

OVERVIEW

SINE FILTERS/MOTOR REACTORS

	Motor reactor	Type	Sort	Voltage range														
					0.55 kW	1.1 W	1.5 kW	2.2 kW	3 MW	4 kW	5.5 kW	7.5 kW	11 kW	15 kW	18.5 kW	18.5 kW / 22 kW		
Sine filter	MDB	Motor reactor	3 x 0 – 500 Vac				6.3 A		9.4 A	13 A	16 A	24 A	30 A	39 A				
	MR3	Motor reactor	3 x 0 – 500 Vac		2.5 A	4 A	6 A	8 A	10 A		18 A	24 A	30 A	37 A	42 A			
	SFB	Sine filter	3 x 0 – 520 Vac			4 A			10 A		16.5 A	23.5 A	32 A	37 A				
	SFA 400	All-pole sine filter	3 x 0 – 480 Vac	1.3 A	2.5 A	4 A	6 A		10 A		16.5 A	24 A	32 A	40 A				
	SFA 500	All-pole sine filter	3 x 0 – 500 Vac				6 A			13 A		24 A						

	22 kW	30 kW	37 kW	45 kW	55 kW	75 kW	90 kW	132 kW	250 kW	260 kW	Page
	46 A	61 A	72 A	91 A	110 A	150 A	176 A				572
	48 A	61 A									576
	48 A	61 A	72 A	90 A	115 A	150 A	180 A	250 A	440 A	480 A	580
	50 A	60 A									585
	46 A	65 A									589



1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

Motor reactor MDB



General Data

Rated voltage 3 x 400 Vac
Rated current 6.3 - 176 A
For motor rated output 2.2 - 90 kW
For switching frequencies of 2 to 6 kHz
Rated frequency from 0 to 120 Hz
Insulation class F
Maximum ambient temperature 40 °C
Degree of protection IP 00

Advantages

High damping of edge steepness
High damping of inverter switching frequency
Reduction of leakage current
Long shielded cable lengths possible
High efficiency
Very good corrosion protection and low noise thanks to vacuum impregnation

Standards

Output reactor for frequency inverter
DIN EN 61558-2-20, IEC 61558-2-20

Approvals



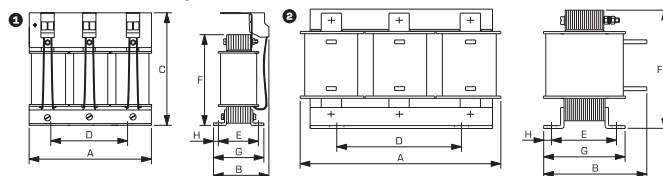


Motor reactor MDB



Electrical data	Typ	MDB 400/6,3	MDB 400/9,4	MDB 400/13	MDB 400/16	MDB 400/24	MDB 400/30
	Operating data						
	Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
	Voltage range	0 - 3 x 500 Vac	0 - 3 x 500 Vac	0 - 3 x 500 Vac	0 - 3 x 500 Vac	0 - 3 x 500 Vac	0 - 3 x 500 Vac
	Rated current	6.30 A	9.40 A	13.00 A	16.00 A	24.00 A	30.00 A
	for motor rated output approx.	2.20 kW	4.00 kW	5.50 kW	7.50 kW	11.00 kW	15.00 kW
	Inductance	2.000 mH	0.900 mH	0.900 mH	0.900 mH	0.450 mH	0.450 mH
	Rated frequency	0 - 120 Hz	0 - 120 Hz	0 - 120 Hz	0 - 120 Hz	0 - 120 Hz	0 - 120 Hz
	Switching frequency	2 - 6 kHz	2 - 6 kHz	2 - 6 kHz	2 - 6 kHz	2 - 6 kHz	2 - 6 kHz
Environment	Environment						
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Safety and protection	Safety and protection						
	Type	Open type	Open type	Open type	Open type	Open type	Open type
	Insulation class	F	F	F	F	F	F
	Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz
Order numbers	Order numbers						
	Order Number	MDB 400/6,3	MDB 400/9,4	MDB 400/13	MDB 400/16	MDB 400/24	MDB 400/30
Mechanical data	Terminal and mounting						
	Terminals phase	Screw clamp, 2,5 mm ²	Screw clamp, 2,5 mm ²	Screw clamp, 4 mm ²	Screw clamp, 10 mm ²	Screw clamp, 10 mm ²	Flat copper
	Terminals PE	Bolt, M4	Bolt, M4	Bolt, M4	Bolt, M4	Bolt, M4	Bolt, M6
	Fixing method	Fixing rail	Fixing rail	Fixing rail	Fixing rail	Fixing rail	Fixing rail
	Fixing screws	M5	M5	M5	M6	M6	M6
Measures and weights	Measures and weights						
	Weight	4.50 kg	4.50 kg	5.50 kg	10.00 kg	10.00 kg	11.20 kg
	Dimension picture (in mm)	①	①	①	①	①	②
	A	155	155	155	190	190	210
	B	70	70	85	115	115	130
	C	160	160	160	193	193	-
	D	130	130	130	170	170	175
	E	55	55	70	75	75	95
	F	128	128	128	155	155	182
	G	75	75	90	100	100	115
	H	10	10	10	12.5	12.5	10

