EMC filters

2-line filters
for converters and power electronics
Rated current 10 to 60 A

Series/Type: **B84142A*R000, G075**
Date: January 2006

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Power line filters for 1-phase systems
Rated voltage 250 V DC/AC, 50/60 Hz
Rated current 10 to 60 A



Construction

- 2-line filters
- Metal case

Features

- High insertion loss
- Easy to install
- Degree of protection IP 20[1)] for *R000
- Very compact design
- Optimized for long motor cables and operation under full load
- ENEC10, UL and cUL approval

Applications

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

Terminals

- Finger-safe terminal blocks
- Screw thread M6

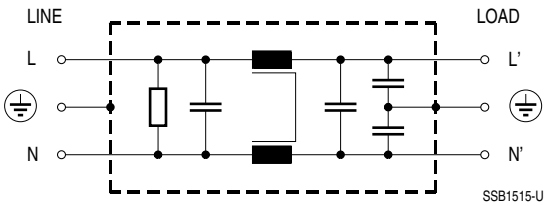
Marking

Marking on component:
Manufacturer's logo, ordering code,
rated voltage, rated current, rated temperature,
climatic category, terminal assignment, 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	250 V DC/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 250 V AC, 50 Hz
Climatic category (IEC 60068-1)	R000: 25/100/21 (–25 °C/+100 °C/21 days damp heat test) G075: 25/085/21 (–25 °C/+85 °C/21 days damp heat test)
Approvals	EN 133200, UL 1283, CSA C22.2 No.8

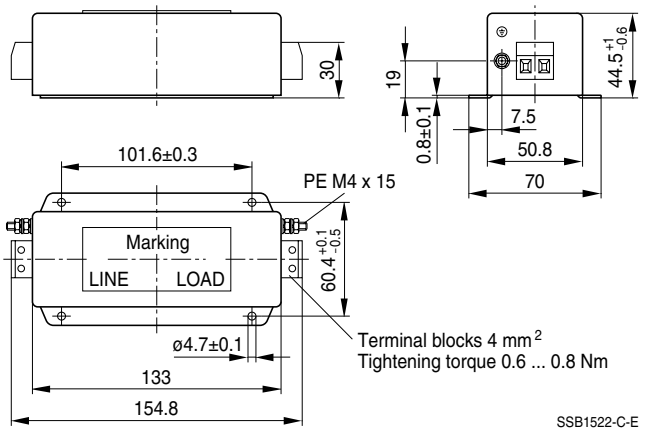
Characteristics and ordering codes

V_R AC/DC	I_R	Terminal cross section	I_{leak}	R_{typ}	Approx. weight	Ordering code	Approvals	
V	A	mm²	mA	mΩ	kg			
250	10	4	< 8	18	0.55	B84142A0010R000	×	×
	20	4	< 8	10	1.0	B84142A0020R000	×	×
	30	6	< 8	5	1.0	B84142A0030R000	×	×
	40	6	< 17	3.6	1.0	B84142A0040R000	×	×
	50	16	< 26	1.8	2.5	B84142A0050R000	×	×
	60	16	< 26	1.4	2.5	B84142A0060R000	×	×
		Screw stud						
	60	M6	< 26	1.4	2.5	B84142A0060G075	—	—

