

Inverter

# Inverter Drives 8400 BaseLine

0.25 to 3.0 kW



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# Inverter Drives 8400 BaseLine



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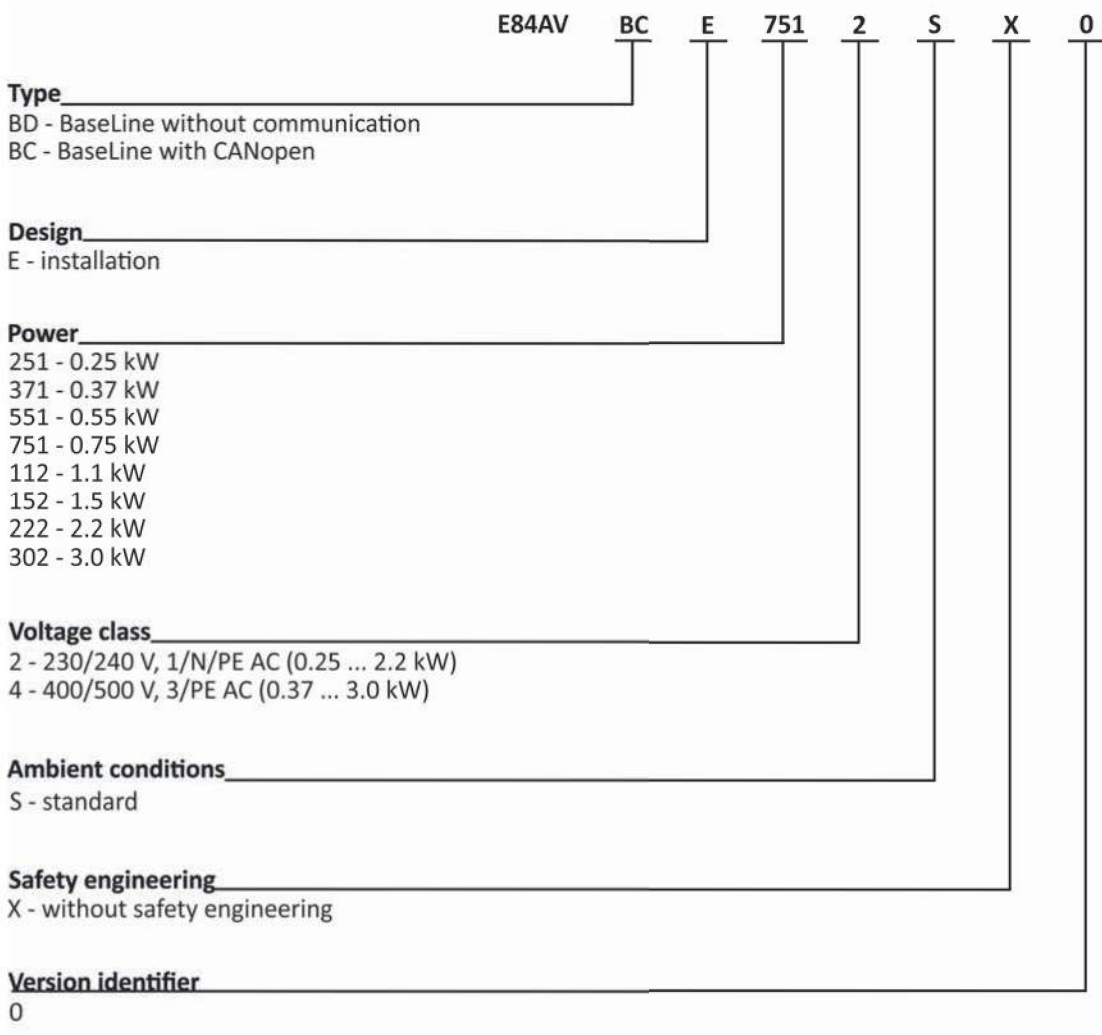
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## Product key



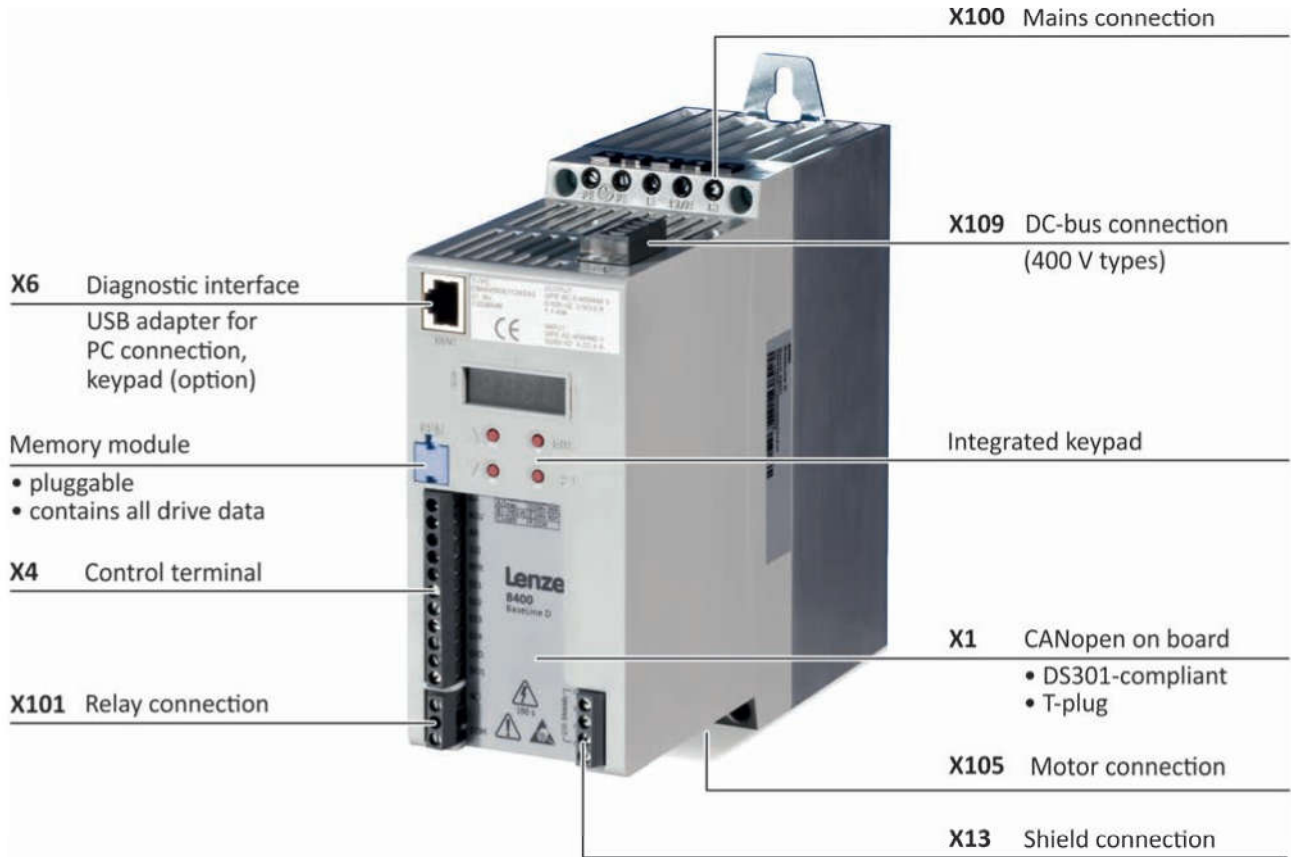
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# Inverter Drives 8400 BaseLine

