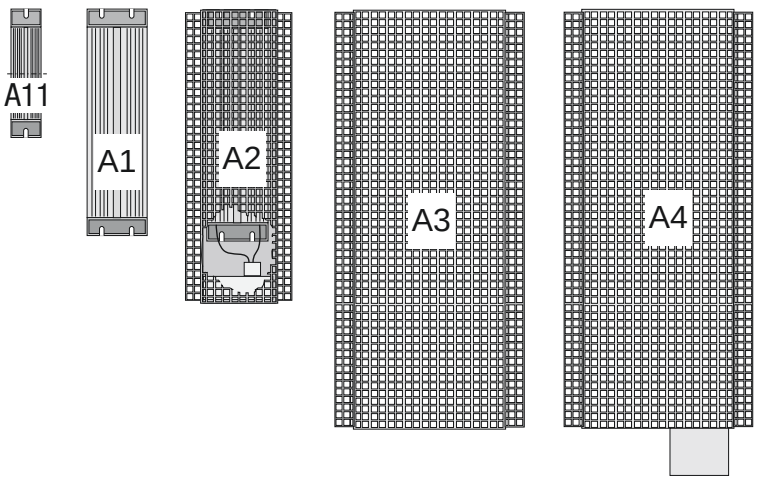
- **Braking res.**
- **Ω value**
- **Power in [W]**
  01 = 100 W
  10 = 1 kW
- **Termination**
- **1 = with touch protection**
  0 = without touch protection

BR-270.02, 540 | BR-042.20, 201 | Order code

Technical data

Design	according to Fig A1 and A11	according to Fig. A2	according to Fig. A3 and A4
Surface temperature	> 200°C	< 80°C	< 80°C
Touch protection	No	Yes (< 80°C)	Yes (< 80°C)
Voltage	max. 800 V	max. 800 V	max. 800 V
High-voltage strength	4000 V	4000 V	1800 V
Temperature monitoring	Yes, with bimetallic protector (breaking capacity 0.5 A/230 V)		
Acceptance tests	CE-conformant		
UL Recognition	On request		No
Connection	1 m long PTFE-insulated flex wire	Ceramic terminals	Ceramic terminals

Diagrams

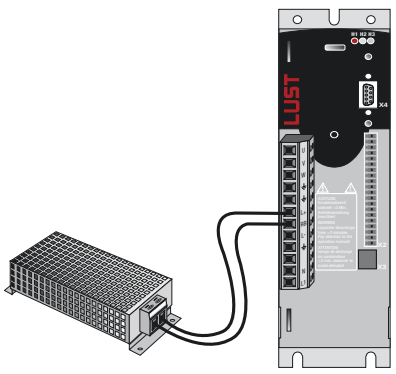


Braking resistor

Tech. data	Cont. braking power [W]	Resistance [Ω ±10%]	Peak braking power [W]		Protection	Diagram
			390 VDC[1)]	750 VDC[2)]		
BR-270.01, 540[4)]	35	270	560	2080	IP23	A11
BR-160.01, 540[4)]	35	160	950	3)	IP23	A11
BR-090.01, 540[4)]	35	90	1690	3)	IP23	A11
BR-110.01, 540[4)]	35	110	1380	3)	IP23	A11
BR-110.02, 540[4)]	150	110	1380	5110	IP23	A1
BR-200.02, 540[4)]	150	200	760	2810	IP23	A1
BR-270.02, 540[4)]	150	270	560	2080	IP23	A1
BR-160.02, 540[4)]	150	160	950	3500	IP23	A1
BR-110.03, 541	300	110	1380	5110	IP23[5)]	A2
BR-200.03, 541	300	200	760	2810	IP23[5)]	A2
BR-270.03, 541	300	270	560	2080	IP23[5)]	A2
BR-160.03, 541	300	160	950	3500	IP23[5)]	A2
BR-090.03, 541	300	90	1690	6250	IP23[5)]	A2
BR-090.10, 201	1000	90	1690	6250	IP20	A3
BR-090.10, 541	1000	90	1690	6250	IP23[5)]	A4
BR-042.20, 201	2000	42	-	13390	IP20	A3
BR-042.20, 541	2000	42	-	13390	IP23[5)]	A4
BR-015.60, 541	6000	15	-	37500	IP23[5)]	A4
BR-010.80, 541	8000	10	-	56250	IP23[5)]	A4

1) 1 x 230 V mains connection -20% +15%
2) 3 x 460 V mains connection -25% +10%
3) Not permitted for operation on HF drive controllers with 3 x 400/460 V mains connection.
4) The braking resistors can be operated at double continuous braking power if provided with optimum cooling. Consult your project engineer.
5) Adapter box in IP54

