EMC filters

3-line filters
for converters and power electronics
Rated current 8 to 80 A

Series/Type: **B84143B*R000**
Date: January 2006

Power line filters for 3-phase systems
Rated voltage 440/250 V AC, 50/60 Hz
Rated current 8 to 80 A

Construction

- 3-line filter
- Metal case

Features

- Very high insertion loss
  due to two-stage construction
- Optimized leakage current
- Easy to install
- 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

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

- Finger-safe terminal blocks

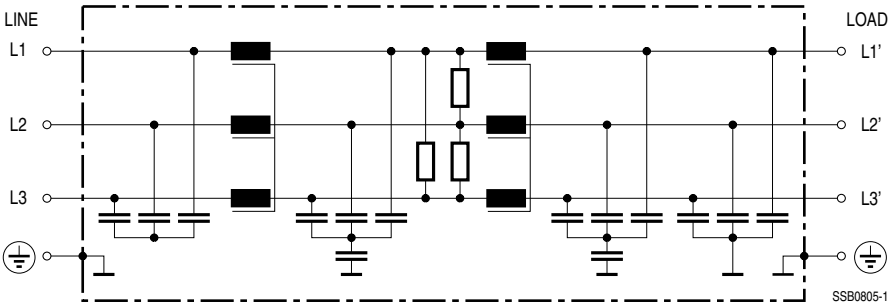
Marking

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 diagram



Technical data and measuring conditions

Rated voltage V_R	440/250 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 400 V AC, 50 Hz
Climatic category (IEC 60068-1)	25/100/21 (–25 °C/+100 °C/21 days damp heat test)

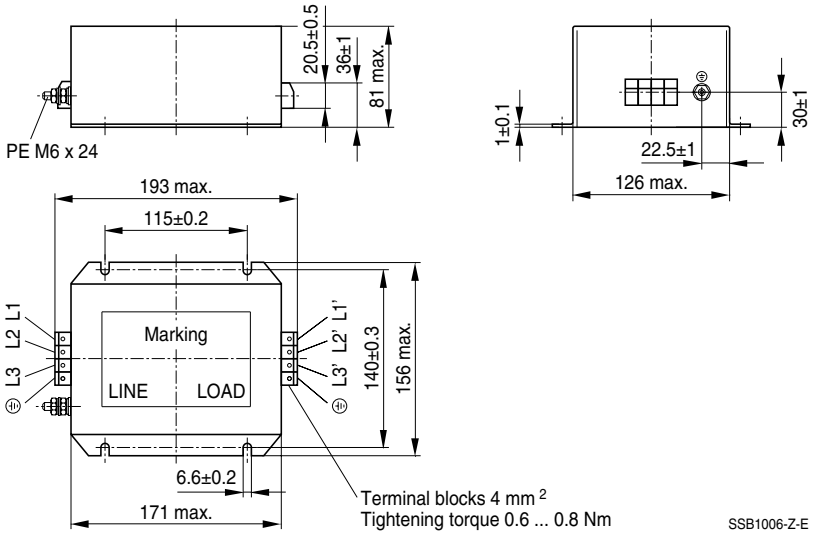
Characteristics and ordering codes

V_R AC V	I_R A	Terminal cross section mm²	I_{leak} mA	R_{typ} mΩ	Approx. weight kg	Ordering code
440/250	8	4	< 3.5	80	3.8	B84143B0008R000
	12	4	< 3.5	40	3.8	B84143B0012R000
	16	4	< 3.5	25	3.8	B84143B0016R000
	25	10	< 3.5	10	5.7	B84143B0025R000
	36	10	< 3.5	5.0	5.7	B84143B0036R000
	50	10	< 6	3.5	5.7	B84143B0050R000
	80	25	< 6	2.0	16	B84143B0080R000