General information



## Equipment



# Inverter Drives 8400 BaseLine

## General information



### List of abbreviations

b	[mm]	Dimensions
C <sub>th</sub>	[KW <sub>s</sub> ]	Thermal capacity
f <sub>ch</sub>	[kHz]	Switching frequency
h	[mm]	Dimensions
H <sub>max</sub>	[m]	Site altitude
I <sub>max</sub>	[A]	Max. DC-bus current
I <sub>max, out</sub>	[A]	Max. output current
I <sub>N, AC</sub>	[A]	Rated mains current
I <sub>N, DC</sub>	[A]	Rated DC-bus current
I <sub>N, out</sub>	[A]	Rated output current
l <sub>max</sub>	[m]	Max. cable length
m	[kg]	Mass
P	[kW]	Typical motor power
P <sub>max, 1</sub>	[kW]	Max. output power
P <sub>V</sub>	[kW]	Power loss
P <sub>N</sub>	[kW]	Rated power
R <sub>min</sub>	[Ω]	Min. brake resistance
R <sub>N</sub>	[Ω]	Rated resistance
t	[mm]	Dimensions
U <sub>AC</sub>	[V]	Mains voltage
U <sub>DC</sub>	[V]	DC supply
U <sub>N, AC</sub>	[V]	Rated voltage
U <sub>out</sub>	[V]	Max. output voltage

ASM	Asynchronous motor
DIAG	Slot for diagnostic adapter
DIN	Deutsches Institut für Normung e.V.
EN	European standard
EN 60529	Degrees of protection provided by enclosures (IP code)
EN 60721-3	Classification of environmental conditions; Part 3: Classes of environmental parameters and their limit values
EN 61800-3	Electrical variable speed drives Part 3: EMC requirements including special test methods
IEC	International Electrotechnical Commission
IEC 61508	Functional safety of electrical/electronic/programmable electronic safety-related systems
IM	International Mounting Code
IP	International Protection Code
MCI	Slot for communication module (module communication interface)
NEMA	National Electrical Manufacturers Association
UL	Underwriters Laboratory Listed Product
UR	Underwriters Laboratory Recognized Product
VDE	Verband deutscher Elektrotechniker (Association of German Electrical Engineers)

# Inverter Drives 8400 BaseLine

General information

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# Inverter Drives 8400 BaseLine

## General information



### Inverter Drives 8400

Cost-efficiency, time savings and quality enhancement are the challenges of the future. Lenze is facing these challenges with its L-force product portfolio – the holistic solution portfolio with precisely matched interfaces and components. For faster configuration and commissioning, better performance and more flexibility in production.

As such, the four versions of Inverter Drives 8400 - BaseLine, StateLine, HighLine and TopLine - have been designed for consistent process optimisation – throughout your entire value-added chain. They reduce your costs, from component selection, through project planning, manufacturing and commissioning, all the way up to servicing. We call this "rightsizing".

#### Rightsized for versatile applications

Are you looking to control a three-phase AC motor or perform positioning with or without feedback? Then select exactly the inverter you need from the scaled solution space of the Inverter Drives 8400 with units in the power range from 0.25 kW to 45 kW. You are sure to find exactly what you are looking for here, as the modular 8400 range of inverters offers the right solution for a broad spectrum of applications.

While the BaseLine is excellent for basic applications, the TopLine offers servo qualities and thereby fulfils with the strict requirements in terms of dynamics and accuracy.

#### 8400 BaseLine - for constant motion

The BaseLine version is the entry-level model in terms of functionality and drive behaviour. Featuring an integrated keypad and everything you would expect from a modern frequency inverter suitable for universal use, the 8400 BaseLine is the ideal solution for applications such as conveyor drives, pumps, fans or ventilators.

#### Two versions

Two versions of the 8400 BaseLine are available:

- BaseLine C with CANopen;  
Product key: E84AVBCE□□□□SXO
- BaseLine D without communication;  
Product key: E84AVBDE□□□□SXO



# Inverter Drives 8400 BaseLine

## General information



### Functions and features

<b>Mode</b>	8400 BaseLine
<b>Control types, motor control</b>	
Sensorless vector control (SLVC)	For three-phase asynchronous motors
V/f control (VFCplus)	For three-phase AC motors and asynchronous servo motor (linear or square-law)
<b>Basic functions</b>	Freely assignable user menu DC brake function Flying restart circuit S-shaped ramps for smooth acceleration PID controller 3 fixed frequencies
<b>Monitoring and protective measures</b>	Short circuit Earth fault Overvoltage Overcurrent I <sup>2</sup> x t-Motor monitoring Motor stalling
<b>Diagnostics</b>	Data logger, logbook, oscilloscope functions
Status display	4 LEDs
Diagnostic interface	Integrated For USB diagnostic adapter or keypad (diagnosis terminal)
<b>Braking operation</b>	
Brake chopper	Integrated (400 V types)
Brake resistor	External (400 V types)

# Inverter Drives 8400 BaseLine

General information

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# Inverter Drives 8400 BaseLine

