




### Rated data for axis modules

- ▶ The data is valid for operation at 3/PE AC 400 V.
- ▶ Unless otherwise specified, the data refers to the default setting with a switching frequency of 8 kHz.

→ Rated data for operation at 3/PE/AC 480 V  
**DS\_GD\_9300\_0003**  
 Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

			
<b>Motor power</b> (asynchronous motor, 4-pole)	$P_N$ [kW]	<b>5.5</b>	<b>11</b>
<b>Product key</b>		<b>EVS9325-E□</b>	<b>EVS9326-E□</b>
<b>Mains voltage range</b>	$U_{\text{Netz}}$ [V]	3/PE AC 320 V -0% ... 528 V +0%; 45 Hz -0% ... 65 Hz +0%	
<b>Alternative DC supply</b>	$U_{\text{DC}}$ [V]	DC 460-0% ... 740 V+0%	
<b>Rated mains current</b> With mains choke <sup>1)</sup>	$I_{\text{Netz}}$ [A]	12	20.5
Without mains choke <sup>1)</sup>	$I_{\text{Netz}}$ [A]	16.8	-
<b>Rated output current</b> 8 kHz	$I_N$ [A]	13	23.5
16 kHz	$I_N$ [A]	9.7	15.3
<b>Max. output current</b> 8 kHz	$I_{\text{max}}$ [A]	19.5	35.3
16 kHz	$I_{\text{max}}$ [A]	14.6	23
<b>Brake chopper data</b> Continuous braking power	$P$ [kW]	11, depending on the external brake resistor	
Peak braking power	$P_{\text{BRmax}}$ [kW]	25	
Min. brake resistance	$R$ [Ohm]	27 ± 10%	
<b>Power loss</b>	$P_V$ [W]	260	360
<b>Dimensions</b> Height	$H$ [mm]	350	
Width	$B$ [mm]	135	
Depth	$T$ [mm]	250	
Depth "cold plate"	$T$ [mm]	158	
<b>Mass</b>	$m$ [kg]	7.5	
<b>Permissible motor cable length</b> Shielded	$l$ [m]	50	

<sup>1)</sup> Without mains filter

→ Dimensioned drawings for axis modules  
**DS\_MB\_9300\_0001**  
 Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)

→ Dimensioned drawings for "cold plate" axis modules  
**DS\_MB\_9300\_0004**  
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## 9300 servo inverter

### Axis modules

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		15	22	30
<b>Motor power</b> (asynchronous motor, 4-pole)	$P_N$ [kW]	15	22	30
<b>Product key</b>		EVS9327-E□	EVS9328-E□	EVS9329-E□
<b>Mains voltage range</b>	$U_{Netz}$ [V]	3/PE AC 320 V -0% ... 528 V +0%; 45 Hz -0% ... 65 Hz +0%		
<b>Alternative DC supply</b>	$U_{DC}$ [V]	DC 480-0% ... 740 V+0%		
<b>Rated mains current</b> With mains choke <sup>1)</sup>	$I_{Netz}$ [A]	27	44	53
Without mains choke <sup>1)</sup>	$I_{Netz}$ [A]	43.5	-	-
<b>Rated output current</b> 8 kHz	$I_N$ [A]	32	47	59
16 kHz	$I_N$ [A]	20.8	30.6	38
<b>Max. output current</b> 8 kHz	$I_{max}$ [A]	48	70.5	88.5
16 kHz	$I_{max}$ [A]	31.2	45.9	57
<b>Brake chopper data</b> Continuous braking power	$P$ [kW]	11, depending on the external brake resistor		
Peak braking power	$P_{BRmax}$ [kW]	25		
Min. brake resistance	$R$ [Ohm]	27 ± 10%		
<b>Power loss</b>	$P_V$ [W]	430	640	810
<b>Dimensions</b> Height	$H$ [mm]	350		
Width	$B$ [mm]	250		
Depth	$T$ [mm]	250		
Depth "cold plate"	$T$ [mm]	160	-	-
<b>Mass</b>	$m$ [kg]	13.5	15	-
<b>Permissible motor cable length</b> Shielded	$l$ [m]	50		

