



## **EMC filters**

3-line filters  
for converters and power electronics  
Rated current 8 to 180 A

**Series/Type:**            **B84143A\*R000**

Date:                        January 2006

**Power line filters for 3-phase systems**  
**Rated voltage 480/275 V AC, 50/60 Hz**  
**Rated current 8 to 180 A**


### Alternative version

- Series B84143A\*R105 offers a low-cost solution

### Construction

- 3-line filter
- Metal case

### Features

- High insertion loss
- Optimized leakage current
- Easy to install
- Degree of protection: IP 20<sup>1)</sup>
- Optimized for long motor cables and operation under full load
- Design complies with EN 133200, UL 1283, CSA C22.2 No.8
- UL approval 

### 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

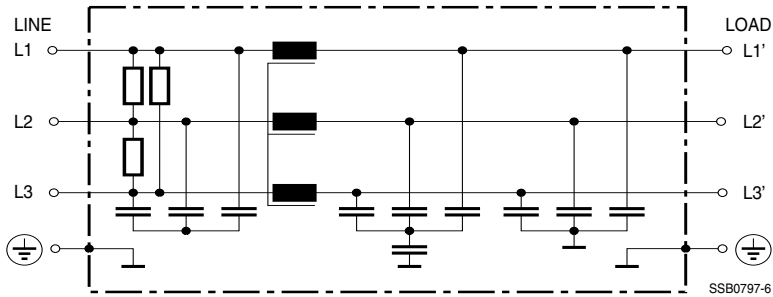
### Marking

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 $V_R$	480/275 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)
Approvals	UL 1283 for 440/250 V AC

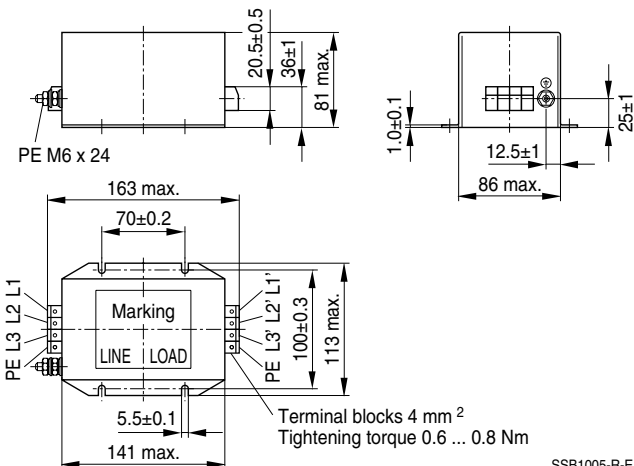
**Characteristics and ordering codes**

$V_R$ AC V	$I_R$ A	Terminal cross section mm <sup>2</sup>	$I_{leak}$ mA	$R_{typ}$ mΩ	Approx. weight kg	Ordering code	Approvals  (440/250 V)
480/275	8	4	< 3.5	40	2.2	B84143A0008R000	×
	12	4	< 3.5	20	2.2	B84143A0012R000	×
	16	4	< 3.5	15	2.2	B84143A0016R000	×
	25	10	< 3.5	8	3.7	B84143A0025R000	×
	36	10	< 3.5	3.8	3.7	B84143A0036R000	×
	50	10	< 6	2.0	4.0	B84143A0050R000	×
	80	25	< 6	1.0	9.5	B84143A0080R000	×
	120	50	< 6	0.75	10	B84143A0120R000	×
	150	50	< 6	0.4	10	B84143A0150R000	×
180	95	< 6	0.4	13	B84143A0180R000	×	

