EMC filters

3-line filters
for converters and power electronics
Rated current 8 to 200 A

Series/Type: **B84143B*R110**
Date: January 2006

Power line filters for 3-phase systems
Rated voltage 520/300 V AC, 50/60 Hz
Rated current 8 to 200 A

Construction

- 3-line filter
- Metal case
- Book size

Features

- Very high insertion loss
- Optimized leakage current
- Space saving by optimized footprint
- Litz wires on the load side reduce mounting time
- Low weight
- Degree of protection: IP 20[1)]
- Optimized for long motor cables and operation under full load
- Design complies with EN 133200, UL 1283, CSA C22.2 No.8
- UL and cUL approval pending

Applications

- Frequency converters for motor drives, e.g. elevators, pumps, traction systems, conveyor systems, HVAC systems (heating, ventilation and air conditioning)
- Wind farms
- Power supplies

Terminals

- Line side: Finger-safe terminal blocks
- Load side: Litz wires

Marking

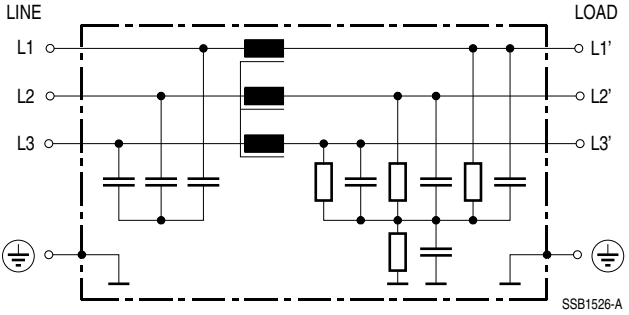
Marking on component:
Manufacturer's logo, ordering code,
rated voltage, rated current, rated temperature,
climatic category, date code

Minimum marking on packaging:
Manufacturer's logo, ordering code

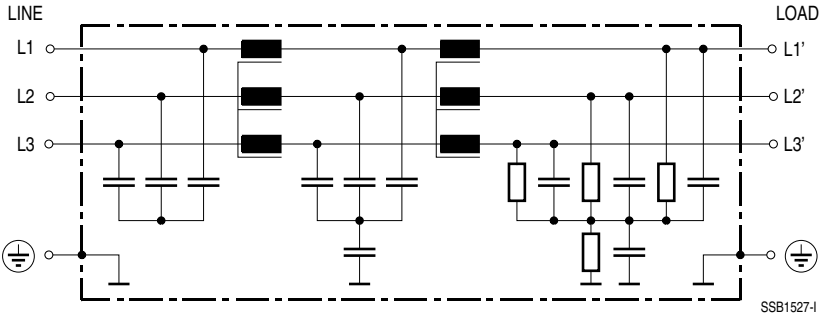
1) To IEC 60529

Typical circuit diagrams

Filters for 8 and 16 A



Filters for 25 … 200 A



Technical data and measuring conditions

Rated voltage V_R	520/300 V AC, 50/60 Hz
Rated current I_R	Referred to 40 °C ambient temperature
Test voltage V_{test}	1770 V DC, 2 s (line/line) 2700 V DC, 2 s (lines/case)
Overload capability (thermal)	1.5 · I_R for 3 min per hour or 2.5 · I_R for 30 s per hour
Leakage current I_{leak}	At 480 V AC, 50 Hz
Climatic category (IEC 60068-1)	25/100/21 (– 25 °C/+ 100 °C/21 days damp heat test)
Approvals	UL 1283 and CSA C22.2 No.8 pending