Dimension pictures



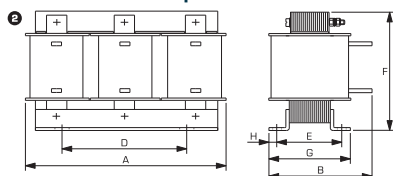


Motor reactor MDB



Electrical data	Typ	MDB 400/39	MDB 400/46	MDB 400/61	MDB 400/72	MDB 400/91	MDB 400/110
	Operating data						
	Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
	Voltage range	0 - 3 x 500 Vac	0 - 3 x 500 Vac	0 - 3 x 500 Vac	0 - 3 x 500 Vac	0 - 3 x 500 Vac	0 - 3 x 500 Vac
	Rated current	39.00 A	46.00 A	61.00 A	72.00 A	91.00 A	110.00 A
	for motor rated output approx.	18.50 kW	22.00 kW	30.00 kW	37.00 kW	45.00 kW	55.00 kW
	Inductance	0.300 mH	0.150 mH	0.100 mH	0.050 mH	0.050 mH	0.050 mH
	Rated frequency	0 - 120 Hz	0 - 120 Hz	0 - 120 Hz	0 - 120 Hz	0 - 120 Hz	0 - 120 Hz
	Switching frequency	2 - 6 kHz	2 - 6 kHz	2 - 6 kHz	2 - 6 kHz	2 - 6 kHz	2 - 6 kHz
Environment	Environment						
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Safety and protection	Safety and protection						
	Type	Open type	Open type	Open type	Open type	Open type	Open type
	Insulation class	F	F	F	F	F	F
	Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz
Order numbers	Order numbers						
	Order Number	MDB 400/39	MDB 400/46	MDB 400/61	MDB 400/72	MDB 400/91	MDB 400/110
Mechanical data	Terminal and mounting						
	Terminals phase	Flat copper	Flat copper	Flat copper	Flat copper	Flat copper	Flat copper
	Terminals PE	Bolt, M6	Bolt, M6	Bolt, M6	Bolt, M6	Bolt, M6	Bolt, M8
	Fixing method	Fixing rail	Fixing rail	Fixing rail	Fixing rail	Fixing rail	Fixing rail
	Fixing screws	M6	M6	M6	M6	M6	M8
Measures and weights	Measures and weights						
	Weight	11.30 kg	10.30 kg	10.30 kg	10.30 kg	10.30 kg	20.00 kg
	Dimension picture (in mm)	2	2	2	2	2	2
	A	210	210	210	210	210	240
	B	130	120	120	120	120	131
	C	-	-	-	-	-	-
	D	175	175	175	175	175	190
	E	95	85	85	85	85	95
	F	182	182	182	182	182	205
	G	115	105	105	105	105	121
	H	10	10	10	10	10	13

Dimension pictures



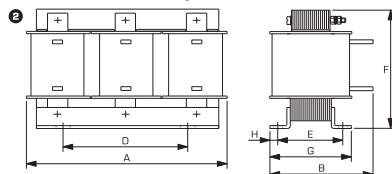


Motor reactor MDB

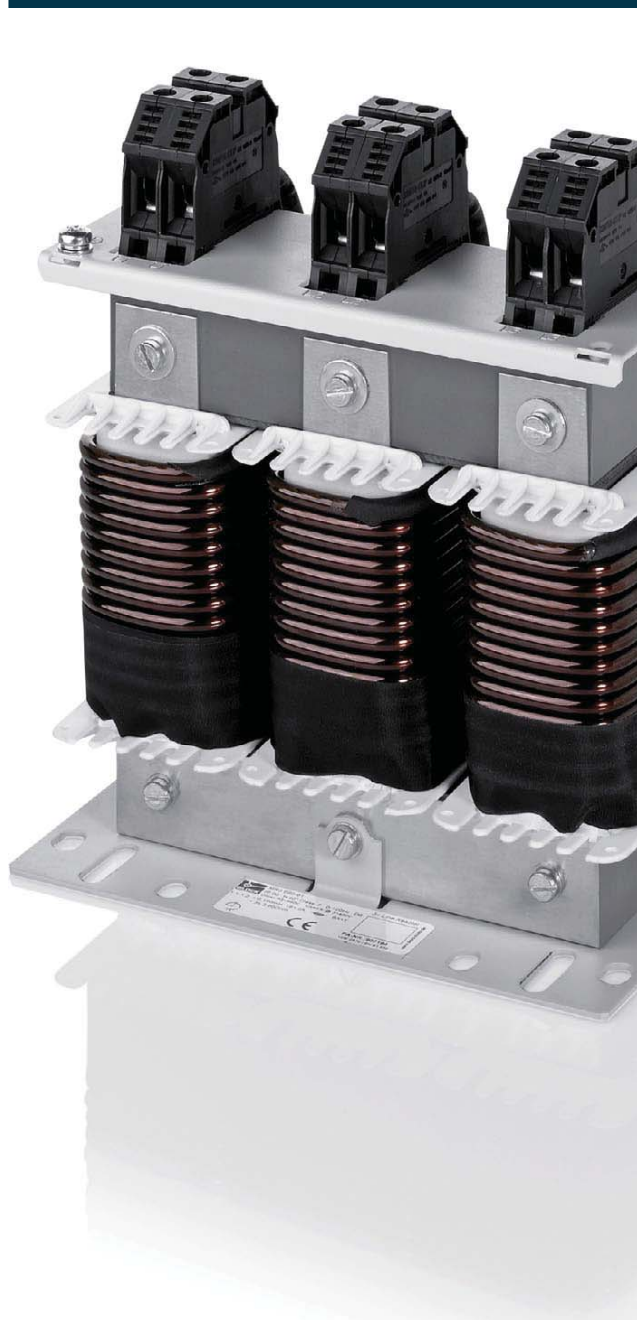


Electrical data	Typ	MDB 400/150	MDB 400/176
	Operating data		
Rated voltage		3 x 400 Vac	3 x 400 Vac
Voltage range		0 - 3 x 500 Vac	0 - 3 x 500 Vac
Rated current		150.00 A	176.00 A
for motor rated output approx.		75.00 kW	90.00 kW
Inductance		0.050 mH	0.050 mH
Rated frequency		0 - 120 Hz	0 - 120 Hz
Switching frequency		2 - 6 kHz	2 - 6 kHz
Environment			
Ambient temperature max.		40 °C	40 °C
Safety and protection			
Type		Open type	Open type
Insulation class		F	F
Protection index		IP 00	IP 00
Safety class (prepared)		I	I
Test voltage		2500 Vac, 50 Hz	2500 Vac, 50 Hz
Order numbers			
Order Number		MDB 400/150	MDB 400/176
Mechanical data	Terminal and mounting		
Terminals phase		Flat copper	Flat copper
Terminals PE		Bolt, M8	Bolt, M8
Fixing method		Fixing rail	Fixing rail
Fixing screws		M8	M8
Measures and weights			
Weight		24.30 kg	27.50 kg
Dimension picture (in mm)			
A		240	240
B		141	165
C		-	-
D		190	190
E		105	129
F		205	205
G		131	155
H		13	13