Technical data




## Standards and operating conditions

<b>Mode</b>			
Product			8400 BaseLine
<b>Conformity</b>			
CE			Low-Voltage Directive 2006/95/EC
EAC			TP TC 004/2011 (TR CU 004/2011) TP TC 020/2011 (TR CU 020/2011)
<b>Approval</b>			
UL 508C			for USA and Canada (requirements of the CSA 22.2 No. 14) Power Conversion Equipment (File No. E170350)
<b>Degree of protection</b>			
EN 60529 <sup>2)</sup>			IP20
NEMA 250			Type 1
<b>Climatic conditions</b>			
Storage (EN 60721-3-1)			1K3 (temperature: -25 °C ... +60 °C)
Transport (EN 60721-3-2)			2K3 (temperature: -25 °C ... +70 °C)
Operation (EN 60721-3-3)			3K3 (temperature: -10°C ... +55 °C)
Current derating at over 45°C			2.5% / K
<b>Site altitude</b>			
Amsl	H <sub>max</sub>	[m]	4000
Current derating at over 1000 m		[%/1000 m]	5
<b>Vibration resistance</b>			
Transport (EN 60721-3-2)			2M2
Operation (EN 61800-5-1)			10 Hz ≤ f ≤ 57 Hz: ±0.075 mm amplitude, 57 Hz ≤ f ≤ 150 Hz: 1.0 g
Operation (Germanischer Lloyd)			5 Hz ≤ f ≤ 13.2 Hz: ± 1 mm amplitude 13.2 Hz ≤ f ≤ 100 Hz: 0.7 g

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<b>Mode</b>			
Product			8400 BaseLine
<b>Supply form</b>			
			Systems with earthed star point (TN and TT systems)
<b>Noise emission</b>			
EN 61800-3			Integrated RFI suppression: category C2 up to 25 m shielded motor cable <sup>-1)</sup>
<b>Insulation resistance</b>			
EN 61800-5-1			Overvoltage category III Above 2000 m amsl overvoltage category II
<b>Degree of pollution</b>			
EN 61800-5-1			2
<b>Protective insulation of control circuits</b>			
EN 61800-5-1			Safe mains isolation: double/reinforced insulation

<sup>1)</sup>  1 - Please also refer to the Motor connection section

<sup>2)</sup> Mounted and ready-to-use

# Inverter Drives 8400 BaseLine



## Technical data

### Rated data 230 V

► Unless otherwise specified, the data refers to the default setting.



#### Data / Device

Operation with rated data: rated output current  $I_{N,out}$  at a mains voltage 230 V, switching frequency 8 kHz variable and an ambient temperature 45 °C (default setting).

Output currents  $I_{out}$  apply to:

Ambient temperature 45 °C operating with constant switching frequency 2 kHz or 4 kHz.

Ambient temperature 40 °C operating with constant switching frequency 8 kHz or 16 kHz.

						
<b>Typical motor power</b>						
4-pole asynchronous motor	P	[kW]	0.25	0.37	0.55	0.75
<b>Product key</b>			E84AVB□E2512SX0	E84AVB□E3712SX0	E84AVB□E5512SX0	E84AVB□E7512SX0
<b>Mains voltage range</b>			1/N/PE AC 180 V-0 % ... 264 V+0 %, 45 Hz-0 % ... 65 Hz+0 %			
	$U_{AC}$	[V]				
<b>Rated mains current</b>						
With mains choke	$I_{N,AC}$	[A]	3.0	4.2	5.4	7.0
Without mains choke	$I_{N,AC}$	[A]	3.4	5.1	6.7	8.8
<b>Rated output current</b>						
	$I_{N,out}$	[A]	1.7	2.4	3.0	4.0
<b>Output current</b>						
2 kHz	$I_{out}$	[A]	1.7	2.4	3.0	4.0
4 kHz	$I_{out}$	[A]	1.7	2.4	3.0	4.0
8 kHz	$I_{out}$	[A]	1.7	2.4	3.0	4.0
16 kHz	$I_{out}$	[A]	1.1	1.6	2.0	2.7

#### Data for 60 s overload

<b>Max. output current</b>						
	$I_{max,out}$	[A]	2.6	3.6	4.5	6.0
<b>Overload time</b>			60.0			
	$t_{ol}$	[s]				
<b>Recovery time</b>			120.0			
	$t_{re}$	[s]				

#### Data for 3 s overload

<b>Max. short-time output current</b>						
	$I_{max,out}$	[A]	3.4	4.8	6.0	8.0
<b>Overload time</b>			3.0			
	$t_{ol}$	[s]				
<b>Recovery time</b>			12.0			
	$t_{re}$	[s]				



# Inverter Drives 8400 BaseLine

Technical data



## Rated data 230 V

► Unless otherwise specified, the data refers to the default setting.

						
<b>Typical motor power</b>						
4-pole asynchronous motor	P	[kW]	0.25	0.37	0.55	0.75
<b>Product key</b>			E84AVB□E2512SX0	E84AVB□E3712SX0	E84AVB□E5512SX0	E84AVB□E7512SX0
<b>Power loss</b>						
	P <sub>V</sub>	[kW]	0.015	0.017	0.023	0.030
<b>Max. cable length <sup>1)</sup></b>						
Shielded motor cable	l <sub>max</sub>	[m]	50			

## Dimensions and weights

<b>Dimensions</b>						
Height	h	[mm]	165	165	165	165
Width	b	[mm]	70	70	70	70
Depth	t	[mm]	144	144	162	162
<b>Mass</b>						
	m	[kg]	1.2	1.2	1.2	1.2

<sup>1)</sup> Technically possible cable lengths, irrespective of EMC requirements

# Inverter Drives 8400 BaseLine



## Technical data

### Rated data 230 V

► Unless otherwise specified, the data refers to the default setting.


#### Data / Device

Operation with rated data: rated output current  $I_{N,out}$  at a mains voltage 230 V, switching frequency 8 kHz variable and an ambient temperature 45 °C (default setting).

Output currents  $I_{out}$  apply to:

Ambient temperature 45 °C operating with constant switching frequency 2 kHz or 4 kHz.

Ambient temperature 40 °C operating with constant switching frequency 8 kHz or 16 kHz.