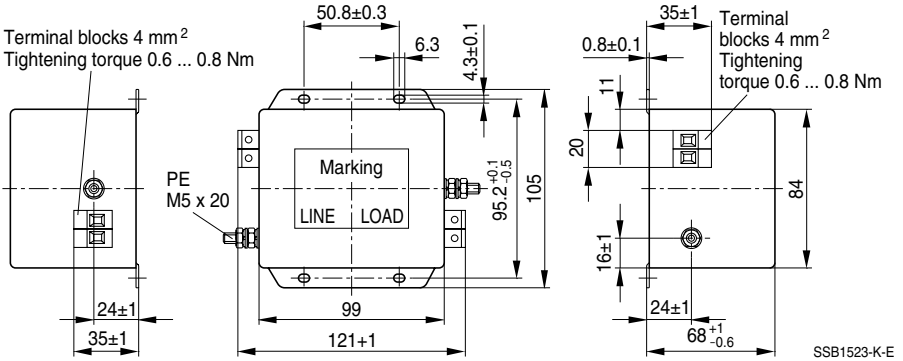
× = approval granted

Dimensional drawings

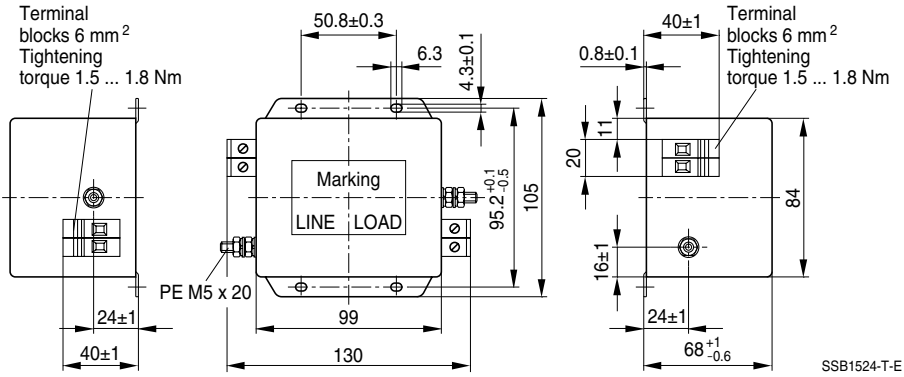
B84142A0010R000 (10 A)



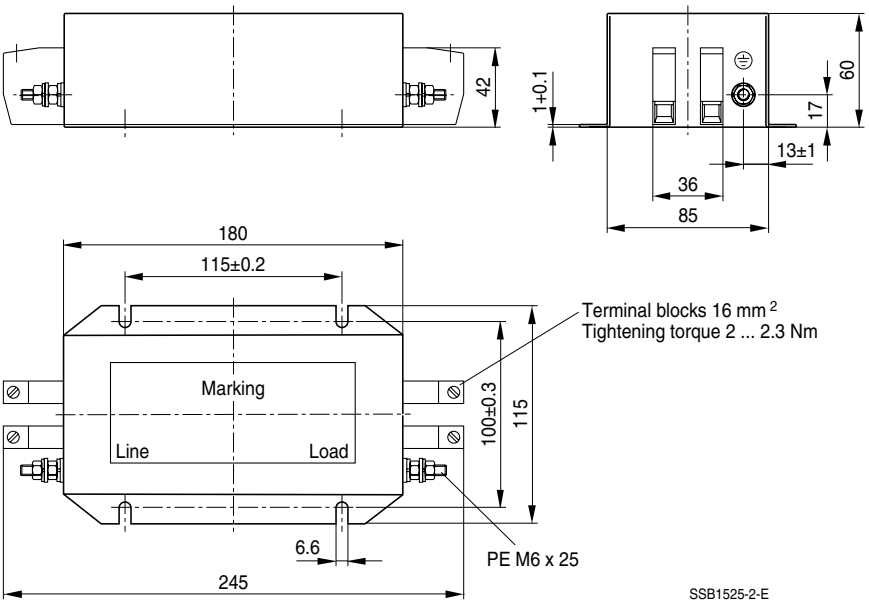
B84142A0020R000 (20 A)



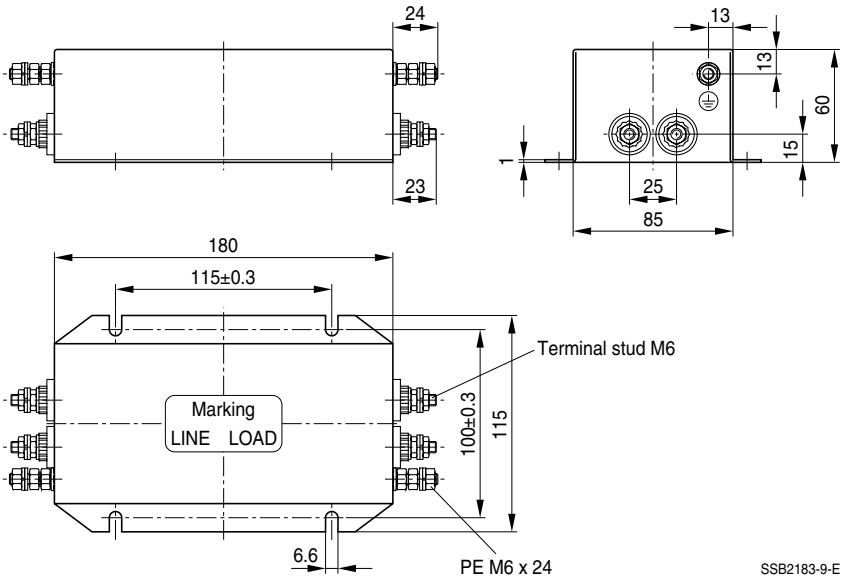
B84142A0030R000, B84142A0040R000 (30 and 40 A)



B84142A0050R000, B84142A0060R000 (50 and 60 A)



B84142A0060G075 (60 A)