<sup>1)</sup> Without mains filter

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→ Dimensioned drawings for "cold plate" axis modules  
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<b>Motor power</b> (asynchronous motor, 4-pole)	$P_N$ [kW]	45	55	75
<b>Product key</b>		EVS9330-E□	EVS9331-E□	EVS9332-E□
<b>Mains voltage range</b>	$U_{\text{Netz}}$ [V]	3/PE AC 320 V -0% ... 528 V +0%; 45 Hz -0% ... 65 Hz +0%		
<b>Alternative DC supply</b>	$U_{\text{DC}}$ [V]	DC 480-0% ... 740 V+0%		
<b>Rated mains current</b> With mains choke <sup>1)</sup>	$I_{\text{Netz}}$ [A]	78	100	135
Without mains choke <sup>1)</sup>	$I_{\text{Netz}}$ [A]		-	
<b>Rated output current</b> 8 kHz	$I_N$ [A]	89	110	145
16 kHz	$I_N$ [A]	58	70	90
<b>Max. output current</b> 8 kHz	$I_{\text{max}}$ [A]	133.5	165	217.5
16 kHz	$I_{\text{max}}$ [A]	87	105	135
<b>Brake chopper data</b> Continuous braking power	$P$ [kW]	11, depending on the external brake resistor		
Peak braking power	$P_{\text{BRmax}}$ [kW]	25		
Min. brake resistance	$R$ [Ohm]	27 ± 10%		
<b>Power loss</b>	$P_V$ [W]	1100	1470	1960
<b>Dimensions</b> Height	$H$ [mm]	591		680
Width	$B$ [mm]	340		450
Depth	$T$ [mm]		285	
Depth "cold plate"	$T$ [mm]		-	
<b>Mass</b>	$m$ [kg]	38		59
<b>Permissible motor cable length</b> Shielded	$l$ [m]		50	

<sup>1)</sup> Without mains filter

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## 9300 servo inverter

### Regenerative power supply modules


#### Standards and operating conditions

<b>Product key</b> Short form	<b>EMB934□-E</b>
<b>Conformity</b>	CE: Low-Voltage Directive (73/23/EEC)
PWIS	Not fulfilled
RoHS	Not fulfilled
<b>Approvals</b> UL 508C	Power Conversion Equipment (file no. 132659)
<b>Enclosure</b> EN 60529	Protection degree of heatsink in design with thermal separation: IP 41 IP20
<b>Packaging</b>	25.9 kW: shipping container 7 kW ... 14 kW: dustproof packaging
<b>Vibration resistance</b>	Sinusoidal oscillation; Amplitude/acceleration (10 Hz ≤ f ≤ 57 Hz 0.075 mm, 57 Hz ≤ f ≤ 150 Hz 1 g), acceleration resistant up to 0.7 g acc. to Germanischer Lloyd
<b>Pollution degree</b> EN 61800-5-1	2
<b>Permissible installation height</b>	0 ... 4000 m amsl
Rated output current derating	Above 1000 m amsl by 5%/1000 m
Overtoltage category at and above 2000 m	Above 2000 m only for use in overvoltage category II
<b>Climatic conditions</b>	
Storage (EN 60721-3-1)	1K3 (temperature: -25°C ... + 55°C)
Transport (EN 60721-3-2)	2K3 (temperature: -25°C ... + 70°C)
Operation (EN 60721-3-3)	3K3 (temperature: 0°C ... + 50°C)
Rated output current derating	Above + 40°C by 2 %/°C
<b>Product key</b> Short form	<b>EMB934□-E</b>
<b>Noise emission</b> EN 61800-3	C2 with mains filter
<b>Noise immunity</b> EN 61800-3	Category C3
<b>Insulation resistance</b> EN 61800-5-1	Overtoltage category III, above 2000 m amsl overvoltage category II
<b>Protective insulation of control circuits</b> EN 61800-5-1	Safe isolation of mains: double/reinforced insulation for digital inputs and outputs
<b>Permissible supply forms</b>	Operation on TT systems, TN systems or systems with earthed neutral without additional measures Operation on IT systems not possible The devices are approved only for operation on symmetrical systems. Operation on systems with earthed phase conductor is not permitted.
<b>Leakage current to PE</b> EN 61800-5-1	> 3.5 mA
<b>Operation on public mains supplies</b> EN 61000-3-2	A limitation of harmonic currents to IEC 61000-3-2 is not relevant since the power limit of 1 kW is exceeded

<sup>1)</sup> Measured with eight 9300 controllers each with 10 m of shielded motor cable.