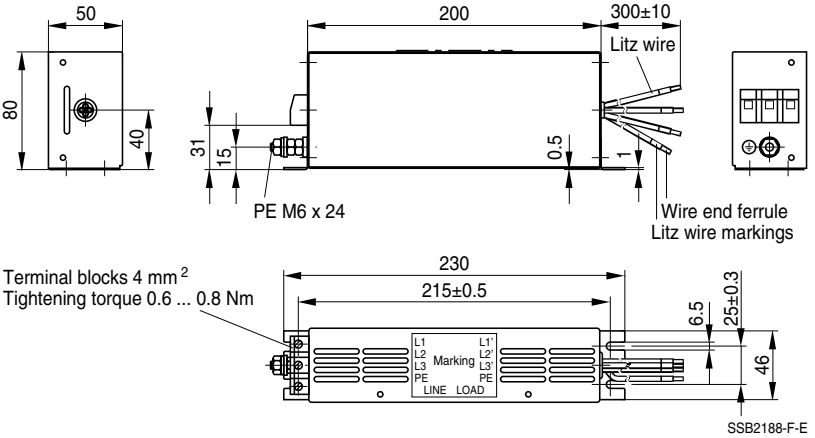
Characteristics and ordering codes

V_R AC	I_R	Terminal cross section		I_{leak}	R_{typ}	Approx. weight	Ordering code
		Line side: terminal blocks	Load side: litz wires				
V	A	mm²	mm²	mA	mΩ	kg	
520/300	8	4	1.5	< 14	26	1.5	B84143B0008R110
	16	4	2.5	< 14	13	1.5	B84143B0016R110
	25	6	4	< 14	10	2.7	B84143B0025R110
	36	6	6	< 14	6.5	3.2	B84143B0036R110
	50	16	10	< 14	4.3	3.7	B84143B0050R110
	66	25	16	< 14	2.7	4.3	B84143B0066R110
	90	25	25	< 14	2.0	7.7	B84143B0090R110
	120	50	35	< 14	1.4	8.3	B84143B0120R110
	150	50	35	< 14	0.9	9.7	B84143B0150R110
	200	95	70 / 35[1)]	< 14	0.5	13.5	B84143B0200R110

