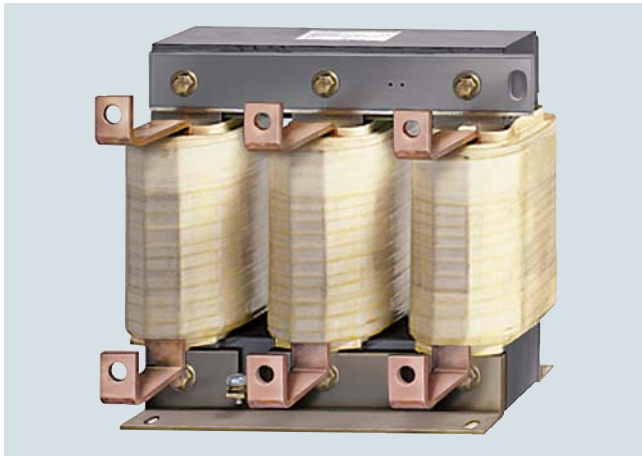


SINAMICS G120 standard inverters

0.37 kW to 250 kW (0.5 hp to 400 hp)

Load-side power components > Output reactors

Overview



Output reactor for PM240-2 Power Modules, frame size FSG

Output reactors reduce the rate of voltage rise (dv/dt) and the height of the current peaks, and enable longer motor cables to be connected.

Owing to the high rates of voltage rise of the fast-switching IGBTs, the capacitance of long motor cables reverses polarity very quickly with every switching operation in the inverter. As a result, the inverter is loaded with additional current peaks of substantial magnitude.

Output reactors reduce the magnitude of these additional peaks because the cable capacitance reverses polarity more slowly across the reactor inductance, thereby attenuating the amplitudes of the current peaks.

When using output reactors, the following should be observed:

- Max. permissible output frequency 150 Hz
- Max. permissible pulse frequency 4 kHz
- The output reactor must be installed as close as possible to the Power Module

Integration

Output reactors that are optionally available depending on the Power Module used

	Frame size						
	FSA	FSB	FSC	FSD	FSE	FSF	FSG
PM240-2 Power Module with integrated braking chopper							
Available frame sizes							
• 200 V versions	✓	✓	✓	✓	✓	✓	–
• 400 V versions	✓	✓	✓	✓	✓	✓	✓
• 690 V versions	–	–	–	✓ ¹⁾	✓ ¹⁾	✓	✓
Load-side power components							
Output reactor	S	S	S	S ¹⁾	S ¹⁾	S	S
PM250 Power Module with line-commutated energy recovery							
Available frame sizes							
• 200 V versions	–	–	✓	✓	✓	✓	–
Load-side power components							
Output reactor	–	–	U	S	S	S	–

U = Base component

S = Lateral mounting

– = Not possible

¹⁾ There are no optional output reactors available for 690 V versions of PM240-2 Power Modules, frame sizes FSD and FSE.

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Load-side power components > Output reactors

Selection and ordering data

Rated power		PM240-2 Power Module standard variant		Output reactor
kW	hp	Type 6SL3210-...	Frame size	Article No.
200 ... 240 V 1 AC/3 AC				
0.55	0.75	1PB13-0 . L0	FSA	6SL3202-0AE16-1CA0
0.75	1	1PB13-8 . L0		
1.1	1.5	1PB15-5 . L0	FSB	6SL3202-0AE16-1CA0
1.5	2	1PB17-4 . L0	FSB	6SL3202-0AE18-8CA0
2.2	3	1PB21-0 . L0	FSB	6SL3202-0AE21-8CA0
3	4	1PB21-4 . L0	FSC	6SL3202-0AE21-8CA0
4	5	1PB21-8 . L0		
200 ... 240 V 3 AC				
5.5	7.5	1PC22-2 . L0	FSC	6SL3202-0AE23-8CA0
7.5	10	1PC22-8 . L0		
11	15	1PC24-2UL0	FSD	6SE6400-3TC07-5ED0
15	20	1PC25-4UL0		
18.5	25	1PC26-8UL0		
22	30	1PC28-0UL0	FSE	6SE6400-3TC14-5FD0
30	40	1PC31-1UL0		
37	50	1PC31-3UL0	FSF	6SE6400-3TC14-5FD0
45	60	1PC31-6UL0		
55	75	1PC31-8UL0		
380 ... 480 V 3 AC				
0.55	0.75	1PE11-8 . L1	FSA	6SL3202-0AE16-1CA0
0.75	1	1PE12-3 . L1		
1.1	1.5	1PE13-2 . L1		
1.5	2	1PE14-3 . L1		
2.2	3	1PE16-1 . L1		
3	4	1PE18-0 . L1	FSA	6SL3202-0AE18-8CA0
4	5	1PE21-1 . L0	FSB	6SL3202-0AE21-8CA0
5.5	7.5	1PE21-4 . L0		
7.5	10	1PE21-8 . L0		
11	15	1PE22-7 . L0	FSC	6SL3202-0AE23-8CA0
15	20	1PE23-3 . L0		
18.5	25	1PE23-8 . L0	FSD	6SE6400-3TC07-5ED0
22	30	1PE24-5 . L0		
30	40	1PE26-0 . L0		
37	50	1PE27-5 . L0		
45	60	1PE28-8 . L0	FSE	6SE6400-3TC14-5FD0
55	75	1PE31-1 . L0		
75	100	1PE31-5 . L0	FSF	6SE6400-3TC14-5FD0
90	125	1PE31-8 . L0		
110	150	1PE32-1 . L0	FSF	6SL3000-2BE32-1AA0
132	200	1PE32-5 . L0	FSF	6SL3000-2BE32-6AA0
160	250	1PE33-0 . L0	FSG	6SL3000-2BE33-2AA0
200	300	1PE33-7 . L0	FSG	6SL3000-2BE33-8AA0
250	400	1PE34-8 . L0	FSG	6SL3000-2BE35-0AA0
500 ... 690 V 3 AC				
75	75	1PH28-0 . L0	FSF	6SL3000-2AH31-0AA0
90	100	1PH31-0 . L0		
110	100	1PH31-2 . L0	FSF	6SL3000-2AH31-5AA0
132	125	1PH31-4 . L0		
160	150	1PH31-7CL0	FSG	6SL3000-2AH31-8AA0
200	200	1PH32-1CL0	FSG	6SL3000-2AH32-4AA0
250	250	1PH32-5CL0	FSG	6SL3000-2AH32-6AA0