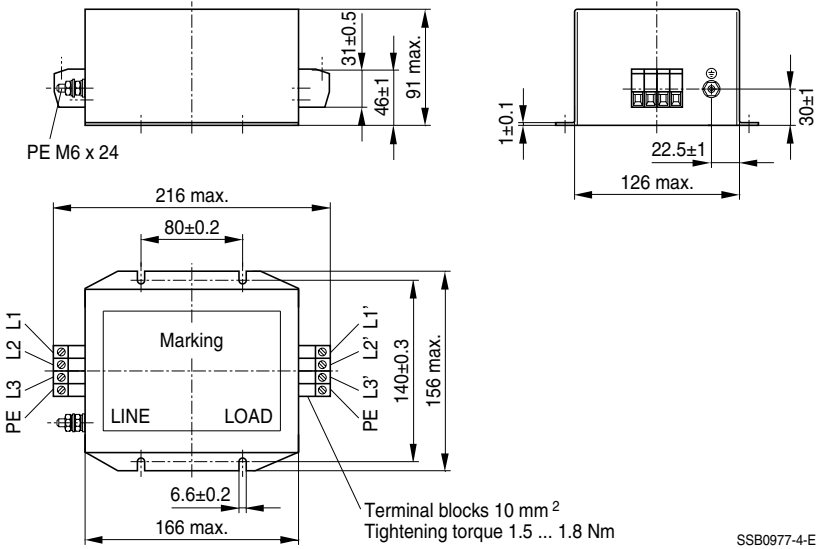
× = approval granted

For filters for higher currents see B84143B\*S080.

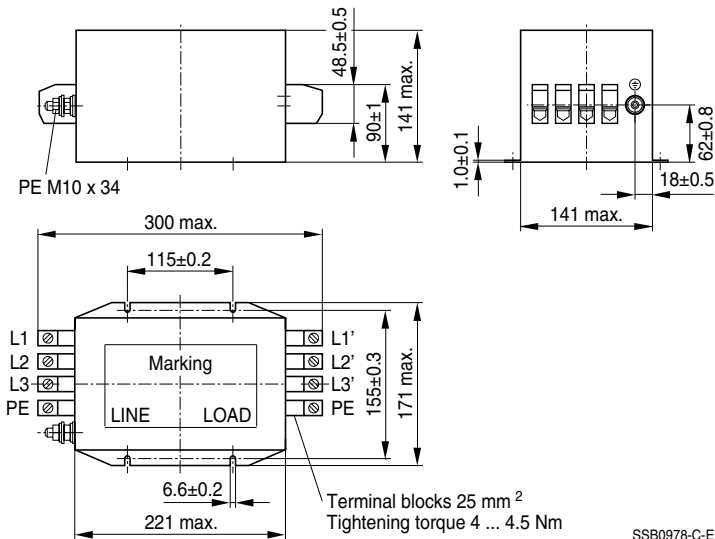
For filters for compact dimensions see B84143A\*R105.

**Dimensional drawings**
**B84143A0008R000 ... A0016R000 (8 ... 16 A)**


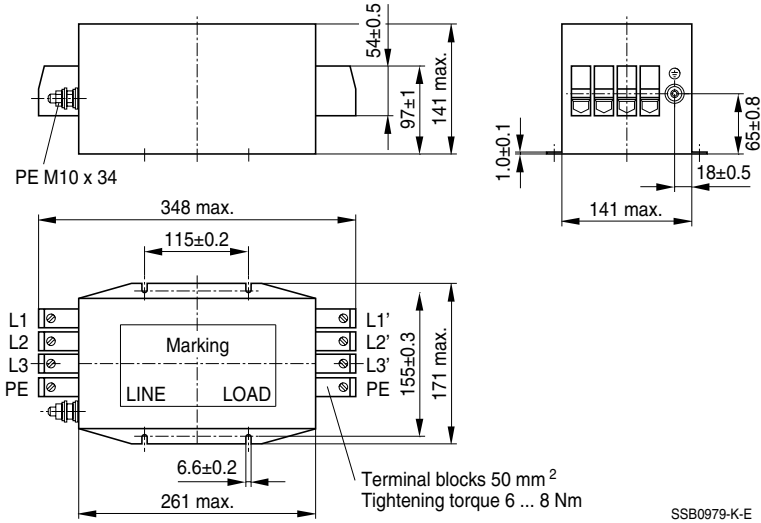
**B84143A0025R000 ... A0050R000 (25 ... 50 A)**