System layout

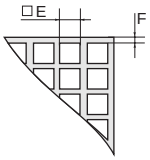


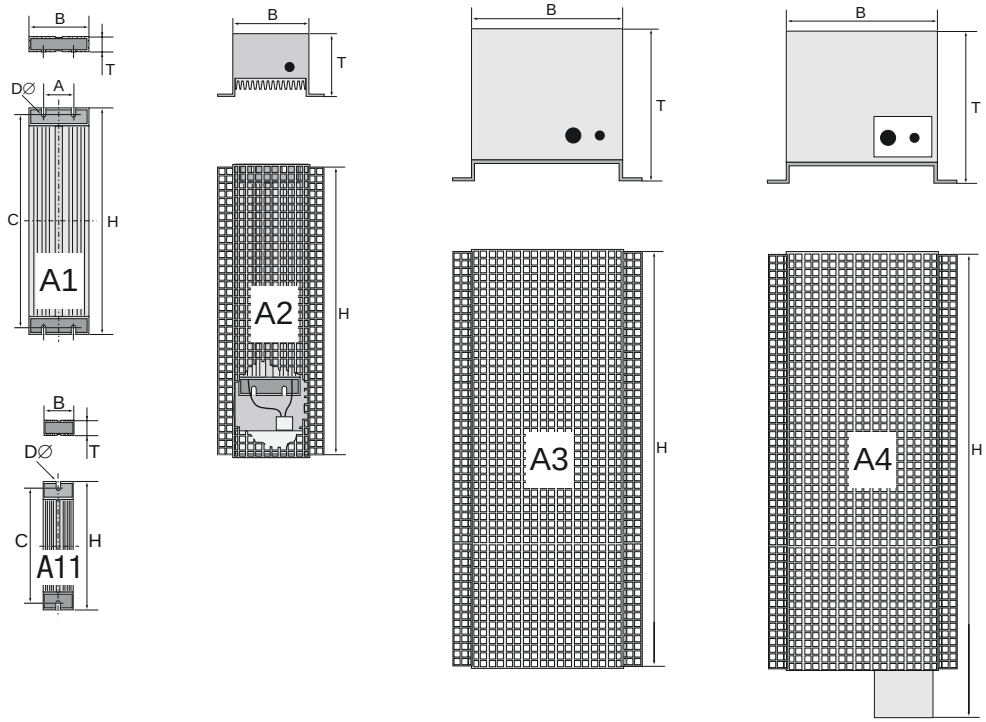
Braking resistor dimensions

Dimensions [mm]	BR-270.01, 540	BR-160.01, 540	BR-090.01, 540	BR-110.01, 540	BR-110.02, 540	BR-200.02, 540	BR-270.02, 540	BR-160.02, 540
W (width)	40	40	40	40	80	80	80	80
H (height)	160	160	160	160	300	300	300	300
D (depth)	26	26	26	26	20	20	20	20
A	-	-	-	-	41.5	41.5	41.5	41.5
C	146	146	146	146	282	282	282	282
D Ø	6.0	6.0	6.0	6.0	5.5	5.5	5.5	5.5
Diagram	A11	A11	A11	A11	A1	A1	A1	A1

Dimensions [mm]	BR-110.03, 541*)	BR-200.03, 541*)	BR-270.03, 541*)	BR-160.03, 541*)	BR-090.03, 541*)	BR-090.10, 201*)	BR-090.10, 541*)	BR-042.20, 201*)	BR-042.20, 541*)	BR-015.60, 541*)	BR-010.80, 541*)
W (width)	102	102	102	102	102	200	200	200	200	200	200
H (height)	400	400	400	400	400	550	605	550	605	605	605
D (depth)	80	80	80	80	80	200	200	200	200	200	200
A											
C											
D Ø											
Diagram	A2	A2	A2	A2	A2	A3	A4	A3	A4	A4	A4

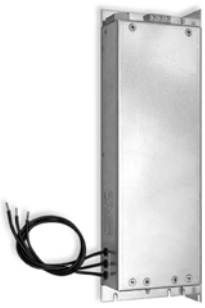
*) Fixing brackets are made of perforated sheet metal
Web width F = 2 mm
Grid square E = 8 mm