### Rated data for regenerative power supply modules

				
Product key		EMB9341-E	EMB9342-E	EMB9343-E
Regenerative power supply modules				
Mains voltage range	$U_{\text{Netz}}$ [V]	3/PE AC 320 V-0% ... 528 V+0%; 48 Hz-0% ... 62 Hz+0%		
Mains frequency range	f [Hz]	48 ... 62 +-0%		
Output power	$P_N$ [kW]	7	14	25.9
Regenerative power	P [kW]	7	14	25.9
Rated mains current With mains choke	$I_{\text{Netz}}$ [A]	12	24	45
Max. mains current	$I_{\text{Netz max}}$ [A]	18	36	67.5
Dimensions				
Height	H [mm]	384 (660 with filter)		404 (720 with filter)
Width	B [mm]	135		250
Depth	T [mm]	250		
Mass	m [kg]	7.5		13.5


→ Dimensioned drawings for power supply modules  
**DS\_MB\_9340\_0002**  
 Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



## 9300 servo inverter

### Regenerative power supply modules

#### Rated data for power supply modules

			
Product key		EME9364-E	EME9365-E
Power supply modules			
Mains voltage range	$U_{\text{Netz}}$ [V]	3/PE AC 100 V-0% ... 550 V+0%; 48 Hz-0% ... 62 Hz+0%	
Mains frequency range	$f$ [Hz]	48 ... 62 +-0%	
Rated mains current	$I_{\text{Netz}}$ [A]	74	148
With mains choke			
Max. mains current	$I_{\text{Netz max}}$ [A]	111	222
Output power	$P_N$ [kW]	50	100
+UG, -UG			
Max. output power	$P_{\text{max}}$ [kW]	75	
+UG, -UG			
DC-bus current	$I_{Z\_KN}$ [A]	90	180
Max. DC-bus current	$I_{ZK\_max}$ [A]	135	270
Power loss	$P_V$ [W]	173	389
Dimensions			
Height	H [mm]	280	
Width	B [mm]	175	
Depth	T [mm]	208	
Mass	$m$ [kg]	4.8	5.8

<sup>1)</sup> Mains voltage range for the connected blower: 1/PE AC 230 V

<sup>2)</sup> The following formula is used for dimensioning:  $I_r \cdot \sqrt{I_{\text{mains}}}$  ( $I_{\text{mains}}$  is the mains current of the controller with mains filter/choke). If interconnected drives are operating in generator mode or if not all drives are operating at the same time, the resulting mains current will be reduced accordingly.

<sup>3)</sup> Currents valid for periodic load change cycle with 1 minute overcurrent duration at the current specified here and 2 minutes base load duration at 75%  $I_N$

<sup>4)</sup> Measured with 8 9300 controllers each with 10 m of shielded motor cable

→ Dimensioned drawings for power supply modules  
**DS\_MB\_9360\_0002**  
 Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



### Braking units

#### Brake module EMB9351-E

For lower braking powers, the brake module EMB9351-E with integrated brake resistor can be used.

#### Brake chopper EMB9352-E

If a higher braking power is required, the brake chopper EMB9352-E can be used to obtain an optimum adaptation to the required braking power. For this purpose, the brake chopper is operated with an external brake resistor.



Brake module and brake chopper

- ▶ Although a higher brake power can be achieved by using other resistors or by connecting a number of resistors in parallel or series, the resistance value must not fall below the minimum  $R_{min}$  specified.
- ▶ When brake choppers and brake modules are combined, parallel connections are permissible.

The braking units can be mounted in "cold plate" design. These variants carry the following version codes:

- ▶ Brake module EMB9351-C-V003
- ▶ Brake chopper EMB9352-C-V003

### Standards and operating conditions

Product key Short form	EMB9351-□-□□□□	EMB9352-□-□□□□
Conformity	CE: Low-Voltage Directive (2006/95/EC) CE: Low-Voltage Directive (73/23/EEC)	
Approvals UL 508C	Power Conversion Equipment (file no. 132659)	
Enclosure EN 60529	IP20	
Packaging	Dustproof packaging	
Vibration resistance	Sinusoidal oscillation; Amplitude/acceleration (10 Hz ≤ f ≤ 57 Hz 0.075 mm, 57 Hz ≤ f ≤ 150 Hz 1 g), acceleration resistant up to 0.7 g acc. to Germanischer Lloyd	
Pollution degree EN 61800-5-1	2	
Permissible installation height	0 ... 4000 m amsl	
Rated output current derating	Above 1000 m amsl by 5%/1000 m	
Overvoltage category at and above 2000 m	Above 2000 m only for use in overvoltage category II	
Climatic conditions Storage (EN 60721-3-1)	- 25°C ... + 70°C	
Transport (EN 60721-3-2)	2K3 (temperature: -25°C ... + 70°C)	
Operation (EN 60721-3-3)	3K3 (temperature: 0°C ... + 55°C)	
Peak output current derating	Above + 40°C by 2.5 %/°C	
Protective insulation of control circuits EN 61800-5-1	Safe isolation of mains: double/reinforced insulation	
Clearance	Above and below 100 mm	




## 9300 servo inverter Accessories

### Functions and features

- ▶ The 9352-E brake chopper is designed for operation at brake resistances  $\geq 27$  Ohm with a DC-bus voltage of 765 V.
- ▶ The rated data applies to a brake resistance with 27 Ohm. The 9352-E brake chopper can conduct brake resistances from 18 Ohm if the maximum braking times / application times according to the Operating Instructions are adhered to. At 18 Ohm and 765 V DC-bus voltage, the maximum running time is 1 s and the maximum power 32 kW.

**If the running times are exceeded, this can result in a brake chopper failure - see EDBMB935X Operating Instructions.**

			
<b>Product key</b>		<b>EMB9351-E</b>	<b>EMB9352-E</b>
Brake module			
Brake chopper			
<b>Brake chopper data</b>			
DC-bus voltage	$U_{ZK}$ [V]	270 ... 775	
Continuous braking power	$P$ [kW]	0.1	11, depending on the external brake resistor <sup>1)</sup>
Peak braking power <sup>1)</sup>	$P_{BRmax}$ [kW]	12	25
Running time	$t_{on}$ [s]	4	1.33
Recovery time	$t_{re}$ [s]	500	1.67
Peak current	$I_{max}$ [A]	16	32
Continuous current, mean value	$I$ [A]		14
Continuous current, r.m.s. value	$I$ [A]		20
Max. braking energy	$W$ [kWs]	50	Dependent on the brake resistor
Min. brake resistance	$R$ [Ohm]	47	$27 \pm 10\%$ <sup>1, 2)</sup>
<b>Max. output current</b>			
Braking unit	$I_{DC\_max}$ [A]	16	42
<b>Dimensions</b>			
Height	$H$ [mm]		384
Width	$B$ [mm]		52
Depth	$T$ [mm]		186
<b>Mass</b>			
Braking unit	$m$ [kg]	2.6	2.2

<sup>1)</sup> for 765 V DC-bus voltage

<sup>2)</sup> Notes on the use of brake resistors < 27ohm can be found in the EDBMB935X Operating Instructions





### Brake choppers and brake resistors

► Brake resistors in IP20 enclosure

When a three-phase AC motor or a servo motor is braked by a frequency inverter, the motor operates in generator mode and feeds back energy to the inverter. This energy can be dissipated by means of a brake chopper. Due to this it is possible to brake the motor within a short time interval.



Brake resistor

Motor power	Mains voltage	Product key			Brake resistor data			
(asynchronous motor, 4-pole)		Inverter	Brake chopper	Brake resistor <sup>2)</sup>	Quantity <sup>1)</sup>	Resistance	Continuous power	Thermal capacity
P <sub>N</sub> [kW]	U <sub>Netz</sub> [V]					R [Ohm]	P [W]	CB [kW]
0.37	3 AC 400	EVS9321-E□	EMB9352-E	ERBD180R300W	1	180	300	45
0.75		EVS9322-E□		ERBD082R600W				
1.5		EVS9323-E□		ERBD068R800W				
3		EVS9324-E□		ERBD047R01K2				
5.5		EVS9325-E□		ERBD033R02K0				
11		EVS9326-E□						
15		EVS9327-E□		ERBD022R03K0 ERBD033R02K0	2	22	3000	240
22		EVS9328-E□						
30		EVS9329-E□			3	33	2000	240
45		EVS9330-E□						
55		EVS9331-E□						
75		EVS9332-E□						