Dimension pictures



Motor reactor MR3 400



General Data

Rated voltage 3 x 400 Vac
Rated current 2.5 - 61.0 A
For motor rated output 0.75 - 30 kW
For switching frequencies of 3 to 8 kHz
Rated frequency from 0 to 50 Hz
Inductance 2.55 - 0.10 mH
Insulation class B
Maximum ambient temperature 40 °C

Advantages

High damping of edge steepness
High damping of inverter switching frequency
Reduction of leakage current at low construction volumes
Long shielded cable lengths possible
High efficiency
Very good corrosion protection and low noise thanks to vacuum impregnation

Applications

Motor reactor for the limitation of the voltage peaks damaging to the motor insulation (dv/dt).

Standards

Output reactor for frequency inverter
DIN EN 61558-2-20, IEC 61558-2-20

Approvals





Motor reactor MR3 400



1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

Typ	MR3 400/2,5	MR3 400/4	MR3 400/6	MR3 400/8	MR3 400/10	MR3 400/13
Electrical data						
Operating data						
Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
Voltage range	3 x 0 - 500 Vac	3 x 0 - 500 Vac	3 x 0 - 500 Vac	3 x 0 - 500 Vac	3 x 0 - 500 Vac	3 x 0 - 500 Vac
Rated current	2.5 A	4 A	6 A	8 A	10 A	13 A
for motor rated output approx.	0.75 kW	1.10 kW	2.20 kW	3.00 kW	4.00 kW	5.50 kW
Inductance	2.550 mH	1.590 mH	1.060 mH	0.800 mH	0.640 mH	0.490 mH
Rated frequency	0 - 50 Hz	0 - 50 Hz	0 - 50 Hz	0 - 50 Hz	0 - 50 Hz	0 - 50 Hz
Switching frequency	3 - 8 kHz	3 - 8 kHz	3 - 8 kHz	3 - 8 kHz	3 - 8 kHz	3 - 8 kHz
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class (prepared)	I	I	I	I	I	I
Test voltage	4000 Vac, 50 Hz	4000 Vac, 50 Hz	4000 Vac, 50 Hz	4000 Vac, 50 Hz	4000 Vac, 50 Hz	4000 Vac, 50 Hz
Insulation class	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=F, UL=class 130	VDE=F, UL=class 130
Order numbers						
Order Number	MR3 400/2,5	MR3 400/4	MR3 400/6	MR3 400/8	MR3 400/10	MR3 400/13

Typ	MR3 400/18	MR3 400/24	MR3 400/30	MR3 400/37	MR3 400/42	MR3 400/48
Electrical data						
Operating data						
Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
Voltage range	3 x 0 - 500 Vac	3 x 0 - 500 Vac	3 x 0 - 500 Vac	3 x 0 - 500 Vac	3 x 0 - 500 Vac	3 x 0 - 500 Vac
Rated current	18 A	24 A	30 A	37 A	42 A	48 A
for motor rated output approx.	7.50 kW	11.00 kW	15.00 kW	18.50 kW	22.00 kW	22.00 kW
Inductance	0.350 mH	0.270 mH	0.210 mH	0.170 mH	0.150 mH	0.130 mH
Rated frequency	0 - 50 Hz	0 - 50 Hz	0 - 50 Hz	0 - 50 Hz	0 - 50 Hz	0 - 50 Hz
Switching frequency	3 - 8 kHz	3 - 8 kHz	3 - 8 kHz	3 - 8 kHz	3 - 8 kHz	3 - 8 kHz
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class (prepared)	I	I	I	I	I	I
Test voltage	4000 Vac, 50 Hz	4000 Vac, 50 Hz	4000 Vac, 50 Hz	4000 Vac, 50 Hz	4000 Vac, 50 Hz	4000 Vac, 50 Hz
Insulation class	VDE=F, UL=class 130	VDE=F, UL=class 130	VDE=F, UL=class 130	VDE=F, UL=class 130	VDE=F, UL=class 130	VDE=F, UL=class 130
Order numbers						
Order Number	MR3 400/18	MR3 400/24	MR3 400/30	MR3 400/37	MR3 400/42	MR3 400/48



Motor reactor **MR3 400**



Electrical data	Type	MR3 400/61				
	Operating data					
	Rated voltage	3 x 400 Vac				
	Voltage range	3 x 0 - 500 Vac				
	Rated current	61 A				
	for motor rated output approx.	30.00 kW				
	Inductance	0.100 mH				
	Rated frequency	0 - 50 Hz				
	Switching frequency	3 - 8 kHz				
	Approvals					
Approvals	cURus					
Environment						
Ambient temperature max.	40 °C					
Safety and protection						
Type	Open type					
Protection index	IP 00					
Safety class (prepared)	I					
Test voltage	4000 Vac, 50 Hz					
Insulation class	VDE=F, UL=class 130					
Order numbers						
Order Number	MR3 400/61					

