

Commissioning


The braking resistors are designed to operate on a 5% duty cycle. For inverter frame size D, set P1237 = 1 to enable the braking resistor function. For other frame sizes, use the dynamic braking module to select the 5% duty cycle.


Note


Additional PE terminal

Some resistors have an additional PE connection available on the resistor housing.

B.1.6 Line reactor

 WARNING
<p>Heat during operation</p> <p>The line reactors get hot during operation. Do not touch. Provide adequate clearance and ventilation.</p> <p>When operating the larger line reactors in an environment with a surrounding air temperature in excess of 40° C, the wiring of the terminal connections must be accomplished using 75° C copper wire only.</p>

 WARNING
<p>Risk of equipment damage and electric shocks</p> <p>Some of the line reactors in the table below have pin crimps for the connection to the inverter's mains terminals.</p> <p>Use of these pin crimps can cause damage to the equipment and even electric shocks.</p> <p>For safety reasons, replace the pin crimps using UL/cUL-certified fork crimps or stranded cables.</p>

 CAUTION
<p>Protection rating</p> <p>The line reactors have a protection rating of IP20 in accordance with EN 60529 and are designed to be mounted inside a cabinet.</p>

Functionality

The line reactors are used to smooth voltage peaks or to bridge commutating dips. They also can reduce the effects of harmonics on the inverter and the line supply.

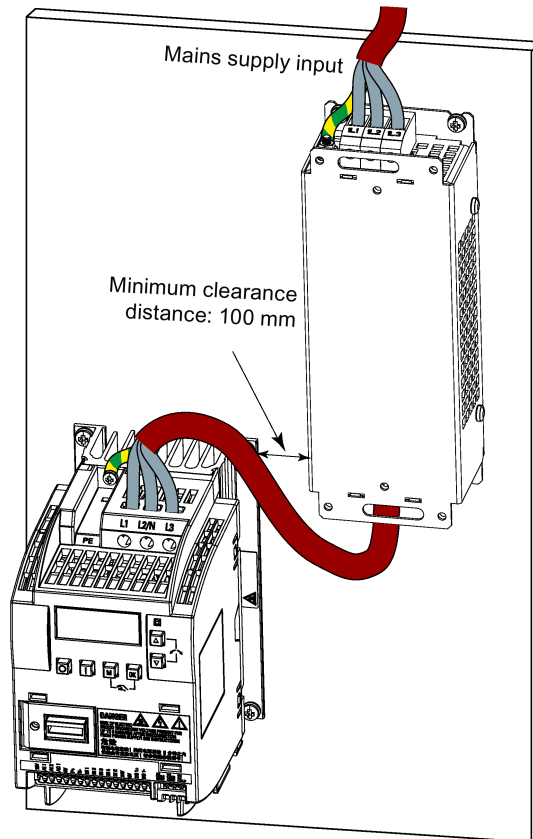
The larger line reactors for the 230 V variants of inverters have side mounting brackets to allow side-by-side mounting (see diagram below).

Ordering data

Frame size	Inverter power rating	Line reactor		
		Order number	Voltage	Current
Three phase AC 400 V inverters				
FSA	0.37 kW	6SL3203-0CE13-2AA0	380 V to 480 V	4.0 A
	0.55 kW			
	0.75 kW			
	1.1 kW			
	1.5 kW			
	2.2 kW	6SL3203-0CE21-0AA0	380 V to 480 V	11.3 A
	3 kW			
FSB	4 kW	6SL3203-0CE21-8AA0	380 V to 480 V	22.3 A
	5.5 kW			
FSC	7.5 kW	6SL3203-0CE23-8AA0	380 V to 480 V	47.0 A
FSD	11 kW			
	15 kW			
FSE	18.5 kW	6SE6400-3CC05-2DD0	200 V to 480 V	53.6 A
	22 kW	6SE6400-3CC08-3ED0	380 V to 600 V	86.9 A
Single phase AC 230 V inverters				
FSA	0.12 kW	6SE6400-3CC00-4AB3	200 V to 240 V	3.4 A
	0.25 kW			
	0.37 kW	6SE6400-3CC01-0AB3	200 V to 240 V	8.1 A
	0.55 kW			
	0.75 kW			
FSB	1.1 kW	6SE6400-3CC02-6BB3	200 V to 240 V	22.8 A
	1.5 kW			
FSC	2.2 kW	6SE6400-3CC03-5CB3	200 V to 240 V	29.5 A
	3 kW			