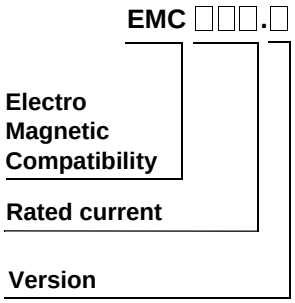


Mains filters

EMC50.0



EMC17.U/S



Order code

Ambient conditions	EMCxx.x
Rated voltage	3 x 480 V, max. +10%, 50/60 Hz
Ambient temperature	typically -25°C to +40°C, with power reduction up to 60°C (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, input terminals VBG4
Permissible contamination	P2 to EN 61558-1
UL Recognition	Version EMCxxx-UR has UL Recognition for the USA and Canadian markets
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 150 m permitted

Three-phase mains filters

Suitable for drive controllers	Technical data	Rated current [A]	Power loss tot. [W]	Leakage current [mA]	Weight [kg]	Terminals [mm²]
CDA/CDD34.008.HF CDA/CDD34.010.HF	EMC 10.0 EMC 10.0-UR	10	13	< 1.3	1.7	0.2 ... 4, PE M5
CDA/CDD34.014.HF CDA/CDD34.017.HF	EMC 17.0 EMC 17.0-UR	17	21	< 1.2	1.8	0.2 ... 4, PE M5
CDA/CDD34.024.HF CDA/CDD34.032.HF	EMC 35.0 EMC 35.0-UR	35	27	< 1.1	2.5	0.2 ... 6, PE M5
CDA/CDD34.045.HF[1)]	EMC 50.0 EMC 50.0-UR	50	31	< 1.1	3.4	0.5 ... 16, PE M5
CDA/CDD34.060.HF[1)]	EMC 63.0	63	53	< 1.1	6.0	0.5 ... 16, PE M5
CDA/CDD34.072.HF[1)]	EMC 80.0	80	68	< 1.1	6.0	0.75 ... 35, PE M8

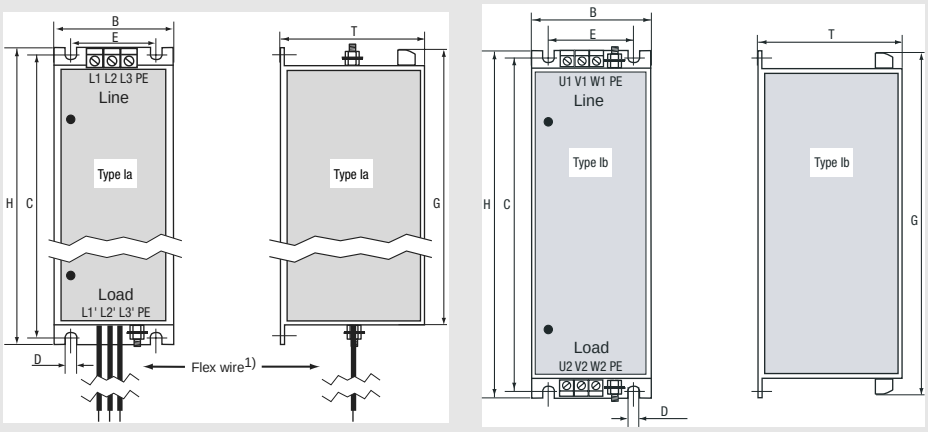
1) The HF drive controllers (CDA/CDD34.045.HF to CDA/CDD34.072.HF) must be operated with line chokes.

Three-phase mains filters

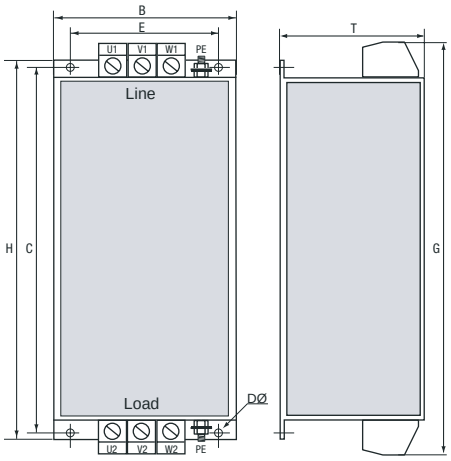
Dimensions [mm]	EMC 10.0/17.0/35.0	EMC 50.0	EMC 63.0	EMC 80.0
Dimensional drawings	Type Ia	Type Ib	Type II	
H (height)	270	290	330	325
W (width)	55	90	150	150
D (depth)	100	100	103	107
G	260	325	366	340
C	260	275	315	310
E	36	76	105	105
D Ø	4.5	4.5	7	7