<sup>1)</sup> Brake resistors and brake choppers

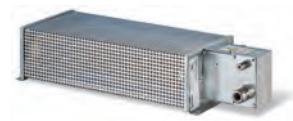
<sup>2)</sup> For maximum running time, see EDBMB935X Operating Instructions and page 30

Motor power	Mains voltage	Product key			Brake resistor data	
(asynchronous motor, 4-pole)		Inverter	Brake chopper	Brake resistor <sup>3)</sup>	Dimensions	Mass
P <sub>N</sub> [kW]	U <sub>Netz</sub> [V]				H x B x T [mm]	m [kg]
0.37	3 AC 400	EVS9321-E□	EMB9352-E	ERBD180R300W	439 x 64 x 142	2
0.75		EVS9322-E□				
1.5		EVS9323-E□		ERBD082R600W	639 x 64 x 142	3.1
3		EVS9324-E□		ERBD068R800W		
5.5		EVS9325-E□		ERBD047R01K2	639 x 172 x 142	4.9
11		EVS9326-E□		ERBD033R02K0		
15		EVS9327-E□		ERBD022R03K0 ERBD033R02K0	639 x 262 x 142	7.1
22		EVS9328-E□				
30		EVS9329-E□			739 x 172 x 247 639 x 262 x 142	10.6
45		EVS9330-E□				
55		EVS9331-E□				
75		EVS9332-E□				

<sup>3)</sup> For maximum running time, see EDBMB935X Operating Instructions and page 30

### Vibration-resistant brake resistors (IP20 enclosure)

Many electrical drives are used with their accompanying controllers in non-stationary units (e.g. storage and retrieval units). In order to achieve optimum operational reliability for these applications, Lenze also provides special vibration-resistant brake resistors.



Vibration-resistant brake resistor

Motor power	Mains voltage	Product key			Brake resistor data			
(asynchronous motor, 4-pole)		Inverter	Brake chopper	Brake resistor <sup>2)</sup>	Quantity <sup>1)</sup>	Resistance	Continuous power	Thermal capacity
P <sub>N</sub> [kW]	U <sub>Netz</sub> [V]					R [Ohm]	P [W]	CB [kW]
0.37	3 AC 400	EVS9321-E□	EMB9352-E	ERBD047R01K2RB	1	47	1200	180
0.75		EVS9322-E□						
1.5		EVS9323-E□						
3		EVS9324-E□						
5.5		EVS9325-E□						
11		EVS9326-E□						
15		EVS9327-E□		ERBD033R01K9RB	2	20	3000	450
22		EVS9328-E□						
30		EVS9329-E□						
45		EVS9330-E□		ERBD020R03K0RB	3			
55		EVS9331-E□						
75		EVS9332-E□						

<sup>1)</sup> Brake resistors and brake choppers

<sup>2)</sup> For maximum running time, see EDBMB935X Operating Instructions and page 30

Motor power	Mains voltage	Product key			Brake resistor data	
(asynchronous motor, 4-pole)		Inverter	Brake chopper	Brake resistor <sup>3)</sup>	Dimensions	Mass
P <sub>N</sub> [kW]	U <sub>Netz</sub> [V]				H x B x T [mm]	m [kg]
0.37	3 AC 400	EVS9321-E□	EMB9352-E	ERBD047R01K2RB	549 x 185 x 120	4.8
0.75		EVS9322-E□				
1.5		EVS9323-E□				
3		EVS9324-E□				
5.5		EVS9325-E□				
11		EVS9326-E□				
15		EVS9327-E□		ERBD033R01K9RB	749 x 185 x 120	6.6
22		EVS9328-E□				
30		EVS9329-E□				
45		EVS9330-E□		ERBD020R03K0RB	749 x 275 x 120	9.1
55		EVS9331-E□				
75		EVS9332-E□				

<sup>3)</sup> For maximum running time, see EDBMB935X Operating Instructions and page 30

→ Standards and operating conditions

**DS\_ZB\_ERBDV\_0001**

Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)



### Mains chokes

A mains choke is an inductor that is connected to the mains cable of the inverter. Using a mains choke offers the following advantages:

- ▶ **Reduced system perturbation:**  
The wave form of the mains current is a closer approximation of a sine wave.
- ▶ **Reduced r.m.s. mains current:**  
Reduction in mains, line and fuse load
- ▶ **Longer inverter service life:**  
Reducing the AC load on the electrolytic capacitors in the DC bus increases the service life of the capacitors.
- ▶ **DC-bus connection with multiple supplies**  
The DC-bus connection can be used to exchange energy between the axis modules and to reduce energy consumption.