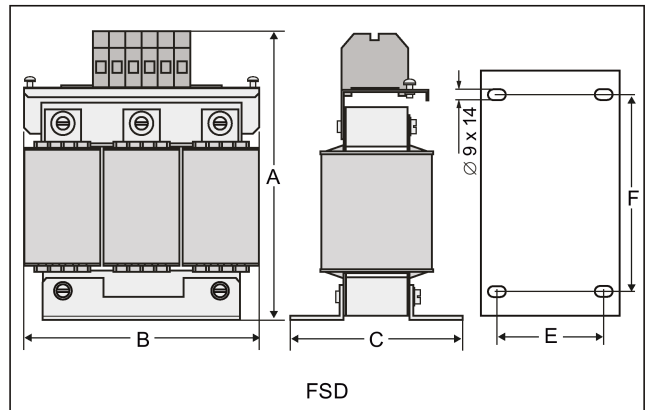
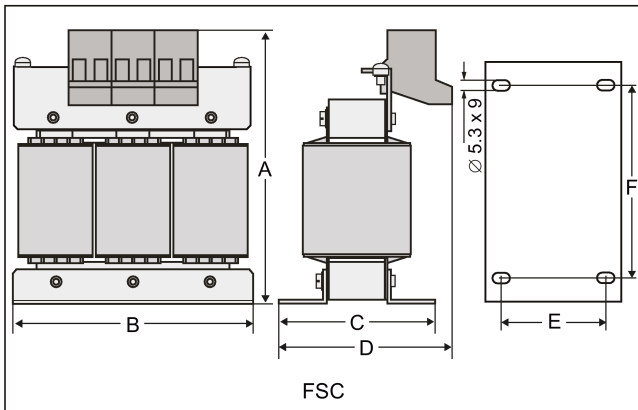
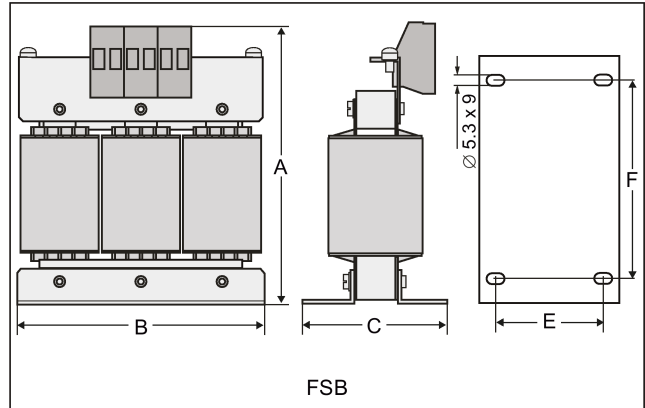
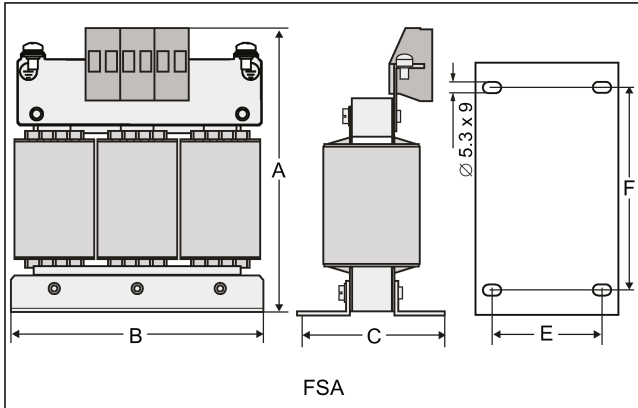
Connecting the line reactor to the inverter

The following illustration takes the line reactors for the 230 V variants of inverters as an example.