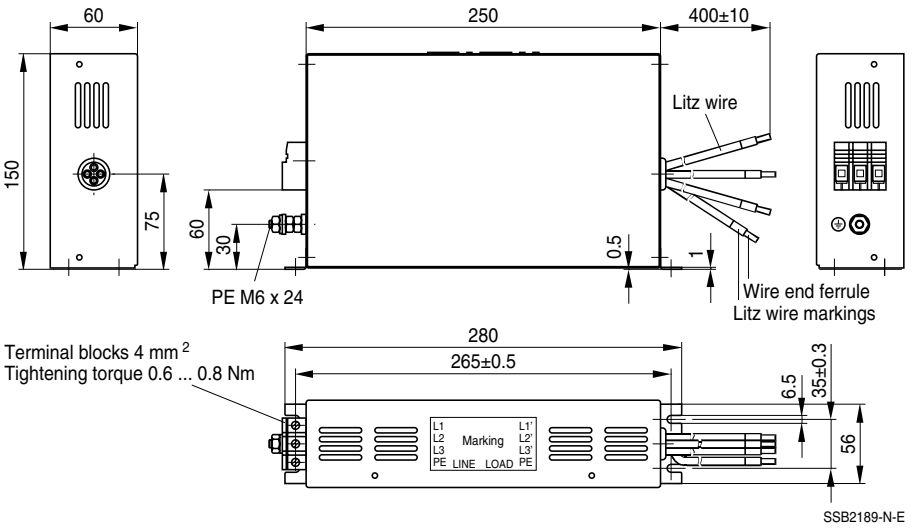
1) PE litz wire

Dimensional drawings

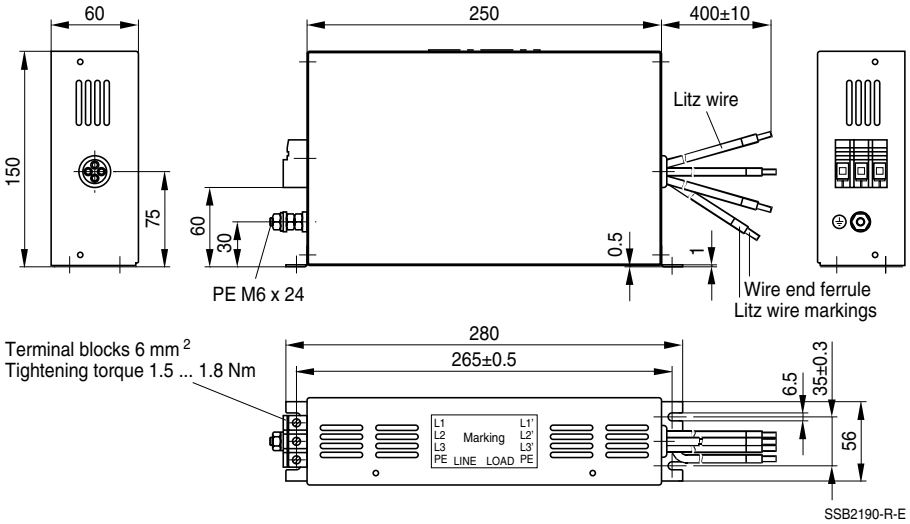
B84143B0008R110, B84143B0016R110 (8 and 16 A)



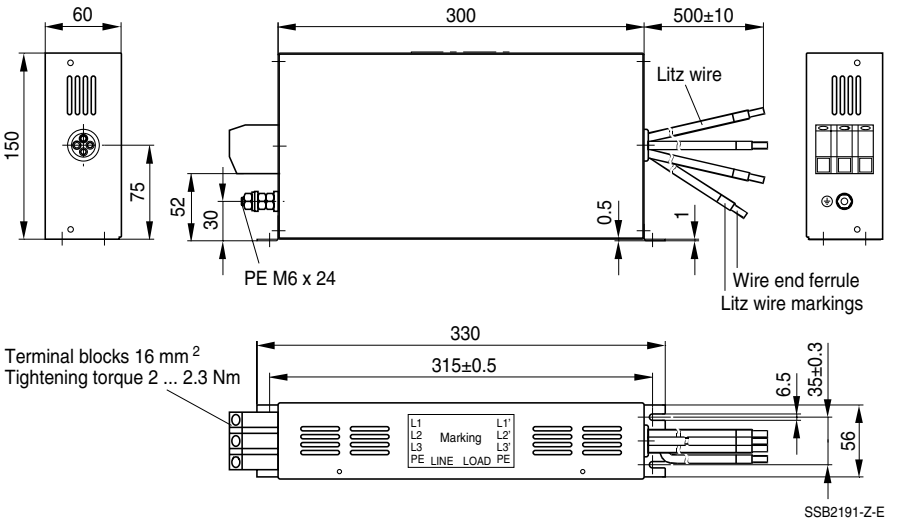
B84143B0025R110 (25 A)



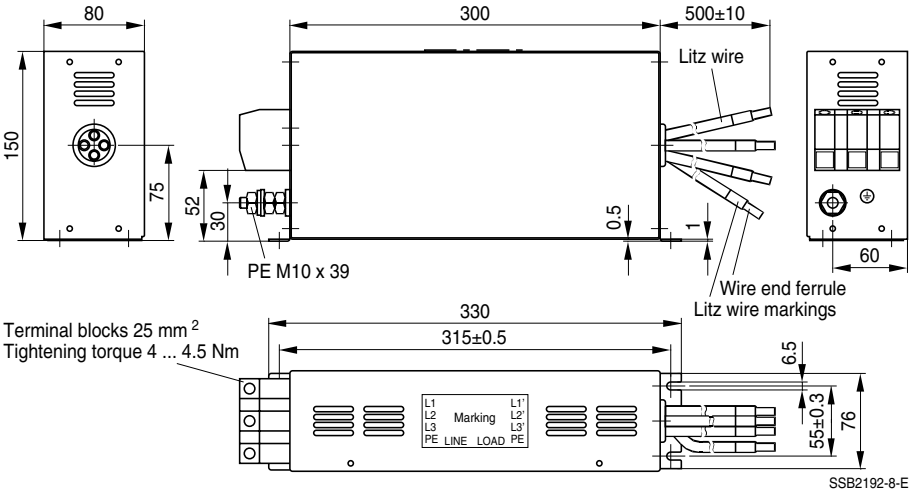
B84143B0036R110 (36 A)