Mains chokes or mains filters are always required for some inverters because otherwise the permissible rated data of the components used might be exceeded by the mains currents.

- ▶ See Rated data
- ▶ Mains chokes can be used without restriction together with RFI filters and/or motor filters.
- ▶ Please note:  
When using a mains choke, the maximum achievable output voltage of the axis modules is slightly reduced.



Mains choke

Motor power (asynchronous motor, 4-pole)	Mains voltage	Product key		Mains choke data		
			Mains choke	Rated current	Dimensions	Mass
$P_N$ [kW]	$U_{\text{Netz}}$ [V]			$I_N$ [A]	H x B x T [mm]	m [kg]
0.37	3 AC 400	EVS9321-E□	ELN3-0700H003	2.5	80 x 60 x 94	0.5
0.75		EVS9322-E□	ELN3-0450H004	4	65 x 62 x 92	0.7
1.5		EVS9323-E□	ELN3-0250H007	7	120 x 65 x 117	1.5
3		EVS9324-E□	ELN3-0160H012	12	152 x 79 x 155	4
5.5		EVS9325-E□	ELN3-0120H025	25	150 x 100 x 185	5.7
11		EVS9326-E□				
15		EVS9327-E□	ELN3-0088H035	35	180 x 125 x 225	9.8
22		EVS9328-E□	ELN3-0075H045	45		10.1
30		EVS9329-E□	ELN3-0055H055	55	228 x 120 x 265	13
45		EVS9330-E□	ELN3-0027H105	105	228 x 155 x 265	20.2
55		EVS9331-E□				
75		EVS9332-E□	ELN3-0017H170	170	265 x 170 x 268	30.3

### Mains filter

A mains filter is a combination of mains choke and RFI filter in one housing. Mains filters offer the same advantages as mains chokes. In addition, they enable compliance with the interference voltage categories of the European standard EN 61800-3. There a distinction is drawn between category C1 and category C2.

**Category C1** describes the use on public supply networks. **Category C2** describes the use of drives which are intended for industrial purposes in areas also comprising residential areas.

For the 9300 servo inverters, the components mains filter A, mains filter B and mains filter are available for compliance with the interference voltage categories.

The components are selected in accordance with the motor cable length and the required interference voltage category.

- ▶ see data tables
- ▶ Category C2, cable length up to 5 / 25 m --> mains filter A
- ▶ Category C2, cable length up to 50 m --> mains filter
- ▶ Category C1, cable length up to 10 m --> mains filter
- ▶ Category C1, cable length up to 50 m --> mains filter B
- ▶ The filters are designed as side-by-side-mounted and footprint filters.
- ▶ When mounting the servo inverter according to the "push-through technique" or "cold plate" technology, only footprint mains filters can be used for interference suppression.

### Mains filter, C1 up to 10 m and C2 up to 50 m

For controllers with a power range from 15 to 75 kW, the mains filter is used to operate drives with up to 50 m motor cable length in industrial areas or up to 10 m motor cable length on public supply systems. With the mains filters, EN 61800-3 category C1 up to 10 m motor cable length and EN 61800-3 category C2 up to 50 m motor cable length is complied with.

In addition to reducing the line-bound noise emission into the mains network, a mains filter replaces the function of a mains choke. The r.m.s. current is also reduced. Some drive controllers always require the use of mains chokes or mains filters because otherwise the permissible rated component data might be exceeded by the mains currents.

- ▶ See Rated data

The mains filters are available in the power range from 15 to 75 kW.



Mains filters A and B

- ▶ The filters are designed as footprint filters.
- ▶ When mounting the servo inverter according to the "push-through technique" or "cold plate" technology, only footprint mains filters A and B can be used for interference suppression.
- ▶ The filters meet the requirements of UL/cUL.
- ▶ They have an adapted connecting cable and must be mounted in the direct proximity of the inverter to ensure compliance with the limit values.