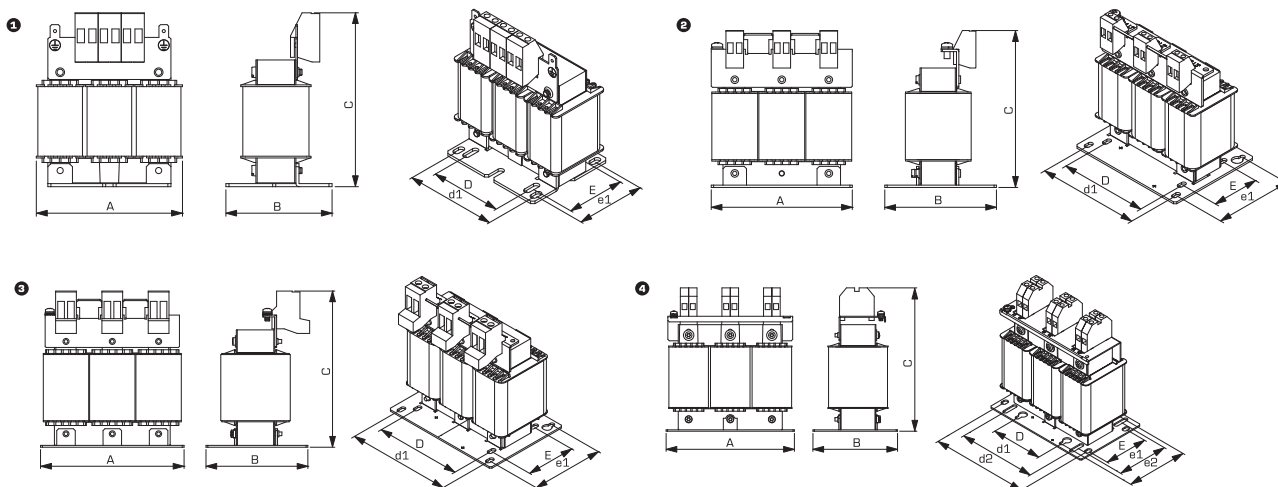


Motor reactor MR3 400



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	d1	d2	E	e1	e2	F
30	MR3 400/2.5	Screw clamp, 4 mm ²	Bolt, M4	Fixing rail	M4	0.8 kg	1	78	63	100	50	65	-	42	47	-	-
	MR3 400/4	Screw clamp, 4 mm ²	Bolt, M4	Fixing rail	M4	0.9 kg	1	77	63	100	50	65	-	42	47	-	-
	MR3 400/6	Screw clamp, 4 mm ²	Bolt, M4	Fixing rail	M4	1.1 kg	1	95	60	117	56	71	-	38	45	-	-
	MR3 400/8	Screw clamp, 4 mm ²	Bolt, M4	Fixing rail	M4	1.2 kg	1	95	60	117	56	71	-	38	45	-	-
	MR3 400/10	Screw clamp, 4 mm ²	Bolt, M4	Fixing rail	M4	1.8 kg	2	120	85	140	90	105	-	35	68	-	-
	MR3 400/13	Screw clamp, 4 mm ²	Bolt, M5	Fixing rail	M4	1.9 kg	2	240	170	276.8	90	105	-	39	63.5	-	-
	MR3 400/18	Screw clamp, 4 mm ²	Bolt, M5	Fixing rail	M4	2.1 kg	2	240	190	274.6	49	73.5	-	45	78	-	-
	MR3 400/24	Screw clamp, 4 mm ²	Bolt, M5	Fixing rail	M4	2.2 kg	2	120	95	142	90	105	-	49	73.5	-	-
	MR3 400/30	Screw clamp, 4 mm ²	Bolt, M5	Fixing rail	M5	3.5 kg	3	155	95	170	113	135	-	50	72.4	-	-
	MR3 400/37	Screw clamp, 4 mm ²	Bolt, M5	Fixing rail	M5	3.6 kg	3	310	190	335.4	113	135	-	50	72.4	-	-
	MR3 400/42	Screw clamp, 10 mm ²	Bolt, M5	Fixing rail	M5	6.5 kg	3	155	110	170	113	135	-	65	87.4	-	-
	MR3 400/48	Screw clamp, 16 mm ²	Bolt, M5	Fixing rail	M5	6.5 kg	4	185	100	211	136	170	-	70	57.5	-	-
	MR3 400/61	Screw clamp, 16 mm ²	Bolt, M6	Fixing rail	M6	7.8 kg	4	185	112	210	136	170	-	80	67	-	-

Dimension pictures



Sine filter **SFB**



General Data

Rated voltage 3 x 400 Vac
Rated current 4 - 480 A
For motor rated output 1.5 - 260 kW
For switching frequencies of 4 to 8 kHz
Rated frequency from 0 to 150 Hz
Insulation class H
Maximum ambient temperature 40 °C
Degree of protection IP 00

Advantages

Prevention of overvoltages on the motor
Long cable lengths possible
Reduction in motor noise
Reduction in line-borne and field-borne emitted interference
Reduction in motor losses
Very good corrosion protection and low noise thanks to vacuum impregnation

Applications

Sine filter for the suppression of differential mode interference.

Standards

Output filter with capacitor for frequency inverters complying with
DIN EN 61558-2-20, IEC 61558-2-20, UL 508, CSA 22.2 No. 14-9195

Approvals



UL 508, CSA 22.2 No 14-9195



Sine filter

SFB



Electrical data	Typ	SFB 400/4	SFB 400/10	SFB 400/16,5	SFB 400/23,5	SFB 400/32	SFB 400/37
	Operating data						
	Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
	Voltage range	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
	Voltage drop	7.5 % @ 400 Vac	7 % @ 400 Vac	7.5 % @ 400 Vac	8 % @ 400 Vac	8.7 % @ 400 Vac	8.6 % @ 400 Vac
	Rated current	4 A	10 A	16.5 A	23.5 A	32 A	37 A
	for motor rated output approx.	1.50 kW	4.00 kW	7.50 kW	11.00 kW	15.00 kW	18.50 kW
	Rated frequency	0 - 150 Hz	0 - 150 Hz	0 - 150 Hz	0 - 150 Hz	0 - 150 Hz	0 - 150 Hz
	Switching frequency	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz
	Approvals	cURus	cURus	cURus	cURus	cURus	cURus
	Environment						
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
	Safety and protection						
	Type	Open type	Open type	Open type	Open type	Open type	Open type
	Insulation class	H	H	H	H	H	H
	Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz
	Order numbers						
	Order Number	SFB 400/4	SFB 400/10	SFB 400/16,5	SFB 400/23,5	SFB 400/32	SFB 400/37