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



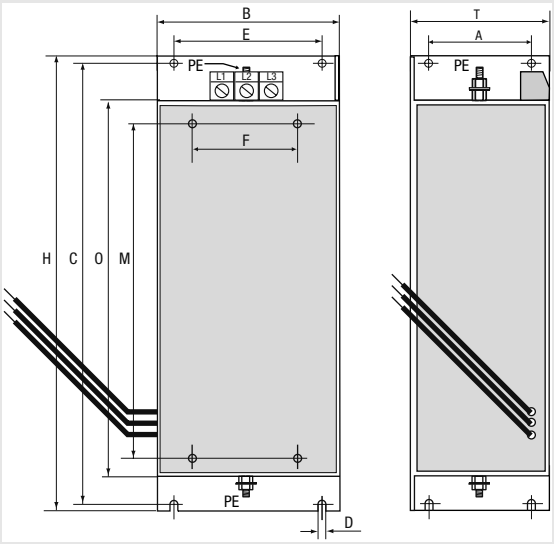
Dimensional drawing: Type II



Three-phase built-under/side-mounted mains filters

Suitable for HF drive controllers	Tech. data	Rated current [A]	Power loss tot. [W]	Leakage current [mA]	Weight [kg]	Connection [mm²]
CDA/CDD34.008.HF CDA/CDD34.010.HF	EMC10.U/S EMC10.U/S-UR	10	12.5	< 1.3	2.0	0.2 ... 4.0 PE M5
CDA/CDD34.014.HF CDA/CDD34.017.HF	EMC17.U/S EMC17.U/S-UR	17	21	< 1.2	3.5	0.2 ... 4.0 PE M5
CDA/CDD34.024.HF CDA/CDD34.032.HF	EMC35.U/S EMC35.U/S-UR	35	21	< 1.1	4.0	0.2 ... 6.0 PE M5

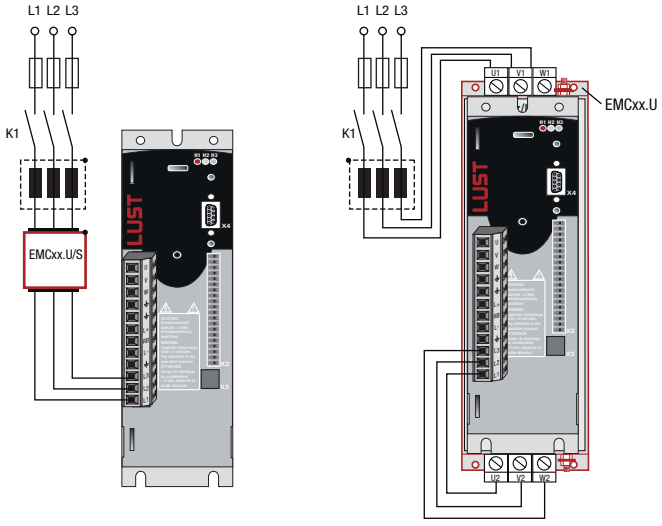
Three-phase built-under*/side-mounted mains filters

Dimensions [mm]	EMC10.U/S	EMC17.U/S	EMC35.U/S	EMC 50.U, EMC 63.U, EMC 80.U
H (height)	385	385	385	430
W (width)	70	120	170	250
D (depth)	55	55	55	100
A	40	40	40	-
C	370	370	370	415
E	50	80	130	190
F	40	80	130	215
M		320		360
O		340		390
D Ø		5.5		7
Dimensional drawing: EMC10.U/S EMC17.U/S EMC35.U/S				

*The built-under type filters only fit under CDA/CDD34.xxx,W version HF drive controllers

5

System layout



Motor filters

Technical data on request, as application-specific project planning is required.

Sine filters

Technical data on request, as application-specific project planning is required.

Paper-based user information (selection)

0XXX . XXB . X-xx

Doc ID. No.

Status

Please refer to the following tables for complete order data.

User information	Use/contents	Order ref.	Language
CDA3000 Operation Manual	Presents the mechanical and electrical installation of the CDA3000 standard drive controller. Guide to quick and easy initial commissioning.	0840.00B.x	German/English/ French/Italian
Supplement to Operation Manual	Sets out the differences between the CDA3000 standard and HF versions, relating to the hardware and software features.	0895.08B.x	German/English
Application Manual CDA3000	Describes the adaptation of the drive system to the application (software features of CDA3000 standard version)	0840.02B.x 0840.22B.x	German English
Operation Manual CDD3000-HF	Presents the mechanical and electrical installation of the CDD3000 HF drive controller. Guide to quick and easy initial commissioning	0998.00B.x	German/English
Application Manual CDD3000	Describes the adaptation of the drive system to the application (software features of CDD3000 standard version)	0931.02B.x 0931.22B.x	German English
Operation Manual CDS4000	Presents the mechanical and electrical installation of the CDS4000 drive controller. Guide to quick and easy initial commissioning	1000.00B.x	German

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