					
<b>Typical motor power</b>					
4-pole asynchronous motor	P	[kW]	1.10	1.50	2.20
<b>Product key</b>			E84AVB□E1122SX0	E84AVB□E1522SX0	E84AVB□E2222SX0
<b>Mains voltage range</b>			1/N/PE AC 180 V-0 % ... 264 V+0 %, 45 Hz-0 % ... 65 Hz+0 %		
	$U_{AC}$	[V]			
<b>Rated mains current</b>					
With mains choke	$I_{N,AC}$	[A]	9.9	11.8	15.7
Without mains choke	$I_{N,AC}$	[A]	12.0	13.7	22.0
<b>Rated output current</b>					
	$I_{N,out}$	[A]	5.5	7.0	9.5
<b>Output current</b>					
2 kHz	$I_{out}$	[A]	5.5	7.0	9.5
4 kHz	$I_{out}$	[A]	5.5	7.0	9.5
8 kHz	$I_{out}$	[A]	5.5	7.0	9.5
16 kHz	$I_{out}$	[A]	3.7	4.7	6.3

#### Data for 60 s overload

<b>Max. output current</b>					
	$I_{max,out}$	[A]	8.3	10.5	14.3
<b>Overload time</b>					
	$t_{ol}$	[s]	60.0		
<b>Recovery time</b>					
	$t_{re}$	[s]	120.0		

#### Data for 3 s overload

<b>Max. short-time output current</b>					
	$I_{max,out}$	[A]	11.0	14.0	19.0
<b>Overload time</b>					
	$t_{ol}$	[s]	3.0		
<b>Recovery time</b>					
	$t_{re}$	[s]	12.0		


# Inverter Drives 8400 BaseLine

Technical data



## Rated data 230 V

► Unless otherwise specified, the data refers to the default setting.

					
<b>Typical motor power</b>					
4-pole asynchronous motor	P	[kW]	1.10	1.50	2.20
<b>Product key</b>			E84AVB□E1122SX0	E84AVB□E1522SX0	E84AVB□E2222SX0
<b>Power loss</b>					
	P <sub>V</sub>	[kW]	0.043	0.054	0.076
<b>Max. cable length <sup>1)</sup></b>					
Shielded motor cable	l <sub>max</sub>	[m]	50		

## Dimensions and weights

<b>Dimensions</b>					
Height	h	[mm]	165	215	215
Width	b	[mm]	70	70	70
Depth	t	[mm]	162	162	162
<b>Mass</b>					
	m	[kg]	1.4	1.9	1.9

<sup>1)</sup> Technically possible cable lengths, irrespective of EMC requirements

# Inverter Drives 8400 BaseLine

Technical data



## Rated data 400 V

► Unless otherwise specified, the data refers to the default setting.


### Data / Device

Operation with rated data: rated output current  $I_{N,out}$  at mains voltage 400 V, switching frequency 8 kHz variable and max. ambient temperature 45 °C (default setting).

Output currents  $I_{out}$  apply to:

Ambient temperature 45 °C operating with constant switching frequency 2 kHz or 4 kHz.

Ambient temperature 40 °C operating with constant switching frequency 8 kHz or 16 kHz.

					
<b>Typical motor power</b>					
4-pole asynchronous motor	P	[kW]	0.37	0.55	0.75
<b>Product key</b>			E84AVB□E3714SX0	E84AVB□E5514SX0	E84AVB□E7514SX0
<b>Mains voltage range</b>			3/PE AC 180 V-0 % ... 550 V+0 %, 45 Hz-0 % ... 65 Hz+0 %		
	$U_{AC}$	[V]			
<b>Rated mains current</b>					
With mains choke	$I_{N,AC}$	[A]	1.4	1.8	2.2
Without mains choke	$I_{N,AC}$	[A]	1.8	2.3	3.2
<b>Rated output current</b>					
	$I_{N,out}$	[A]	1.3	1.8	2.4
<b>Output current</b>					
2 kHz	$I_{out}$	[A]	1.3	1.8	2.4
4 kHz	$I_{out}$	[A]	1.3	1.8	2.4
8 kHz	$I_{out}$	[A]	1.3	1.8	2.4
16 kHz	$I_{out}$	[A]	0.9	1.2	1.6

### Data for 60 s overload

<b>Max. output current</b>					
	$I_{max,out}$	[A]	2.0	2.7	3.6
<b>Overload time</b>					
	$t_{ol}$	[s]	60.0		
<b>Recovery time</b>					
	$t_{re}$	[s]	120.0		

### Data for 3 s overload

<b>Max. short-time output current</b>					
	$I_{max,out}$	[A]	2.3	3.2	4.2
<b>Overload time</b>					
	$t_{ol}$	[s]	3.0		
<b>Recovery time</b>					
	$t_{re}$	[s]	12.0		




# Inverter Drives 8400 BaseLine

Technical data



## Rated data 400 V

► Unless otherwise specified, the data refers to the default setting.

					
<b>Typical motor power</b>					
4-pole asynchronous motor	P	[kW]	0.37	0.55	0.75
<b>Product key</b>			E84AVB□E3714SX0	E84AVB□E5514SX0	E84AVB□E7514SX0
<b>DC supply</b>			DC 455 V -0 % ... 775 V +0 %		
	U <sub>DC</sub>	[V]			
<b>Rated DC-bus current</b>					
	I <sub>N,DC</sub>	[A]	2.2	2.8	3.6
<b>Power loss</b>					
	P <sub>V</sub>	[kW]	0.015	0.022	0.029
<b>Max. cable length <sup>1)</sup></b>					
Shielded motor cable	I <sub>max</sub>	[m]	50		

## Brake chopper rated data

<b>Rated power, Brake chopper</b>					
	P <sub>N</sub>	[kW]	1.3	1.3	1.3
<b>Max. output power, Brake chopper</b>					
	P <sub>max,1</sub>	[kW]	1.3	1.3	1.3
<b>Min. brake resistance</b>					
	R <sub>min</sub>	[Ω]	390.0	390.0	390.0

## Dimensions and weights

<b>Dimensions</b>					
Height	h	[mm]	165	165	165
Width	b	[mm]	70	70	70
Depth	t	[mm]	162	162	162
<b>Mass</b>					
	m	[kg]	1.2	1.2	1.2

<sup>1)</sup> Technically possible cable lengths, irrespective of EMC requirements

# Inverter Drives 8400 BaseLine



## Technical data

### Rated data 400 V

► Unless otherwise specified, the data refers to the default setting.


#### Data / Device

Operation with rated data: rated output current  $I_{N,out}$  at mains voltage 400 V, switching frequency 8 kHz variable and max. ambient temperature 45 °C (default setting).

Output currents  $I_{out}$  apply to:

Ambient temperature 45 °C operating with constant switching frequency 2 kHz or 4 kHz.

Ambient temperature 40 °C operating with constant switching frequency 8 kHz or 16 kHz.