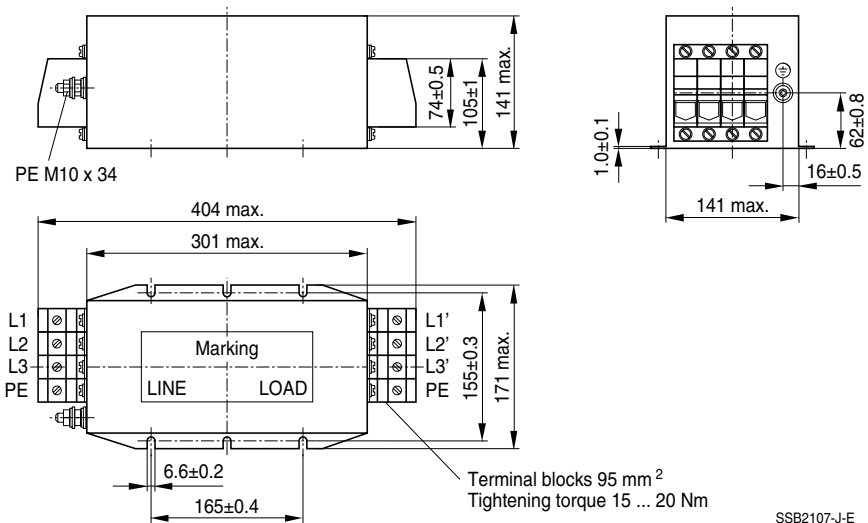
**B84143A0080R000 (80 A)**



**B84143A0120R000, B84143A0150R000 (120 and 150 A)**



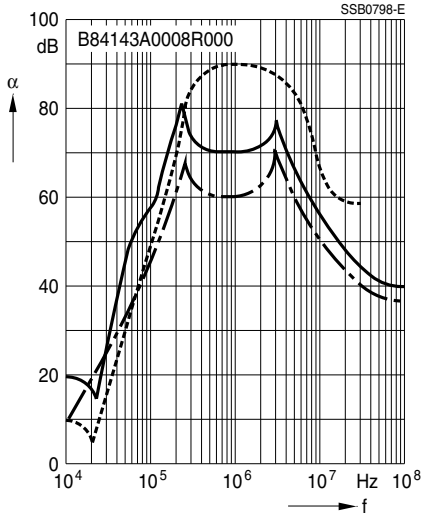
**B84143A0180R000 (180 A)**



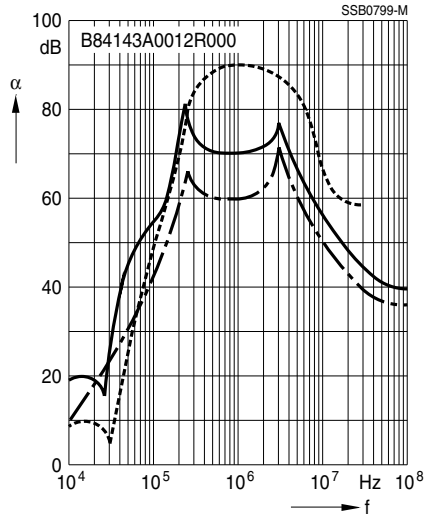
**Insertion loss** (typical values at  $Z = 50 \Omega$ )

- unsymmetrical, adjacent branches terminated
- - - - - common mode, all branches in parallel (asymmetrical)
- - - - - differential mode (symmetrical)