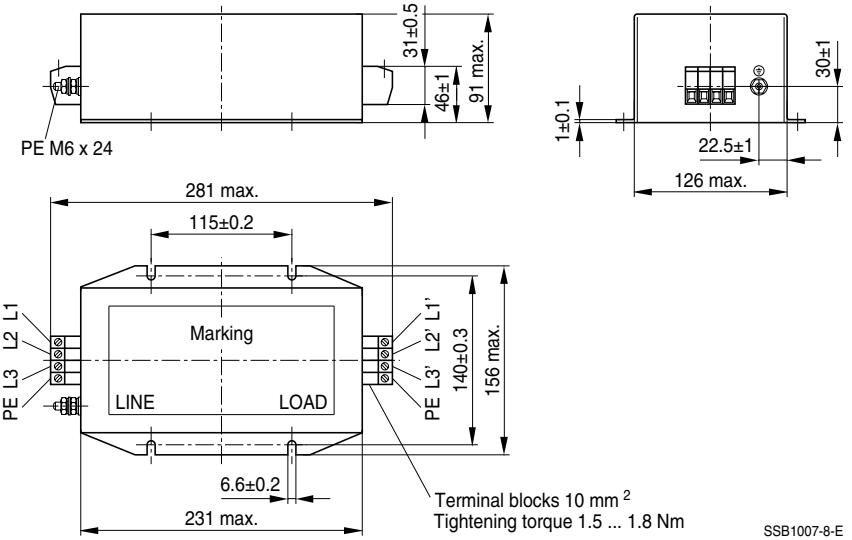
For filters for higher currents see B84143B*R110.

Dimensional drawings

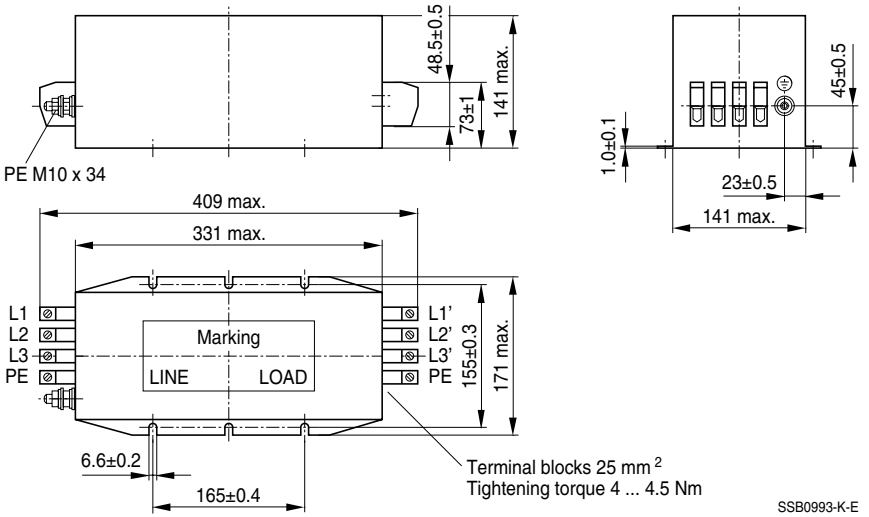
B84143B0008R000 … B00016R000 (8 … 16 A)



B84143B0025R000 … B0050R000 (25 … 50 A)



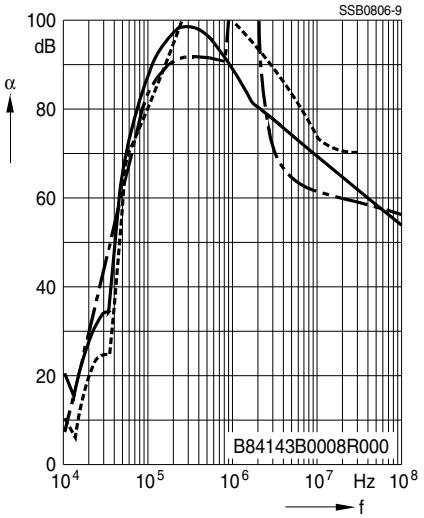
B84143B0080R000 (80 A)