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



Sine filter **SFB**



Electrical data	Typ	SFB 400/48	SFB-N 400/61	SFB-N 400/72	SFB-N 400/90	SFB 400/115	SFB 400/150
	Operating data						
	Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
	Voltage range	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
	Voltage drop	7.8 % @ 400 Vac	8.3 % @ 400 Vac	7.5 % @ 400 Vac	10 % @ 400 Vac	11 % @ 400 Vac	10.2 % @ 400 Vac
	Rated current	48 A	61 A	72 A	90 A	115 A	150 A
	for motor rated output approx.	22.00 kW	30.00 kW	37.00 kW	45.00 kW	55.00 kW	75.00 kW
	Rated frequency	0 - 150 Hz	0 - 150 Hz	0 - 150 Hz	0 - 150 Hz	0 - 150 Hz	0 - 150 Hz
	Switching frequency	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz
	Approvals						
	Approvals	cURus	cURus	cURus	cURus	cURus	cURus
	Environment						
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
	Safety and protection						
	Type	Open type	Open type	Open type	Open type	Open type	Open type
	Insulation class	H	H	H	H	H	H
	Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz
	Order numbers						
	Order Number	SFB 400/48	SFB-N 400/61	SFB-N 400/72	SFB-N 400/90	SFB 400/115	SFB 400/150



Sine filter **SFB**



Electrical data	Typ	SFB 400/180	SFB 400/250	SFB 400/440	SFB 400/480
	Operating data				
	Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
	Voltage range	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac	0 - 520 Vac
	Voltage drop	7.5 % @ 400 Vac	7.5 % @ 400 Vac	7.5 % @ 400 Vac	7 % @ 400 Vac
	Rated current	180 A	250 A	440 A	480 A
	for motor rated output approx.	90.00 kW	132.00 kW	250.00 kW	260.00 kW
	Rated frequency	0 - 60 Hz	0 - 60 Hz	0 - 60 Hz	0 - 60 Hz
	Switching frequency	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz	4 - 8 kHz
	Approvals	cURus	-	-	-
	Environment				
	Ambient temperature max.	40 °C	40 °C	40 °C	40 °C
	Safety and protection				
	Type	Open type	Open type	Open type	Open type
	Insulation class	H	H	H	H
	Protection index	IP 00	IP 00	IP 00	IP 00
	Safety class (prepared)	I	I	I	I
	Test voltage	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz	3000 Vac, 50 Hz
	Order numbers				
	Order Number	SFB 400/180	SFB 400/250	SFB 400/440	SFB 400/480