						
<b>Typical motor power</b>						
4-pole asynchronous motor	P	[kW]	1.10	1.50	2.20	3.00
<b>Product key</b>			E84AVB□E1124SX0	E84AVB□E1524SX0	E84AVB□E2224SX0	E84AVB□E3024SX0
<b>Mains voltage range</b>			3/PE AC 180 V-0 % ... 550 V+0 %, 45 Hz-0 % ... 65 Hz+0 %			
	$U_{AC}$	[V]				
<b>Rated mains current</b>						
With mains choke	$I_{N,AC}$	[A]	3.2	3.6	5.0	7.1
Without mains choke	$I_{N,AC}$	[A]	4.2	4.7	6.2	10.2
<b>Rated output current</b>						
	$I_{N,out}$	[A]	3.2	3.9	5.6	7.3
<b>Output current</b>						
2 kHz	$I_{out}$	[A]	3.2	3.9	5.6	7.3
4 kHz	$I_{out}$	[A]	3.2	3.9	5.6	7.3
8 kHz	$I_{out}$	[A]	3.2	3.9	5.6	7.3
16 kHz	$I_{out}$	[A]	2.1	2.6	3.7	4.9

#### Data for 60 s overload

<b>Max. output current</b>						
	$I_{max,out}$	[A]	4.8	5.9	8.4	11.0
<b>Overload time</b>			60.0			
	$t_{ol}$	[s]				
<b>Recovery time</b>			120.0			
	$t_{re}$	[s]				

#### Data for 3 s overload

<b>Max. short-time output current</b>						
	$I_{max,out}$	[A]	5.6	6.8	9.8	12.4
<b>Overload time</b>			3.0			
	$t_{ol}$	[s]				
<b>Recovery time</b>			12.0			
	$t_{re}$	[s]				


# Inverter Drives 8400 BaseLine

Technical data



## Rated data 400 V

► Unless otherwise specified, the data refers to the default setting.

						
<b>Typical motor power</b>						
4-pole asynchronous motor	P	[kW]	1.10	1.50	2.20	3.00
<b>Product key</b>			E84AVB□E1124SX0	E84AVB□E1524SX0	E84AVB□E2224SX0	E84AVB□E3024SX0
<b>DC supply</b>			DC 455 V -0 % ... 775 V +0 %			
	U <sub>DC</sub>	[V]				
<b>Rated DC-bus current</b>						
	I <sub>N,DC</sub>	[A]	5.1	5.8	7.6	10.0
<b>Power loss</b>						
	P <sub>V</sub>	[kW]	0.042	0.048	0.066	0.091
<b>Max. cable length <sup>1)</sup></b>			50			
Shielded motor cable	I <sub>max</sub>	[m]				

## Brake chopper rated data

<b>Rated power, Brake chopper</b>						
	P <sub>N</sub>	[kW]	2.9	2.9	3.5	7.3
<b>Max. output power, Brake chopper</b>						
	P <sub>max,1</sub>	[kW]	2.9	2.9	3.5	7.3
<b>Min. brake resistance</b>						
	R <sub>min</sub>	[Ω]	180.0	180.0	150.0	82.0

## Dimensions and weights

<b>Dimensions</b>					
Height	h	[mm]	165	165	215
Width	b	[mm]	70	70	70
Depth	t	[mm]	162	162	162
<b>Mass</b>					
	m	[kg]	1.4	1.4	1.9

<sup>1)</sup> Technically possible cable lengths, irrespective of EMC requirements

# Inverter Drives 8400 BaseLine

Technical data

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# Inverter Drives 8400 BaseLine



## Interfaces

### Mains connection

- ▶ The mains fuse and cable cross-section specifications are for a mains connection of 1 x 230V or 3 x 400V.
- ▶ Class gG/gI fuses or class gRL semiconductor fuses.
- ▶ The cable cross-sections apply to PVC-insulated copper cables.
- ▶ Use for installation with UL-approved cables, fuses and brackets.

### Operation with mains choke

Typical motor power	Mains voltage	Product key	Circuit breaker	Fuse		Mains connection
				EN 60204-1	UL	
4-pole asynchronous motor		Inverter				Cross-section (with mains choke)
P	$U_{AC}$		I	I	I	q
[kW]	[V]		[A]	[A]	[A]	[mm <sup>2</sup> ]
0.25	1 AC 180 ... 264	E84AV□□□2512□□□	C6	6	6	1.0
0.37		E84AV□□□3712□□□			10	
0.55		E84AV□□□5512□□□	C10	10	15	1.5
0.75		E84AV□□□7512□□□			20	
1.10		E84AV□□□1122□□□			25	
1.50		E84AV□□□1522□□□	C20	20	30	6.0
2.20		E84AV□□□2222□□□				
0.37	3 AC 320 ... 550	E84AV□□□3714□□□	C6	6	6	1.0
0.55		E84AV□□□5514□□□				
0.75		E84AV□□□7514□□□				
1.10		E84AV□□□1124□□□	C10	10	10	1.5
1.50		E84AV□□□1524□□□				
2.20		E84AV□□□2224□□□				
3.00		E84AV□□□3024□□□				