Motor power (asynchronous motor, 4-pole)	Mains voltage	Product key		Mains filter data		
		Inverter	Mains filter	Rated current	Dimensions	Mass
$P_N$ [kW]	$U_{\text{Netz}}$ [V]			$I_N$ [A]	H x B x T [mm]	m [kg]
15	3 AC 400	EVS9327-E□	E82ZZ15334B230	43	410 x 236 x 110	6
22		EVS9328-E□	E82ZN22334B230	42		13
30		EVS9329-E□	E82ZN30334B230	55		19
45		EVS9330-E□	E82ZN55334B230	100	685 x 318 x 114	29
55		EVS9331-E□	E82ZN75334B230	135	760 x 428 x 114	53
75		EVS9332-E□				



## Mains filter A, C2 up to 5m or 25m

Mains filter A is used to operate 9300 controllers in industrial areas, e.g. on industrial supply networks. With mains filter A, EN 61800-3 category C2 up to 5 m or 25 m motor cable length is complied with.

Motor power	Mains voltage	Product key		Mains filter A data			
(asynchronous motor, 4-pole)		Inverter	Mains filter	Max. cable length C2	Rated current	Dimensions	Mass
$P_N$ [kW]	$U_{Netz}$ [V]			l [m]	$I_N$ [A]	H x B x T [mm]	m [kg]
0.37	3 AC 400	EVS9321-E□	EZN3A2400H002 <sup>1)</sup>	5	1.5	80 x 68 x 92	0.8
0.75		EVS9322-E□	EZN3A1500H003 <sup>1)</sup>		2.5	95 x 82 x 115	1.2
1.5		EVS9323-E□	EZN3A0900H004 <sup>1)</sup>		4	98 x 70 x 105	1.4
3		EVS9324-E□	EZN3A0500H007 <sup>1)</sup>		7	120 x 75 x 122	2.4
5.5		EVS9325-E□	EZN3A0300H013 <sup>1)</sup>		13	152 x 100 x 142	5.2
11		EVS9326-E□	EZN3A0150H024 <sup>1)</sup>		24	260 x 135 x 230	8.9
15		EVS9327-E□	EZN3A0110H030 <sup>2)</sup>	25	30	365 x 234 x 228	14.4
22		EVS9328-E□	EZN3A0080H042 <sup>2)</sup>		42		16.3
30		EVS9329-E□	EZN3A0055H060 <sup>2)</sup>		60	366 x 241 x 285	30.5
45		EVS9330-E□	EZN3A0030H110 <sup>2)</sup>		110	515 x 323 x 285	47
55		EVS9331-E□	EZN3A0022H150 <sup>2)</sup>		150	655 x 426 x 208	60
75		EVS9332-E□					

<sup>1)</sup> The mains filter meets the requirements to UL/cUL.

<sup>2)</sup> The filter has an adapted connection cable and must be mounted directly above the inverter for complying with the limit values.

Output power	Mains voltage	Product key		Mains filter A data			
+UG, -UG			Mains filter	Max. cable length C2	Rated current	Dimensions	Mass
$P_N$ [kW]	$U_{Netz}$ [V]			l [m]	$I_N$ [A]	H x B x T [mm]	m [kg]
7	3 AC 400	EMB9341-E	EZN3A0120H012	10	12	178 x 130 x 210	9.9
14		EMB9342-E	EZN3A0088H024		24	380 x 135 x 230	23.4
25.9		EMB9343-E	EZN3A0055H045		45	366 x 241 x 285	38

### Mains filter B, C1 up to 50 m

Mains filter B is used to operate 9300 controllers on public supply networks or in industrial areas. With mains filter B, EN 61800-3 category C1 up to 50 m motor cable length is complied with.

Motor power (asynchronous motor, 4-pole)	Mains voltage	Product key		Mains filter B data			
		Inverter	Mains filter	Rated current	Max. cable length C1	Dimensions	Mass
$P_N$ [kW]	$U_{\text{Netz}}$ [V]			I [A]	l [m]	H x B x T [mm]	m [kg]
0.37	3 AC 400	EVS9321-E□	EZN3B2400H002 <sup>1)</sup>	1.5	50	150 x 78 x 230	2.5
0.75		EVS9322-E□	EZN3B1500H003 <sup>1)</sup>	2.5			3
1.5		EVS9323-E□	EZN3B0900H004 <sup>1)</sup>	4			3.1
3		EVS9324-E□	EZN3B0500H007 <sup>1)</sup>	7		180 x 97 x 230	4.6
5.5		EVS9325-E□	EZN3B0300H013 <sup>1)</sup>	13		260 x 135 x 230	11.8
11		EVS9326-E□	EZN3B0150H024 <sup>1)</sup>	24			12.1
15		EVS9327-E□	EZN3B0110H030 <sup>2)</sup>	30		365 x 234 x 228	20.5
22		EVS9328-E□	EZN3B0080H042 <sup>2)</sup>	42			30
30		EVS9329-E□	EZN3B0055H060 <sup>2)</sup>	60		336 x 241 x 285	50
45		EVS9330-E□	EZN3B0030H110 <sup>2)</sup>	110		515 x 323 x 285	65
55		EVS9331-E□	EZN3B0022H150 <sup>2)</sup>	150		655 x 426 x 208	30
75		EVS9332-E□					