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

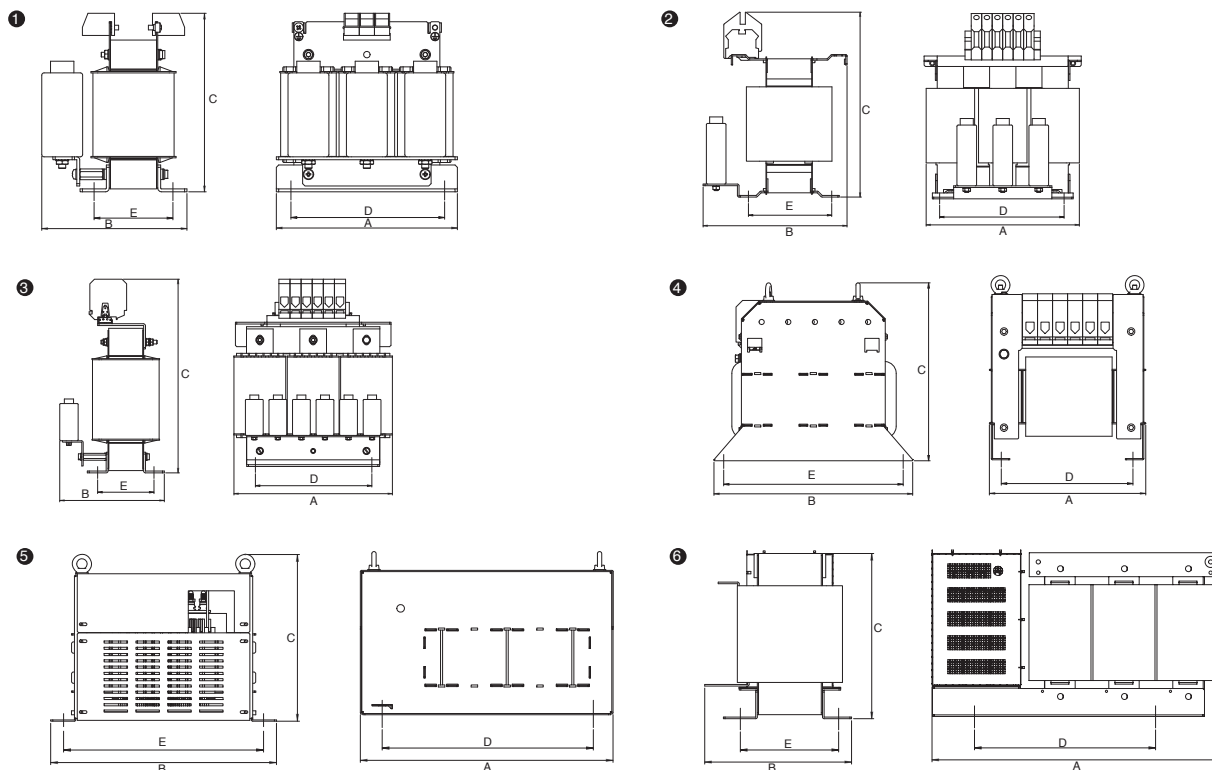


Sine filter SFB

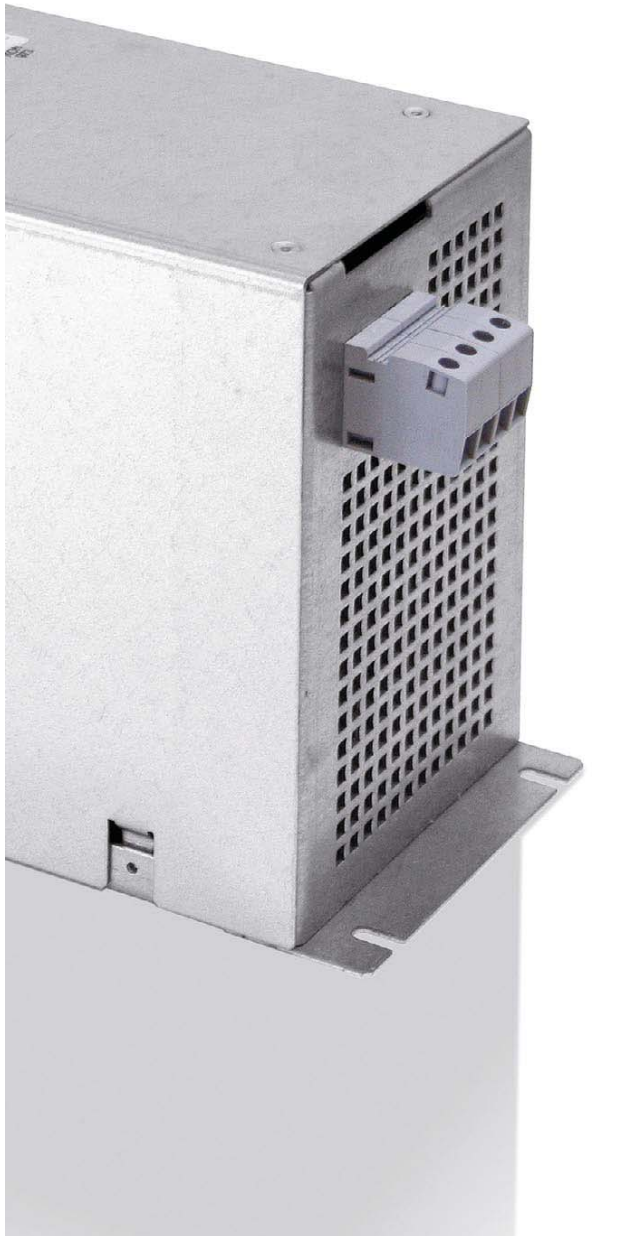


Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Mounting position	Weight	Dimension picture (in mm)	A	B	C	D	E
	SFB 400/4	Screw clamp, 4 mm ²	Bolt, M4	Fixing rail	M5	only for vertical mounting	4.0 kg	1	155	110	160	130	56
	SFB 400/10	Screw clamp, 4 mm ²	Bolt, M4	Fixing rail	M5	only for vertical mounting	5.5 kg	1	155	125	160	130	71
	SFB 400/16,5	Screw clamp, 10 mm ²	Bolt, M4	Fixing rail	M5	only for vertical mounting	9.5 kg	1	190	160	195	170	67
	SFB 400/23,5	Screw clamp, 16 mm ²	Bolt, M6	Fixing rail	M6	only for vertical mounting	14.5 kg	2	240	190	280	190	95
	SFB 400/32	Screw clamp, 16 mm ²	Bolt, M6	Fixing rail	M6	only for vertical mounting	19.0 kg	2	240	200	280	190	105
	SFB 400/37	Screw clamp, 16 mm ²	Bolt, M6	Fixing rail	M6	only for vertical mounting	21.0 kg	2	240	210	280	190	115
	SFB 400/48	Screw clamp, 16 mm ²	Bolt, M6	Fixing rail	M6	only for vertical mounting	25.5 kg	2	240	220	285	190	125
	SFB-N 400/61	Screw clamp, 35 mm ²	Bolt, M8	Fixing rail	M8	only for vertical mounting	33.5 kg	2	300	228	335	240	110
	SFB-N 400/72	Screw clamp, 35 mm ²	Bolt, M8	Fixing rail	M8	only for vertical mounting	37.0 kg	2	300	240	340	240	133
	SFB-N 400/90	Screw clamp, 50 mm ²	Bolt, M8	Fixing rail	M8	only for vertical mounting	53.0 kg	2	300	240	355	240	145
	SFB 400/115	Screw clamp, 95 mm ²	Bolt, M8	Fixing rail	M8	only for vertical mounting	66.0 kg	3	360	210	425	264	125
	SFB 400/150	Screw clamp, 95 mm ²	Bolt, M8	Fixing rail	M10	only for vertical mounting	69.0 kg	3	360	230	425	264	140
	SFB 400/180	Screw clamp, 150 mm ²	Bolt, M8	Fixing rail	M10	only for vertical mounting	75.0 kg	3	365	240	445	264	154
	SFB 400/250	Screw clamp, 150 mm ²	Bolt, M12	Fixing rail	M10	only for vertical mounting	120.0 kg	4	400	500	450	326	450
	SFB 400/440	Screw clamp, 150 mm ²	Bolt, M12	Fixing rail	M10	only for vertical mounting	200.0 kg	5	630	540	400	550	480
	SFB 400/480	Screw clamp, 150 mm ²	Bolt, M14	Fixing rail	M10	only for vertical mounting	220.0 kg	6	750	400	430	450	270

Dimension pictures



All-pole sine filter **SFA 400**



General Data

Rated voltage 3 x 400 Vac
Rated current 1.3 - 60 A
Designed for inverter with DC link connector (+Vdc), positive or negative or mid point and works with continuous PWM (please contact our technical support staff)
For motor rated output 1.5 - 30 kW
For switching frequencies ≥ 8 kHz
Rated frequency from 0 to 60 Hz
Insulation class H
Maximum ambient temperature 45 °C

Advantages

Prevention of overvoltages on the motor
Long cable lengths possible
Reduction in motor noise
Minimisation of bearing currents
Minimisation of leakage currents (is beneficial in the event of incorrect RCD tripping)
Reduction in line-borne and field-borne emitted interference: can be omitted from shielded cables, where necessary
Reduction of motor losses

Applications

Sine filter for the suppression of differential mode interference and common mode interference. Designed for inverter with DC link connector (+Vg/+Ug), positive or negative or mid point and works with continuous PWM (please contact our technical support staff).