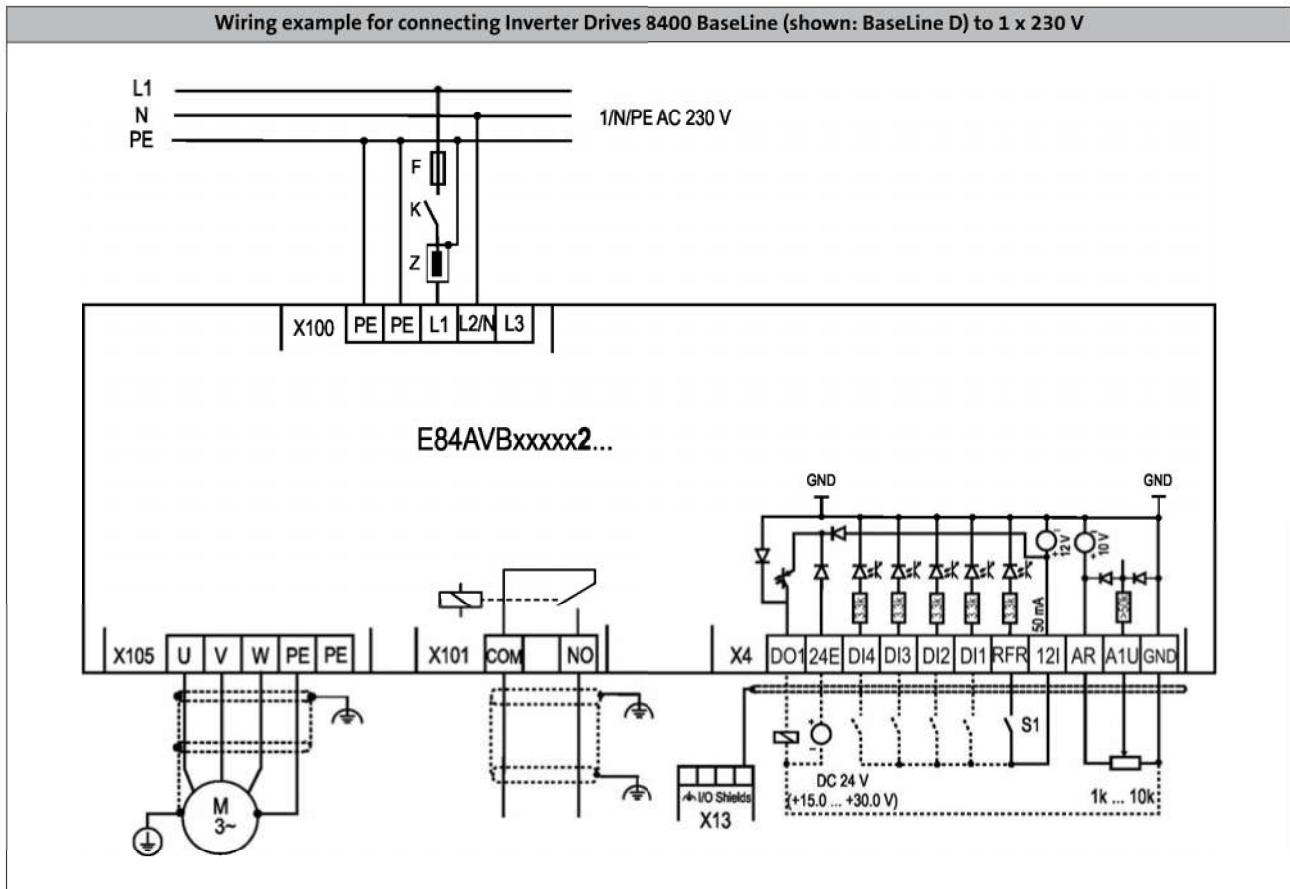
### Operation without mains choke

Typical motor power	Mains voltage	Product key	Circuit breaker	Fuse		Mains connection
				EN 60204-1	UL	
4-pole asynchronous motor		Inverter				Cross-section (without mains choke)
P	$U_{AC}$		I	I	I	q
[kW]	[V]		[A]	[A]	[A]	[mm <sup>2</sup> ]
0.25	1 AC 180 ... 264	E84AV□□□2512□□□	C6	6	6	1.0
0.37		E84AV□□□3712□□□			10	
0.55		E84AV□□□5512□□□	C10	10	15	1.5
0.75		E84AV□□□7512□□□			20	
1.10		E84AV□□□1122□□□			25	
1.50		E84AV□□□1522□□□	C25	25	30	6.0
2.20		E84AV□□□2222□□□				
0.37	3 AC 320 ... 550	E84AV□□□3714□□□	C6	6	6	1.0
0.55		E84AV□□□5514□□□				
0.75		E84AV□□□7514□□□				
1.10		E84AV□□□1124□□□	C10	10	10	1.5
1.50		E84AV□□□1524□□□				
2.20		E84AV□□□2224□□□				
3.00		E84AV□□□3024□□□				



### Connection diagrams

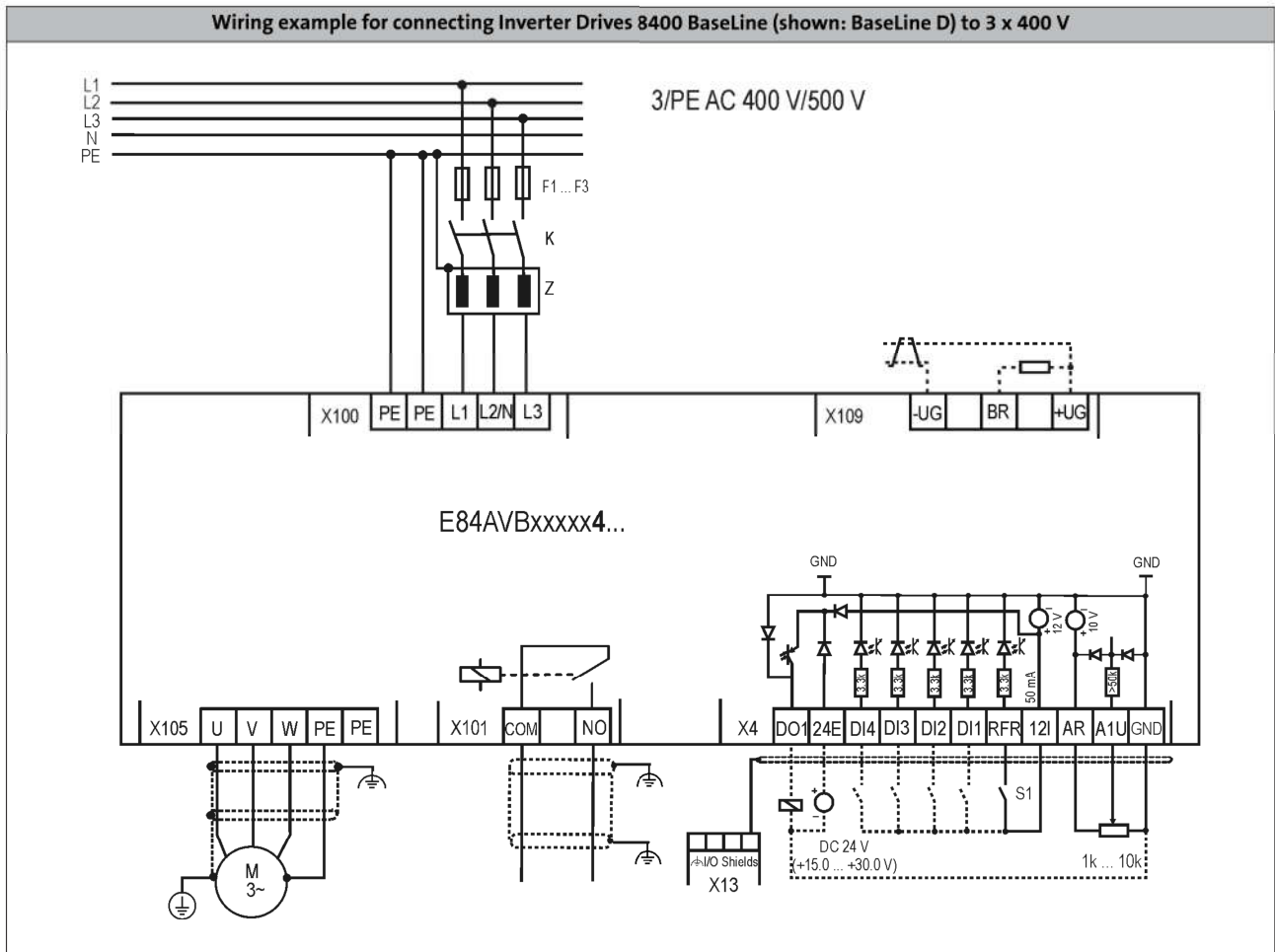
Wiring example for connecting Inverter Drives 8400 BaseLine (shown: BaseLine D) to 1 x 230 V