SINAMICS G120 standard inverters

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Load-side power components > Output reactors

Technical specifications (continued)

Line voltage 500 ... 690 V 3 AC		Output reactor (for a 4 kHz pulse frequency)				
		6SL3000-2AH31-0AA0	6SL3000-2AH31-5AA0	6SL3000-2AH31-8AA0	6SL3000-2AH32-4AA0	6SL3000-2AH32-6AA0
Rated current	A	100	150	175	215	260
Power loss, max.	kW	0.3	0.34	0.4	0.425	0.44
Connection to the Power Module/ motor connection		Flat connector for M10 screw	Flat connector for M10 screw	Flat connector for M10 screw	Flat connector for M10 screw	Flat connector for M10 screw
PE connection		M6 screw	M6 screw	M6 screw	M6 screw	M6 screw
Cable length, max. between output reactor and motor						
• Shielded	m (ft)	300 (984)	300 (984)	300 (984)	300 (984)	300 (984)
• Unshielded	m (ft)	450 (1476)	450 (1476)	450 (1476)	450 (1476)	450 (1476)
Dimensions						
• Width	mm (in)	270 (10.63)	270 (10.63)	300 (11.81)	300 (11.81)	300 (11.81)
• Height	mm (in)	248 (9.76)	248 (9.76)	285 (11.22)	285 (11.22)	285 (11.22)
• Depth	mm (in)	200 (7.87)	200 (7.87)	212 (8.35)	212 (8.35)	212 (8.35)
Degree of protection		IP00	IP00	IP00	IP00	IP00
Weight, approx.	kg (lb)	25 (55.1)	25.8 (56.9)	34 (75)	34 (75)	40 (88.2)
Suitable for PM240-2 standard variant	Type	6SL3210-1PH28-0 . L0 6SL3210-1PH31-0 . L0 FSF	6SL3210-1PH31-2 . L0 6SL3210-1PH31-4 . L0 FSF	6SL3210-1PH31-7CLO FSG	6SL3210-1PH32-1CLO FSG	6SL3210-1PH32-5CLO FSG

Line voltage 380 ... 480 V 3 AC		Output reactor (for a 4 kHz pulse frequency)	
		6SL3202-0AJ23-2CA0	
Rated current	A	32	
Power loss	kW	0.06	
Connection to the Power Module		Cable	
• Conductor cross-section		4 × AWG14 (1.5 mm ²)	
• Length, approx.	m (ft)	0.35 (1.15)	
Motor connection		Screw-type terminals	
• Conductor cross-section	mm ²	6	
PE connection		M5 screw stud	
Cable length, max. between output reactor and motor			
• 380 -10 % ... 400 V 3 AC			
- Shielded	m (ft)	150 (492)	
- Unshielded	m (ft)	225 (738)	
• 401 ... 480 V 3 AC +10 %			
- Shielded	m (ft)	100 (328)	
- Unshielded	m (ft)	150 (492)	
Dimensions			
• Width	mm (in)	189 (7.44)	
• Height	mm (in)	334 (13.15)	
• Depth	mm (in)	80 (3.15)	
Possible as base component		Yes	
Degree of protection		IP00	
Weight, approx.	kg (lb)	9.1 (20.1)	
Suitable for PM250 Power Module	Type	6SL3225-0BE25-5AA1 6SL3225-0BE27-5AA1 6SL3225-0BE31-1AA1 FSC	