Standards

Output filter with capacitor for frequency inverters complying with IEC 61558-2-20, UL 508, CSA 22.2 No. 14-10

Approvals



UL 5085-1/-2, CSA 22.2 No.66

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2



All-pole sine filter

SFA 400



Electrical data	Type	SFA 400/1,3	SFA 400/2,5	SFA 400/4	SFA 400/6	SFA 400/10	SFA 400/16,5
	Operating data						
	Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
	Voltage range	380 - 480 Vac	380 - 480 Vac	380 - 480 Vac	380 - 480 Vac	380 - 480 Vac	380 - 480 Vac
	Voltage drop	<5 % @ 400 Vac	<5 % @ 400 Vac	<5 % @ 400 Vac	<5 % @ 400 Vac	<5 % @ 400 Vac	<5 % @ 400 Vac
	Rated current	1.3 A	2.5 A	4 A	6 A	10 A	16.5 A
	for motor rated output approx.	0.55 kW	1.10 kW	1.50 kW	2.20 kW	4.00 kW	7.50 kW
	Rated frequency	≤60 Hz	≤60 Hz	≤60 Hz	≤60 Hz	≤60 Hz	≤60 Hz
	Switching frequency	≥8 kHz	≥8 kHz	≥8 kHz	≥8 kHz	≥8 kHz	≥8 kHz
	Approvals						
	Approvals	cURus	cURus	cURus	cURus	cURus	cURus
	Environment						
	Ambient temperature max.	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C
	Safety and protection						
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Insulation class	F	F	F	F	F	F
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I	I
	Test voltage	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz
	Order numbers						
	Order Number	SFA 400/1,3	SFA 400/2,5	SFA 400/4	SFA 400/6	SFA 400/10	SFA 400/16,5



All-pole sine filter **SFA 400**



Electrical data	Typ	SFA 400/24	SFA 400/32	SFA 400/40	SFA 400/50	SFA 400/60
	Operating data					
	Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
	Voltage range	380 - 480 Vac	380 - 480 Vac	380 - 480 Vac	380 - 480 Vac	380 - 480 Vac
	Voltage drop	<5 % @ 400 Vac	<5 % @ 400 Vac	<5 % @ 400 Vac	<5 % @ 400 Vac	<5 % @ 400 Vac
	Rated current	24 A	32 A	40 A	50 A	60 A
	for motor rated output approx.	11.00 kW	15.00 kW	18.50 kW	22.00 kW	30.00 kW
	Rated frequency	≤60 Hz	≤60 Hz	≤60 Hz	≤60 Hz	≤60 Hz
	Switching frequency	≥8 kHz	≥8 kHz	≥8 kHz	≥8 kHz	≥8 kHz
	Approvals	cURus	cURus	cURus	cURus	cURus
	Environment					
	Ambient temperature max.	45 °C	45 °C	45 °C	45 °C	45 °C
	Safety and protection					
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Insulation class	F	F	F	F	F
	Protection index	IP 20	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I	I
	Test voltage	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz	2500 Vac, 50 Hz
	Order numbers					
	Order Number	SFA 400/24	SFA 400/32	SFA 400/40	SFA 400/50	SFA 400/60

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

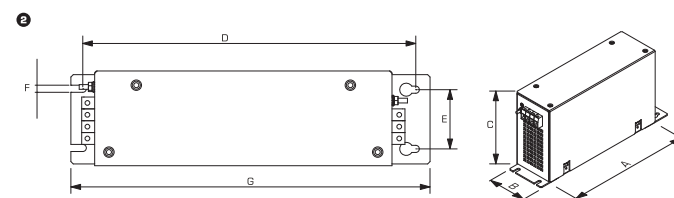
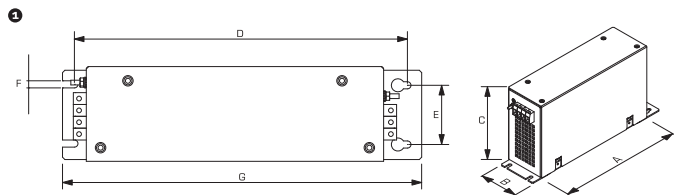


All-pole sine filter SFA 400



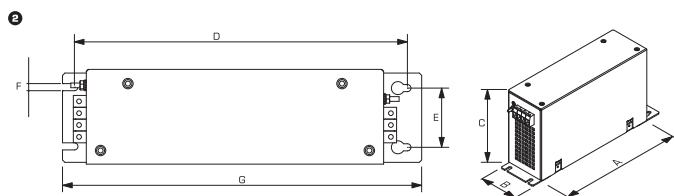
Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F	G
	SFA 400/1,3	Screw clamp, 4 mm ²	Bolt, M4	Mounting lugs	M5	3.2 kg	1	250	80	150	280	50	6	302
	SFA 400/2,5	Screw clamp, 4 mm ²	Bolt, M4	Mounting lugs	M5	4.7 kg	1	250	80	150	280	50	6	302
	SFA 400/4	Screw clamp, 4 mm ²	Bolt, M4	Mounting lugs	M5	7.4 kg	2	290	80	170	320	50	6	342
	SFA 400/6	Screw clamp, 10 mm ²	Bolt, M4	Mounting lugs	M5	8.1 kg	2	290	80	170	320	50	6	342
	SFA 400/10	Screw clamp, 10 mm ²	Bolt, M5	Mounting lugs	M6	11.0 kg	1	320	135	200	355	100	6.5	372
	SFA 400/16,5	Screw clamp, 10 mm ²	Bolt, M5	Mounting lugs	M6	17.0 kg	1	320	135	200	355	100	6.5	372
	SFA 400/24	Screw clamp, 16 mm ²	Bolt, M6	Mounting lugs	M6	25.0 kg	2	370	260	200	400	230	6.5	430
	SFA 400/32	Screw clamp, 16 mm ²	Bolt, M6	Mounting lugs	M6	27.0 kg	2	400	280	200	430	230	6.5	460
	SFA 400/40	Screw clamp, 16 mm ²	Bolt, M6	Mounting lugs	M6	34.0 kg	2	450	310	250	480	250	6.5	510
	SFA 400/50	Screw clamp, 16 mm ²	Bolt, M6	Mounting lugs	M6	45.0 kg	2	500	310	250	530	250	6.5	560