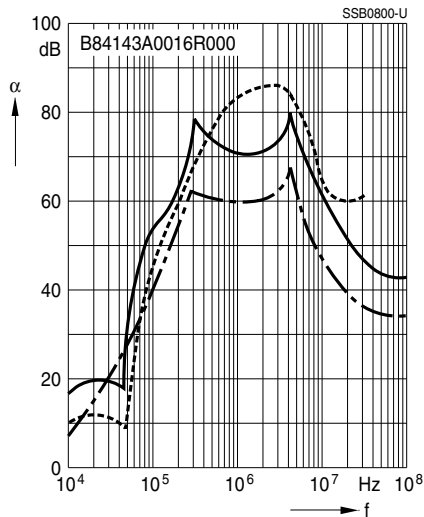
Filters for 8 A



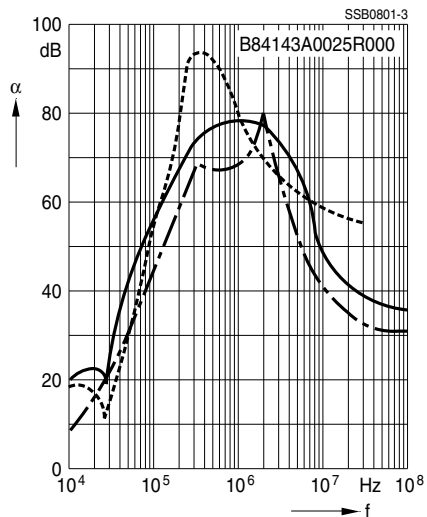
Filters for 12 A



Filters for 16 A



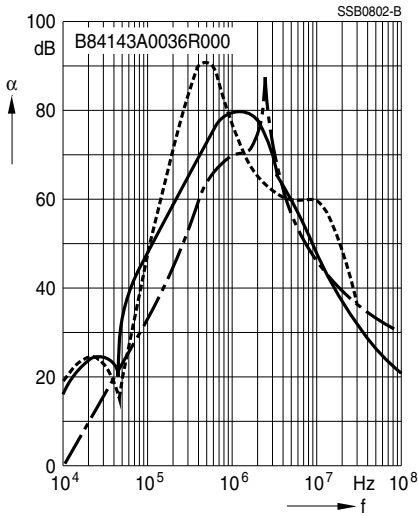
Filters for 25 A



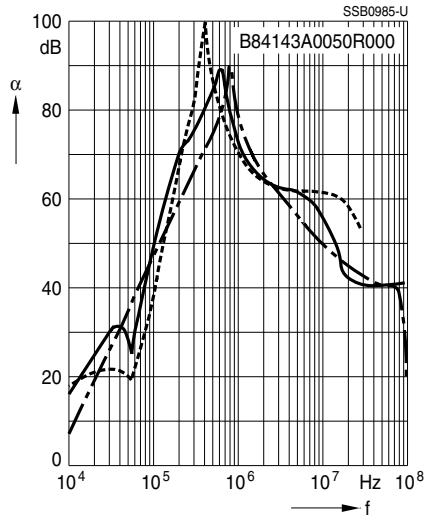
**Insertion loss** (typical values at  $Z = 50 \Omega$ )

- unsymmetrical, adjacent branches terminated
- - - - - common mode, all branches in parallel (asymmetrical)
- - - - - differential mode (symmetrical)

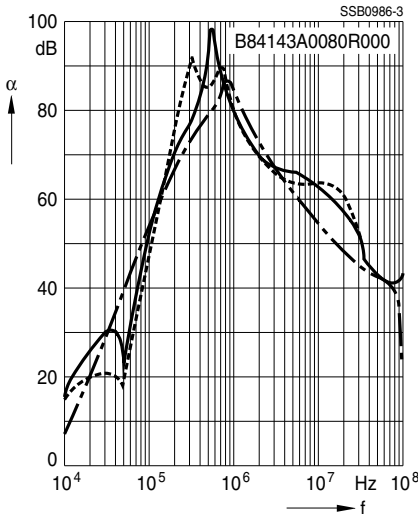
Filters for 36 A



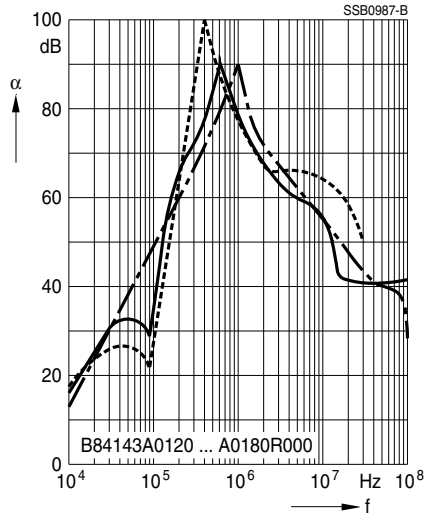
Filters for 50 A



Filters for 80 A




Filters for 120 ... 180 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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