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### Connection diagrams





### Control connections

<b>Mode</b>	8400 BaseLine
<b>Analog inputs</b>	
Number	1 Switchable: voltage or current input
Resolution	10 bits
Value range	0 ... 10V, 0/4 ... 20mA
<b>Digital inputs</b>	
Number	5
Switching level	PLC (IEC 61131-2)
Max. input current	11 mA
<b>Digital outputs</b>	
Number	1
Switching level	PLC (IEC 61131-2)
Max. output current	50 mA
<b>Relay</b>	
Number	1
Contact	NO contact
AC connection	250V, 3A
DC connection	24V, 2A ... 240V, 0.16A
<b>Interfaces</b>	
CANopen	functional insulated Max. baud rate 1000 kbps integrated (BaseLine C)

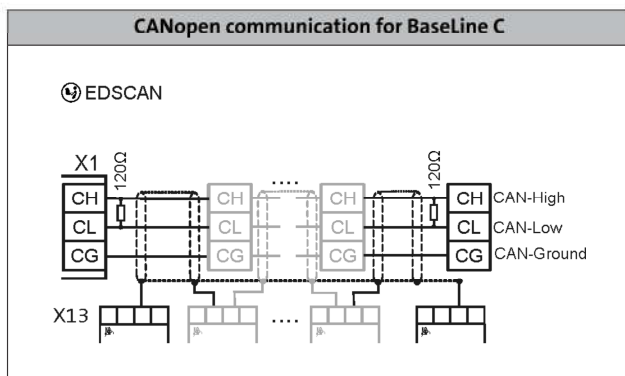
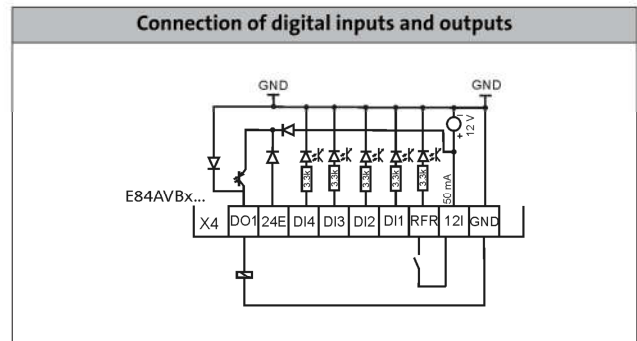
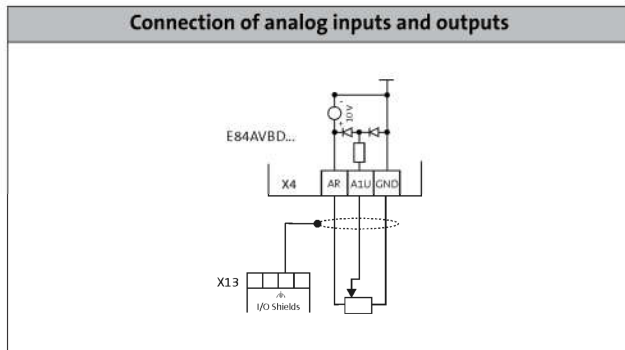


# Inverter Drives 8400 BaseLine

## Interfaces



### Control connections



# Inverter Drives 8400 BaseLine

## Interfaces



### Memory module

All drive settings for the 8400 are stored on the memory module, which is a pluggable memory chip. The memory module ensures that drives can be replaced quickly and without errors being made.

Mode	Features	Product key
Memory module	<ul style="list-style-type: none"><li>• For 8400 BaseLine, 8400 motec</li><li>• Packaging unit: 12 items</li></ul>	E84AYM20S/M

- ▶ Each inverter is equipped with a memory module in the factory



### Brake resistors

An external brake resistor is required to brake high moments of inertia or in the event of prolonged operation in generator mode; this resistor converts braking energy into heat.

The brake resistors recommended in the table below have been dimensioned for approx. 1.5 times the regenerative power, with a cycle time of 15/135 s (brake/rest ratio). These brake resistors generally meet the usual requirements of standard applications.

The brake resistors are fitted with a thermostat (potential-free NC contact).



ERBM...(IP50) brake resistor

Typical motor power	Mains voltage	Product key		Rated resistance	Rated power	Thermal capacity	Dimensions	Mass
		Inverter	Brake resistor					
4-pole asynchronous motor								
P	U <sub>AC</sub>			R <sub>N</sub>	P <sub>N</sub>	C <sub>th</sub>	h x b x t	m
[kW]	[V]			[Ω]	[kW]	[KWs]	[mm]	[kg]
0.37	3 AC 320 ... 550	E84AV□□□3714□□□	ERBM390R100W	390.0	0.10	15.0	235 x 20.6 x 40	0.4
0.55		E84AV□□□5514□□□						
0.75		E84AV□□□7514□□□	ERBP180R200W	180.0	0.20	30.0	240 x 41 x 122	1.0
1.10		E84AV□□□1124□□□						
1.50		E84AV□□□1524□□□	ERBP180R300W	0.30	45.0	320 x 41 x 122	1.4	
2.20		E84AV□□□2224□□□						
3.00		E84AV□□□3024□□□						

► Brake resistor connection requires a connector (product key: EWS0074/M).

- ▶ Data sheet on ERBM brake resistors  
**DS\_ZB\_ERBM\_0001**  
Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)
- ▶ Data sheet on ERBP brake resistors  
**DS\_ZB\_ERBP\_0001**  
Available for download at [lenze.de/dsc](http://lenze.de/dsc)

- ▶ Data sheet on ERBS brake resistors  
**DS\_ZB\_ERBS\_0001**  
Available for download at [www.lenze.com/dsc](http://www.lenze.com/dsc)

# Inverter Drives 8400 BaseLine

## Accessories



### Mains chokes

A mains choke is an inductive resistor which is connected in the mains cable of the power supply module. The use of a mains choke provides the following advantages:

- **Fewer effects on the mains:**  
The wave form of the mains current is a close approximation to a sine wave.
- **Reduction in the effective mains current:**  
Reduction of mains, cable and fuse loads

Mains chokes can be used without restrictions in conjunction with RFI filters and/or sinusoidal filters.