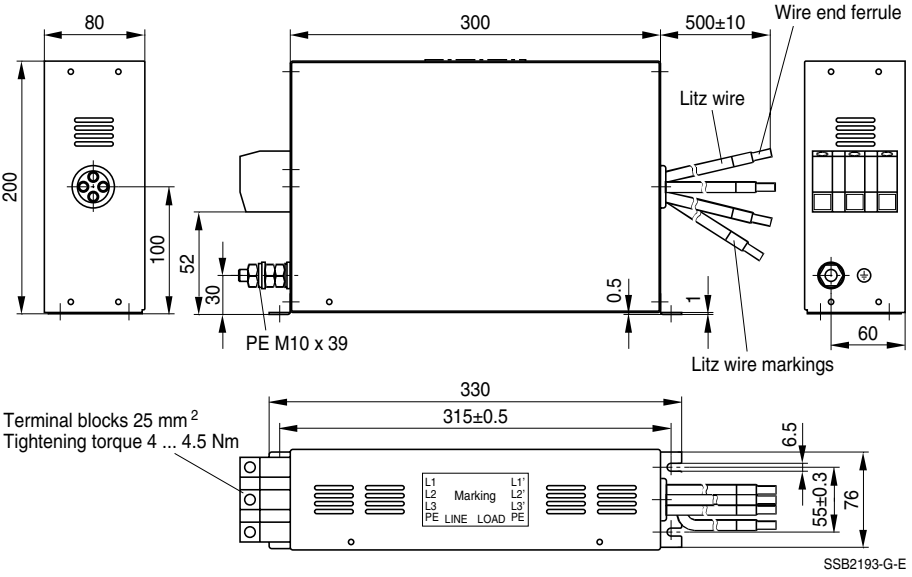
B84143B0050R110 (50 A)



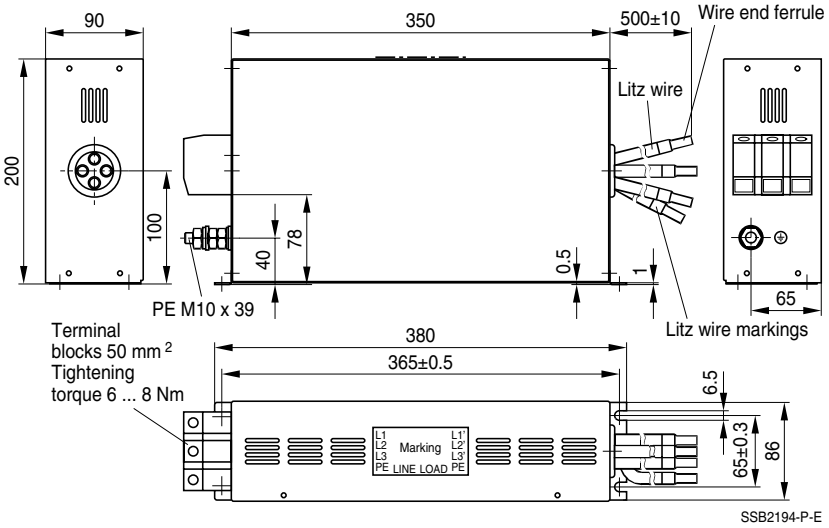
B84143B0066R110 (66 A)