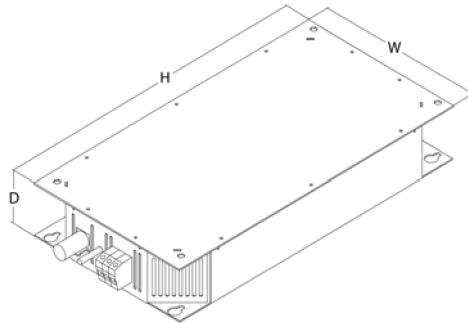
Mounting dimensions

For three phase AC 400 V inverters FSA to FSD



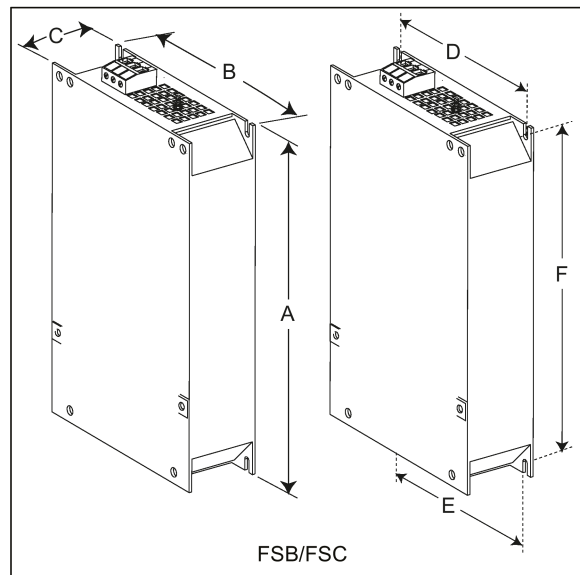
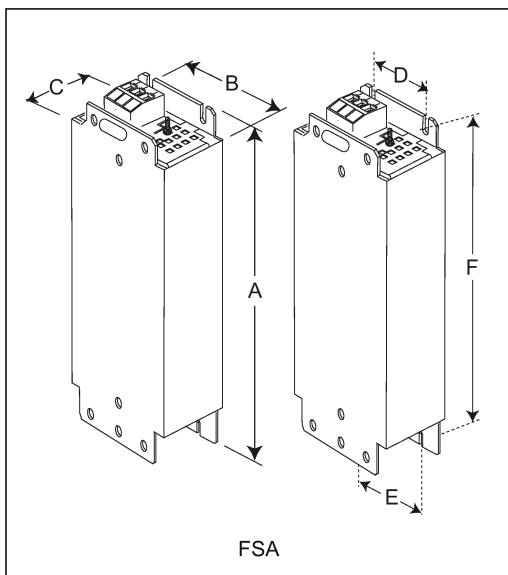
Order number	Dimensions (mm)						Weight (kg)	Fixing screw		Cable cross section (mm ²)
	A	B	C	D	E	F		Size	Tightening torque (Nm)	
6SL3203-...										
0CE13-2AA0	120	125	71	-	55	100	1.10	M4 (4)	3.0	2.5
0CE21-0AA0	140	125	71	-	55	100	2.10	M4 (4)	3.0	2.5
0CE21-8AA0	145	125	81	91	65	100	2.95	M5 (4)	5.0	6.0
0CE23-8AA0	220	190	91	-	68	170	7.80	M5 (4)	5.0	16.0

For three phase AC 400 V inverter FSE

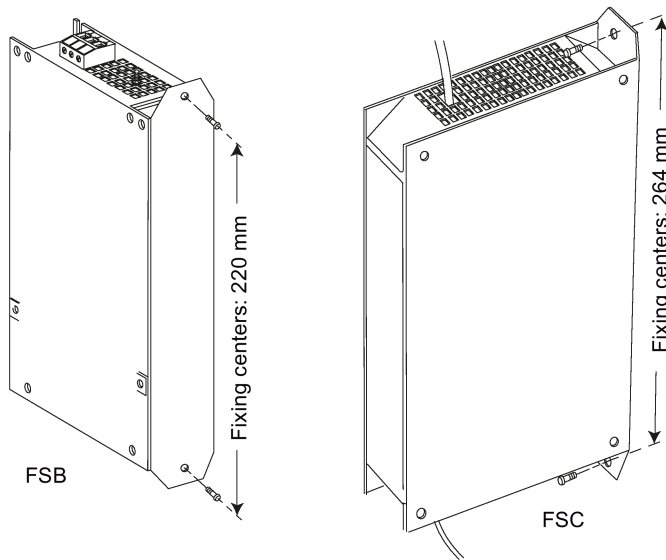


Order number 6SL6400-...	Electrical characteristics			Overall dimensions (mm)			Fixing dimensions (mm)		Fixing screw	Weight (kg)
				Line reactor						
	Voltage (V)	Current (A)	Torque (Nm)	H	W	D	H	W		
3CC05-2DD0	200 to 480	53.6	2.0 to 2.3	520	275	85	486	235	M8 (13 Nm+13 %)	9.5
3CC08-3ED0	380 to 600	86.9	6.0 to 8.0	650	275	95	616.4	235	M8 (13 Nm+13 %)	17.0

For single phase AC 230 V inverters




B.1 Options



Order number 6SE6400-...	Dimensions (mm)						Weight (kg)	Fixing screw		Cable cross section (mm ²)	
	A	B	C	D	E	F		Size	Tightening torque (Nm)	Min.	Max.
3CC00-4AB3	200	75.5	50	56	56	187	0.5	M4 (2)	1.1	1.0	2.5
3CC01-0AB3	200	75.5	50	56	56	187	0.5	M4 (2)			
3CC02-6BB3	213 (233*)	150	50	138	120	200	1.2	M4 (4)	1.5	1.5	6.0
3CC03-5CB3	245 (280*)	185	50 (50/80*)	174	156	230	1.0	M5 (4)	2.25	2.5	10

* Height with side-mounting bracket

B.1.7 Output reactor

 CAUTION
<p>Pulse frequency restriction</p> <p>The output reactor works only at 4kHz switching frequency. Before the output reactor is used, parameters P1800 and P0290 must be modified as follows: P1800 = 4 and P0290 = 0 or 1.</p>

Functionality

The output reactors reduce the voltage stress on the motor windings. At the same time, the capacitive charging / discharging currents, which place an additional load on the inverter output when long motor cables are used, are reduced.

Make sure you use a shielded cable (maximum length: 100 m) to connect the output reactor.