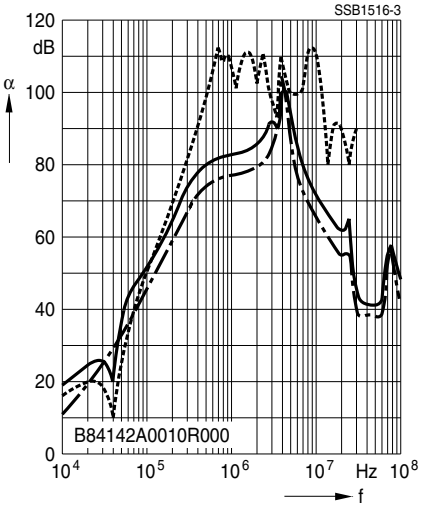
Insertion loss (typical values at Z = 50 Ω)

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

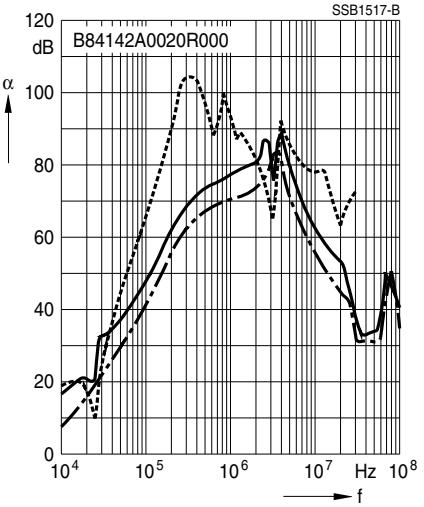
—·—·—·—·— common mode, all branches in parallel (asymmetrical)

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

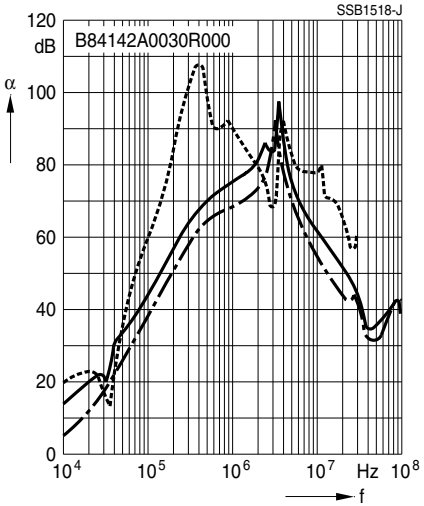
Filters for 10 A



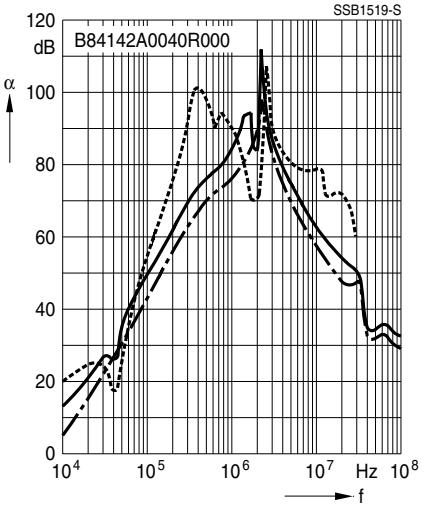
Filters for 20 A



Filters for 30 A



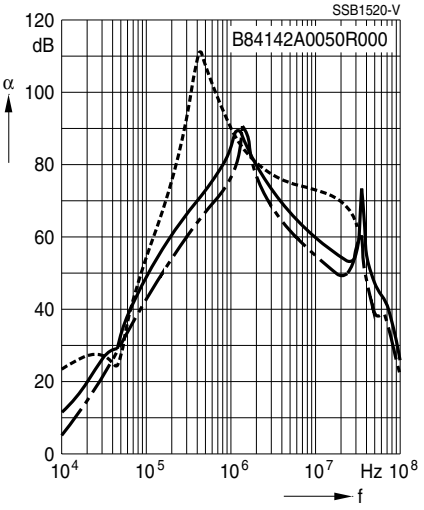
Filters for 40 A



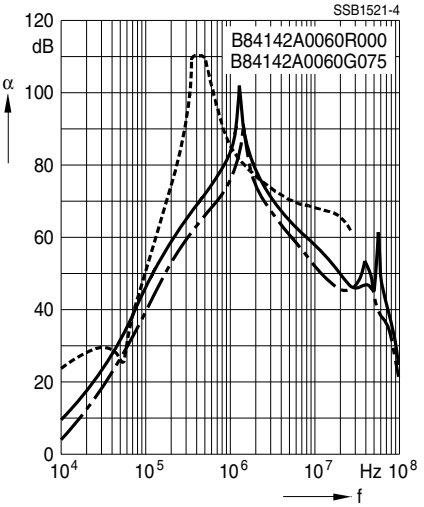
Insertion loss (typical values at Z = 50 Ω)

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

Filters for 50 A



Filters for 60 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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