Dimension pictures



Mechanical data	Type	Terminals phase	Terminals PE	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F	G
	SFA 400/60	Screw clamp, 35 mm ²	Bolt, M8	Mounting lugs	M6	56.0 kg	2	550	310	250	580	250	6.5	610

Dimension pictures



All-pole sine filter **SFA 500**



General Data

Rated voltage 3 x 500 Vac
For switching frequencies ≥ 4 kHz
For motor rated output 2.2 - 45 kW
Maximum ambient temperature 45 °C
Degree of protection IP 20
Rated current 6 - 65 A
Rated frequency from 5 to 150 Hz
Insulation class H

Advantages

Efficiency optimisation of the drive system
Use of unshielded motor cables
Improves conducted and radiated electromagnetic interference (150 kHz - 300 MHz)
Significant reduction of leakage currents
Elimination of bearing currents
Increase of motor service life

Applications

Sine filter for the suppression of differential mode interference and common mode interference. Designed for inverter with DC link connector (+Vg/+Ug), positive or negative or mid point and and works with continuous PWM (please contact our technical support staff).

1.1

1.2

1.3

2.1

2.2

3.1

3.2

3.3

4.0

5.1

5.2

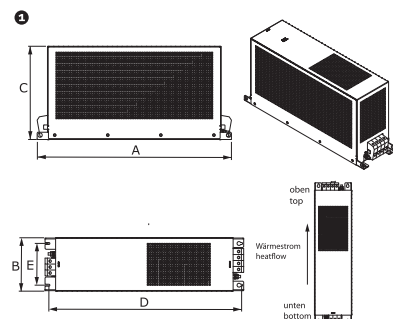


All-pole sine filter SFA 500



Electrical data	Typ	SFA 500/6	SFA 500/13	SFA 500/24	SFA 500/46
	Operating data				
	Rated voltage	3 x 500 Vac	3 x 500 Vac	3 x 500 Vac	3 x 500 Vac
	Rated frequency	5 - 150 Hz	5 - 150 Hz	5 - 150 Hz	5 - 150 Hz
	Voltage range	0 - 500 Vac	0 - 500 Vac	0 - 500 Vac	0 - 500 Vac
	Voltage drop	< 6.5 % @ 400 Vac	< 6.5 % @ 400 Vac	< 6.5 % @ 400 Vac	< 6.5 % @ 400 Vac
	Rated current	6 A (400 V ≥ 4 kHz) 5,2 A (500 V ≥ 4 kHz)	13 A (400 V ≥ 4 kHz) 11,8 A (500 V ≥ 4 kHz)	24 A (400 V ≥ 4 kHz) 22,6 A (500 V ≥ 4 kHz)	46 A (400 V ≥ 4 kHz) 43,3 A (500 V ≥ 4 kHz)
	for motor rated output approx.	2.20 kW	5.50 kW	11.00 kW	22.00 kW
	Output				
	Vector group	III	III	III	III
	Switching frequency	≥ 4 kHz	≥ 4 kHz	≥ 4 kHz	≥ 4 kHz
	Environment				
	Ambient temperature	-10 to +45 °C	-10 to +45 °C	-10 to +45 °C	-10 to +45 °C
	Type of cooling	AN	AN	AN	AN
	Safety and protection				
	Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
	Protection index	IP 20	IP 20	IP 20	IP 20
	Safety class (prepared)	I	I	I	I
	Insulation class	H	H	H	H
	Order numbers				
	Order Number	SFA 500/6	SFA 500/13	SFA 500/24	SFA 500/46
Mechanical data	Terminal and mounting				
	Terminals phase	Screw clamp, 10 mm ²	Screw clamp, 10 mm ²	Screw clamp, 16 mm ²	Screw clamp, 16 mm ²
	Terminals PE	Bolt, M6	Bolt, M6	Bolt, M6	Bolt, M6
	Fixing method	Mounting lugs	Mounting lugs	Mounting lugs	Mounting lugs
	Fixing screws	M6	M6	M6	M6
	Measures and weights				
	Weight	14.0 kg	18.0 kg	25.0 kg	40.0 kg
	Dimension picture (in mm)	①	①	①	①
	A	310	390	450	450
	B	105	120	135	160
	C	160	215	270	310
	D	290	370	430	430
	E	75	90	100	120

Dimension pictures



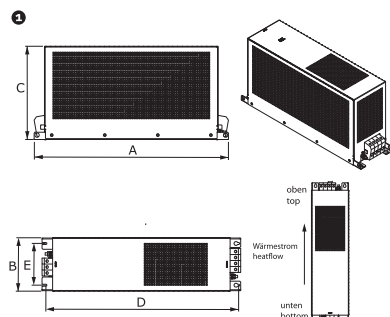


All-pole sine filter **SFA 500**



Electrical data	Typ	SFA 500/65	1.1
	Operating data		1.2
	Rated voltage	3 x 500 Vac	
	Rated frequency	5 - 150 Hz	
	Voltage range	0 - 500 Vac	
	Voltage drop	< 6.5 % @ 400 Vac	
	Rated current	65 A (400 V ≥ 4 kHz) 59 A (500 V ≥ 4 kHz)	1.3
	for motor rated output approx.	45.00 kW	
	Output		
	Vector group	III	
Mechanical data	Switching frequency	≥ 4 kHz	2.1
	Environment		
	Ambient temperature	-10 to +45 °C	
	Type of cooling	AN	
	Safety and protection		2.2
	Type	Metal enclosure	
	Protection index	IP 20	
	Safety class (prepared)	I	
	Insulation class	H	
	Order numbers		
	Order Number	SFA 500/65	
	Terminal and mounting		3.1
	Terminals phase	Screw clamp, 50 mm²	
	Terminals PE	Bolt, M8	
	Fixing method	Mounting lugs	
	Fixing screws	M6	
	Measures and weights		3.2
	Weight	57.0 kg	
	Dimension picture (in mm)	①	
	A	670	3.3
	B	180	
	C	320	
	D	650	
	E	140	

Dimension pictures



4.0

5.1

5.2