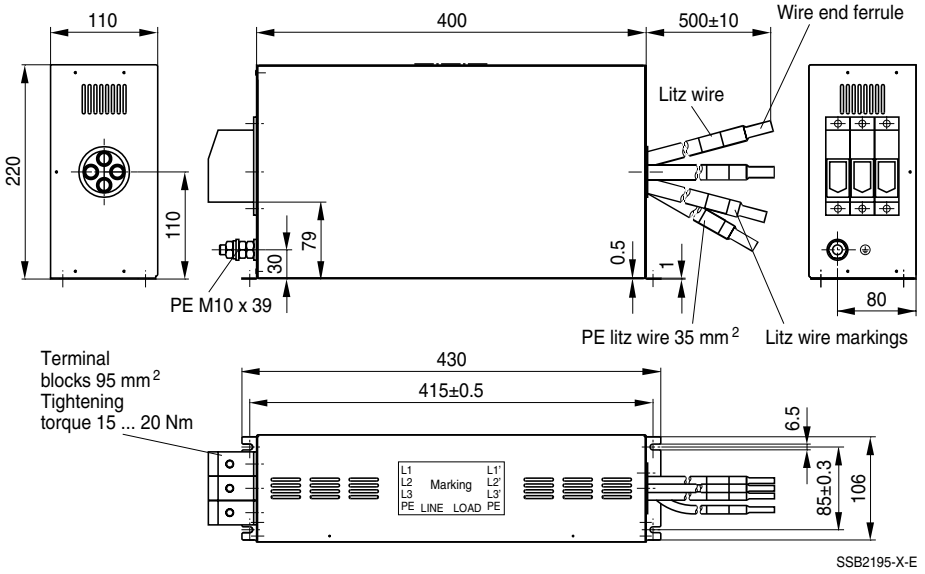
B84143B0090R110 (90 A)



B84143B0120R110, B84143B0150R110 (120 and 150 A)



B84143B0200R110 (200 A)



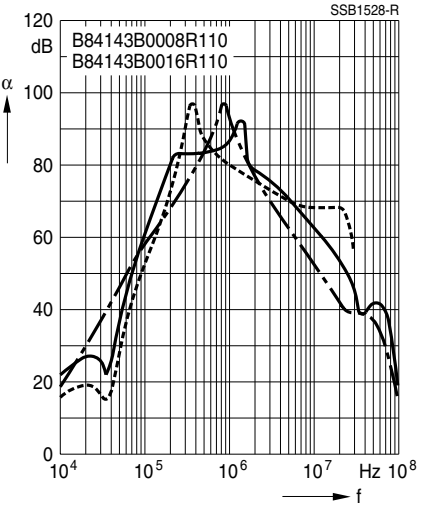
Insertion loss (typical values at Z = 50 Ω)

——————— unsymmetrical, adjacent branches terminated

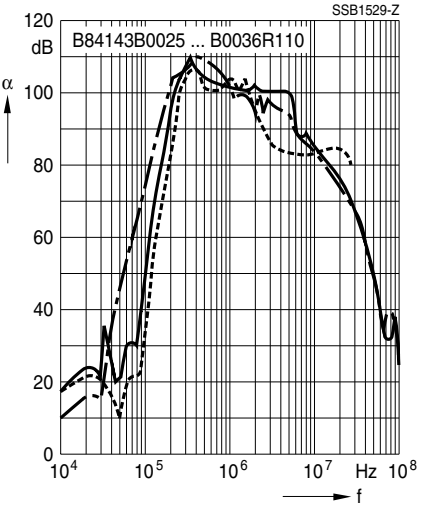
—·—·—·—·— common mode, all branches in parallel (asymmetrical)

– – – – – – – – differential mode (symmetrical)