**Please note:**

: The use of a mains choke slightly reduces the mains voltage at the input of the inverter - the typical voltage drop across the mains choke at the rated values is around 4%.



Mains choke

Typical motor power 4-pole asynchronous motor P [kW]	Mains voltage $U_{AC}$ [V]	Product key		Rated current $I_N$ [A]	Dimensions h x b x t [mm]	Mass m [kg]
		Inverter	Mains choke			
0.25	1 AC 180 ... 264	E84AV□□□2512□□□	ELN1-0900H005	5.00	75 x 66 x 82	1.1
0.37		E84AV□□□3712□□□				
0.55		E84AV□□□5512□□□	ELN1-0500H009	9.00	96 x 96 x 90	2.1
0.75		E84AV□□□7512□□□				
1.10		E84AV□□□1122□□□				
1.50		E84AV□□□1522□□□	ELN1-0250H018	18.0	96 x 96 x 90	2.1
2.20		E84AV□□□2222□□□				
0.37	3 AC 320 ... 550	E84AV□□□3714□□□	EZAELN3002B153	2.00	56 x 77 x 100	0.5
0.55		E84AV□□□5514□□□	EZAELN3004B742	4.00	60 x 95 x 115	1.3
0.75		E84AV□□□7514□□□				
1.10		E84AV□□□1124□□□	EZAELN3006B492	6.00	69 x 95 x 120	1.5
1.50		E84AV□□□1524□□□				
2.20		E84AV□□□2224□□□				
3.00		E84AV□□□3024□□□	EZAELN3008B372	8.00	85 x 120 x 140	1.9

# Inverter Drives 8400 BaseLine

## Accessories




### Brake switch


The brake switch consists of a rectifier and an electronic circuit breaker for the switching of an electromechanical brake switch. The brake switch is mounted on the control cabinet plate by means of two screws. Control is performed using a digital output on the inverter.



Brake switch

Mode	Features	Product key
Half-wave rectification	<ul style="list-style-type: none"><li>• Input voltage: AC 320 ... 550 V</li><li>• Output voltage: DC 180 V (at AC 400 V), DC 225 V (at AC 500 V)</li><li>• Max. brake current: DC 0.61 A</li><li>• IP00 degree of protection</li></ul>	E82ZWBRE
Bridge rectification	<ul style="list-style-type: none"><li>• Input voltage: AC 180 ... 317 V</li><li>• Output voltage: DC 205 V (at AC 230 V)</li><li>• Max. brake current: DC 0.54 A</li><li>• IP00 degree of protection</li></ul>	E82ZWBRB

 Data sheet on E82ZWBRE brake switch  
**DS\_Brake\_8400\_0001**  
Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

 Data sheet on E82ZWBRB brake switch  
**DS\_Brake\_8400\_0002**  
Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

# Inverter Drives 8400 BaseLine



## Accessories

### USB diagnostic adapter

The operation, parameter setting and diagnostics of the Inverter Drives 8400 and the Servo Drives 9400 via the L-force diagnostics is made with the keypad X400 or a PC. The connection of a PC can be made via a USB interface and the USB diagnostic adapter.


For connecting the USB diagnostic adapter with the L-force diagnostics interface (DIAG) at the inverter, three different connecting cables are separately available in the lengths 2.5 m, 5 m and 10 m. The connection can be established during operation. The engineering tools EASY Starter or Engineer can be used to carry out the operation, parameter setting or diagnostics of the inverters. Both tools have simple intuitive surfaces. This enables a quick and easy commissioning.

Optionally to the USB diagnostic adapter, the PC system bus adapter can be used. For this purpose, a CANopen interface must be available at the inverter.



USB diagnostic adapter incl. connecting cable to the PC

- The engineering tools EASY Starter or Engineer are used for operation, parameter setting and diagnostics of the inverters.

Mode		Features	Product key
USB diagnostic adapter		<ul style="list-style-type: none"> <li>• Input-side voltage supply via USB connection on PC</li> <li>• Output-side voltage supply via inverter's diagnostic interface</li> <li>• Diagnostic LEDs</li> <li>• Electrical isolation of PC and inverter</li> <li>• Hot-pluggable</li> </ul>	E94AZCUS

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### Connecting cables for USB diagnostic adapter

Mode	Features	Product key
Connecting cable for USB diagnostic adapter	• Length: 2.5 m	EWL0070
	• Length: 5 m	EWL0071
	• Length: 10 m	EWL0072

# Inverter Drives 8400 BaseLine

## Accessories



### PC system bus adapter

The operation, parameterisation and diagnostics of the Inverter Drives 8400 using a PC can also be carried out via the CANopen interface using a PC system bus adapter. This requires a PC system bus adapter instead of a USB diagnostic adapter. This adapter is plugged into the parallel interface or USB connection of the PC. The corresponding drivers will be installed automatically. The voltage for the adapter is supplied via the USB connection of the PC. The CANopen interface is integrated or available with a variant (BaseLine C).

**Advantage:**

- Operation, parameterisation and diagnostics in parallel with the keypad
- In interconnected systems, multiple inverters can be addressed simultaneously from one point (remote parameterisation via CANopen)



EMF2177IB adapter

Mode	Features	Product key
PC system bus adapter	<ul style="list-style-type: none"> <li>• Voltage supply via USB port on PC</li> <li>• Electrical isolation from the bus</li> </ul>	EMF2177IB

### Setpoint potentiometer

The setpoint selection (e.g. speed) can be made via an external potentiometer.

The setpoint potentiometer is connected to the inverter's analog input terminals. A scale and a rotary knob are also available.



Setpoint potentiometer with scale and rotary knob

Mode	Product key
10 kOhm / 1 Watt potentiometer	ERPD0010K0001W
Rotary knob, 36 mm diameter	ERZ0001
Scale 0 ... 100%, 62 mm diameter	ERZ0002

# Inverter Drives 8400 BaseLine

Accessories

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The Lenze logo consists of the word "Lenze" in a bold, blue, sans-serif font. The letter "L" is significantly larger than the other letters, and the "e"s are also larger than the other letters, creating a distinctive, stylized appearance.