<sup>1)</sup> The mains filter meets the requirements to UL/cUL.

<sup>2)</sup> The filter has an adapted connection cable and must be mounted directly above the inverter for complying with the limit values.

Output power	Mains voltage	Product key		Mains filter B data			
			Mains filter	Rated current	Max. cable length C1	Dimensions	Mass
+UG, -UG	$U_{\text{Netz}}$ [V]			I [A]	l [m]	H x B x T [mm]	m [kg]
50	3 AC 400/500	EME9364-E	EZN3B0110H030U	30	50	361 x 235 x 140	14.2
			EZN3B0080H042	42		365 x 234 x 228	20.5
			EZN3B0055H060	60		336 x 241 x 285	30
100		EME9365-E	EZN3B0037H090	90		515 x 323 x 285	42
			EZN3B0030H110	110			50
			EZN3B0022H150	150		655 x 426 x 208	65

### Interference filter for SinCos encoder

If the connection between the motor cable shield and PE is not large enough, this may cause interference on the encoder lines. We recommend the use of an interference filter on SinCos encoders in particular if you are using long motor cables and the earthing conditions are not ideal. The filter is then simply mounted on the encoder input of the controller (design: Gender Changer 9-pin Sub-D socket/plug).

Design	Product key
Interference filter for SinCos encoder	EZZ0014



### Mounting in push-through technique (thermal separation of the heatsink)

- ▶ For units in the power range 0.37 kW to 75 kW mounting sets for thermal separation ("push-through technique") are available.
- ▶ The protection class of the separate cooler is IP 41.
- ▶ When the servo inverters are mounted in "push-through" technique or "cold plate" technique, only built-on mains filters can be used for interference suppression.

Thermal separation of the heatsink is recommended for some applications. It significantly reduces heat generation inside the control cabinet.

Units with the heatsink outside the control cabinet can be supplied for such applications. The power loss is distributed as follows:

- ▶ Approx. 65% via separated cooler (heatsink and fan),
- ▶ Approx. 35% internally in the drive.

The use of thermally separated heatsinks is particularly suitable for applications in which self-ventilation via the control cabinet surface is insufficient. The "push-through technique" special design enables air conditioners or fans with lower ratings to be used or, in some cases, to be left out altogether.

Motor power (asynchronous motor, 4-pole)	Mains voltage	Product key		Mounting cut-out		Dimensions				
			Mounting frame	Height	Width	Width - "push-through technique"	Height - "push-through technique"	Depth (cabinet side)		
P <sub>N</sub> [kW]	U <sub>Netz</sub> [V]					B [mm]	H [mm]	f [mm]		
0.37	3 AC 400	EVS9321-E□	EJ0036	350 ± 3	82 ± 3	112.5	385.5	158		
0.75		EVS9322-E□								
1.5		EVS9323-E□	EJ0037						101 ± 3	131.5
3		EVS9324-E□								
5.5		EVS9325-E□	EJ0038						139 ± 3	169.5
11		EVS9326-E□								
15		EVS9327-E□	EJ0011	336 + 1	236 + 1	279.5	379.5	159.5		
22		EVS9328-E□								
30		EVS9329-E□								
45		EVS9330-E□	EJ0010	429 ± 1	320 ± 1	373	543	163.5		
55		EVS9331-E□								
75		EVS9332-E□							EJ0009	698 + 1

→ Dimensioned drawings for axis modules in push-through technique  
**DS\_MB\_9300\_0005**  
 Available for download at [www.lenze.de/dsc](http://www.lenze.de/dsc)