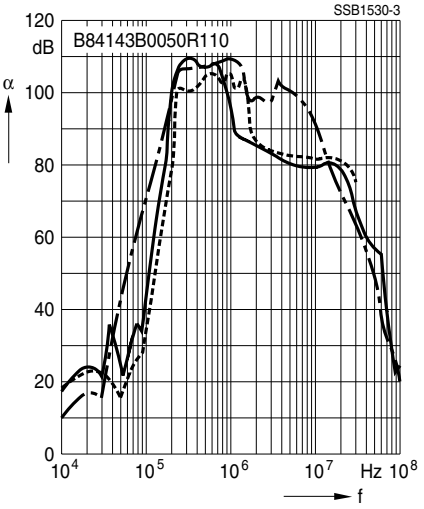
Filters for 8 and 16 A



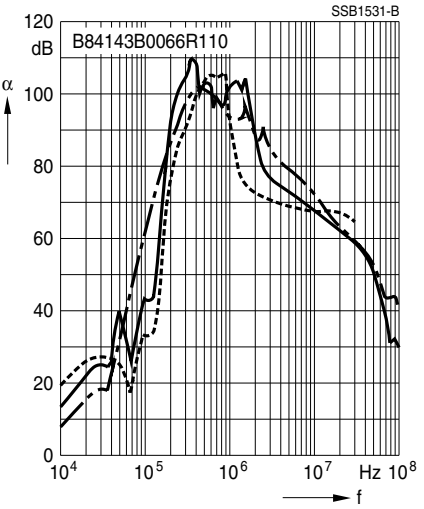
Filters for 25 and 36 A



Filters for 50 A



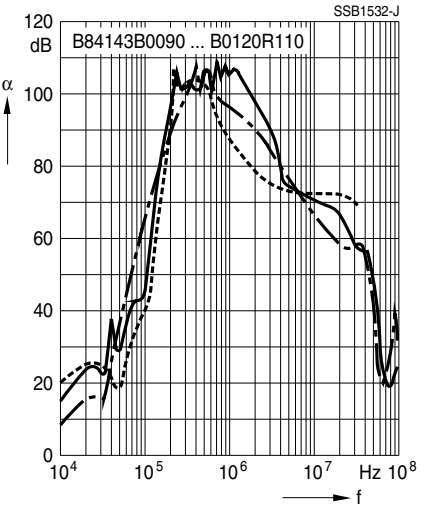
Filters for 66 A



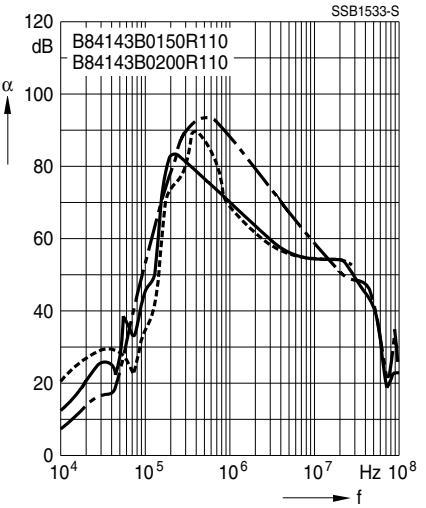
Insertion loss (typical values at Z = 50 Ω)

——————— unsymmetrical, adjacent branches terminated
—·—·—·—·—·— common mode, all branches in parallel (asymmetrical)
– – – – – – – – differential mode (symmetrical)

Filters for 90 and 120 A



Filters for 150 and 200 A



Important information

Please read all safety and warning notes carefully before installing the EMC filter and putting it into operation (see ⚠). The same applies to the warning signs on the filter. Please ensure that the signs are not removed nor their legibility impaired by external influences.

Death, serious bodily injury and substantial material damage to equipment may occur if the appropriate safety measures are not carried out or the warnings in the text are not observed.

Using according to the terms

The EMC filters may be used only for their intended application within the specified values in low-voltage networks in compliance with the instructions given in the data sheets and the data book. The conditions at the place of application must comply with all specifications for the filter used.

⚠ Warnings

- It shall be ensured that only qualified persons (electricity specialists) are engaged on work such as planning, assembly, installation, operation, repair and maintenance. They must be provided with the corresponding documentation.
- Danger of electric shock. EMC filters contain components that store an electric charge. Dangerous voltages can continue to exist at the filter terminals for longer than five minutes even after the power has been switched off.
- The protective earth connections shall be the first to be made when the EMC filter is installed and the last to be disconnected. Depending on the magnitude of the leakage currents, the particular specifications for making the protective-earth connection must be observed.
- Impermissible overloading of the EMC filter, such as impermissible voltages at higher frequencies that may cause resonances etc. can lead to destruction of the filter housing.
- EMC filters must be protected in the application against impermissible exceeding of the rated currents by suitable overcurrent protective.

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