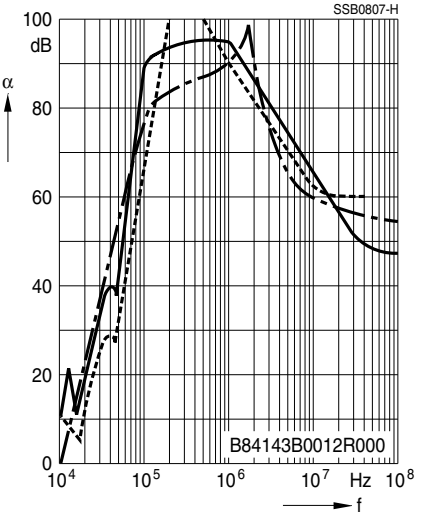
Insertion loss (typical values at Z = 50 Ω)

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

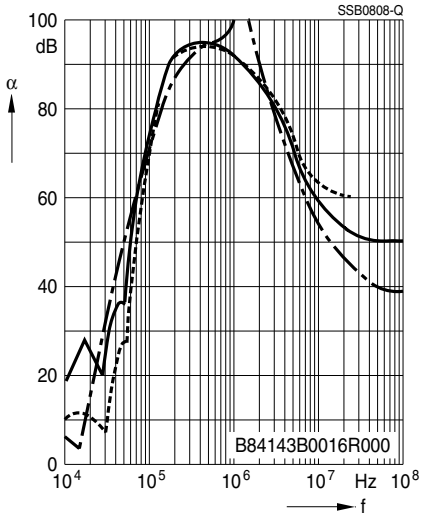
Filters for 8 A



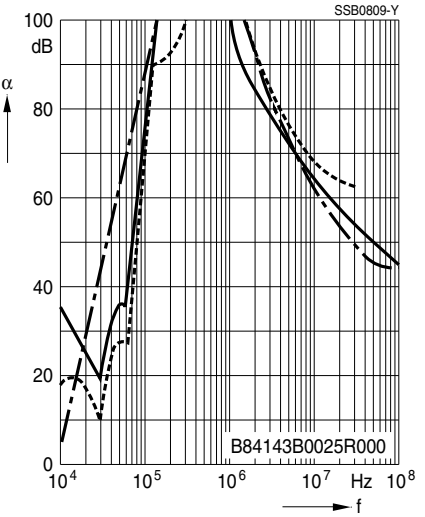
Filters for 12 A



Filters for 16 A



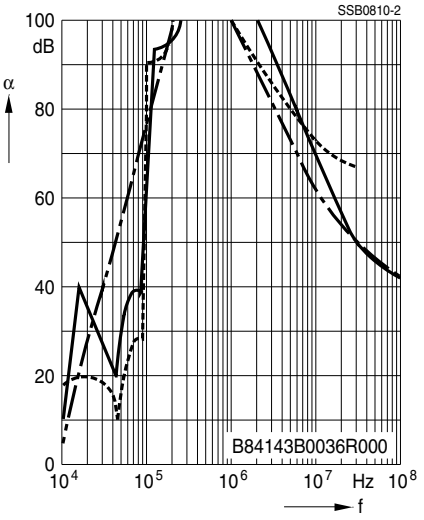
Filters for 25 A



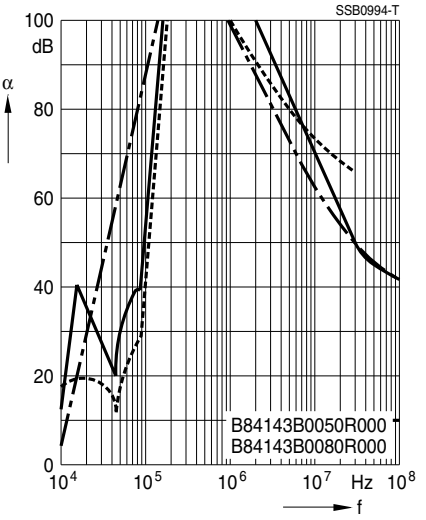
Insertion loss (typical values at Z = 50 Ω)

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

Filters for 36 A



Filters for 50 and 80 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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