



## **EMC filters**

3-line filters  
for converters and power electronics  
Rated current 180 to 1600 A

**Series/Type:** B84143B\*S080, S081


Date: January 2006

**Power line filters for 3-phase systems**  
**Rated voltage 520/300 and 760/440 V AC**  
**Rated current 180 to 1600 A**

### Construction

- 3-line filter
- Metal case

### Features

- Optimized leakage current
- Easy to install
- Very compact design
- Optimized for operation under full load
- Low weight
- Design complies with  
EN 133200, UL 1283, CSA C22.2 No.8
- UL, cUL approval 

### Applications

- Frequency converters for motor drives
- Wind farms
- Power supplies

### Terminals

- Busbars

### Marking

Marking on component:

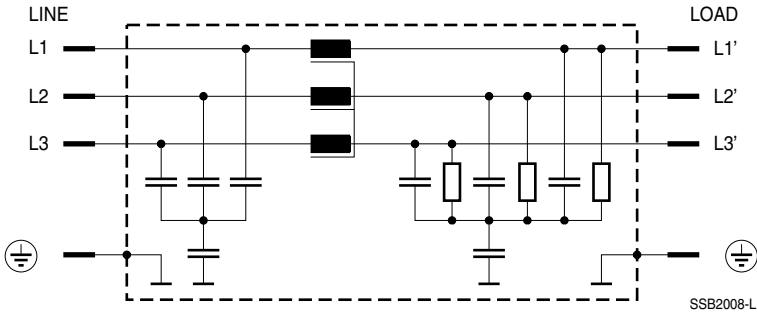
Manufacturer's logo, ordering code, frequency,  
rated voltage, rated current, rated temperature,  
climatic category, date code

Minimum marking on packaging:

Manufacturer's logo, ordering code





**Typical circuit diagram**



**Technical data and measuring conditions**

Rated voltage $V_R$	Type S080: 520/300 V AC, 50/60 Hz Type S081: 760/440 V AC, 50/60 Hz (Suitable for IT mains supply up to 560/320 V. See also Chapter "General", section 7.4)
Rated current $I_R$	Referred to 40 °C ambient temperature (180 A filter at 60 °C)
Test voltage $V_{test}$	Type ...S080: 2240 V DC, 2 s (line/line) 2720 V DC, 2 s (lines/case) Type ...S081: 3270 V DC, 2 s (line/line) 2890 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 $I_{leak}$	Type ...S080: at 520 V AC, 50 Hz Type ...S081: at 760 V AC, 50 Hz
Climatic category (IEC 60068-1)	25/100/21 (–25 °C/+100 °C/21 days damp heat test)
Approvals	UL 1283; CSA C22.2 No.8 (Type S080: 500/290 V; Type S081: 600/350 V)

**Characteristics and ordering codes**

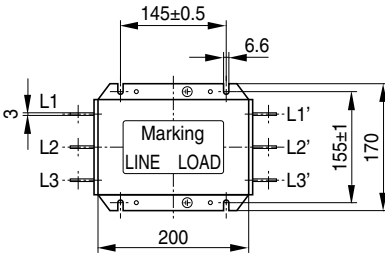
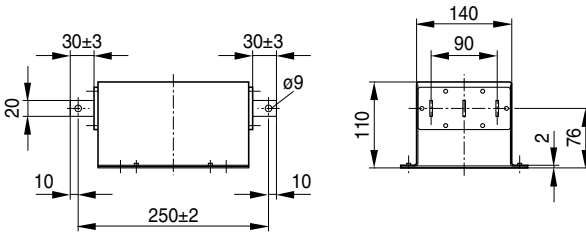
$V_R$ AC V	$I_R$ A	$I_{leak}$ mA	$R_{typ}$ $\mu\Omega$	Approx. weight kg	Ordering code	Approvals  	
Type S080						500/290 V	
520/300	180 <sup>1)</sup>	< 21	110	5.0	B84143B0180S080	×	×
	250	< 21	110	5.0	B84143B0250S080	×	×
	320	< 21	51	7.2	B84143B0320S080	×	×
	400	< 21	48	7.5	B84143B0400S080	×	×
	600	< 21	43	7.8	B84143B0600S080	×	×
	1000	< 40	29	18.5	B84143B1000S080	×	×
	1600	< 40	22	24.5	B84143B1600S080	—	—
Type S081 <sup>2)</sup>						600/350 V	
760/440	180 <sup>1)</sup>	< 31	110	5.0	B84143B0180S081	×	×
	250	< 31	110	5.0	B84143B0250S081	×	×
	320	< 31	51	7.2	B84143B0320S081	×	×
	400	< 31	48	7.5	B84143B0400S081	×	×
	600	< 31	43	7.8	B84143B0600S081	×	×
	1000	< 58	29	18.5	B84143B1000S081	×	×
	1600	< 58	22	24.5	B84143B1600S081	—	—

× = approval granted

1) B84143B0180S080 and B84143B0180S081 referred to 60 °C ambient temperature

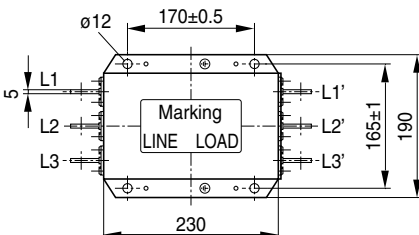
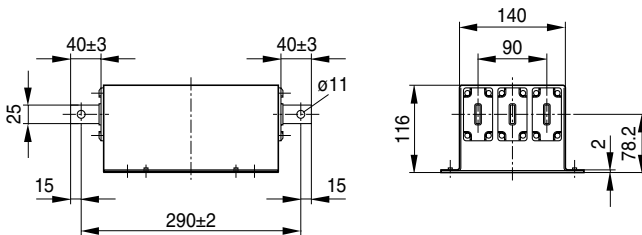
Dimensional drawings

B84143B0180S08\*, B84143B0250S08\* (180 A, 250 A)



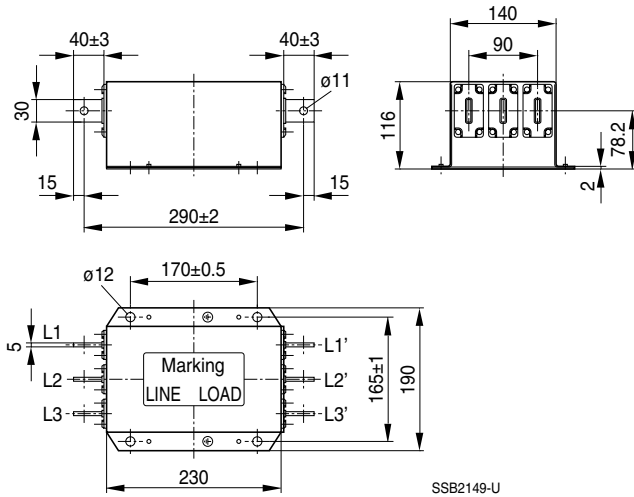
SSB2147-D

B84143B0320S08\*, B84143B0400S08\* (320 A, 400 A)

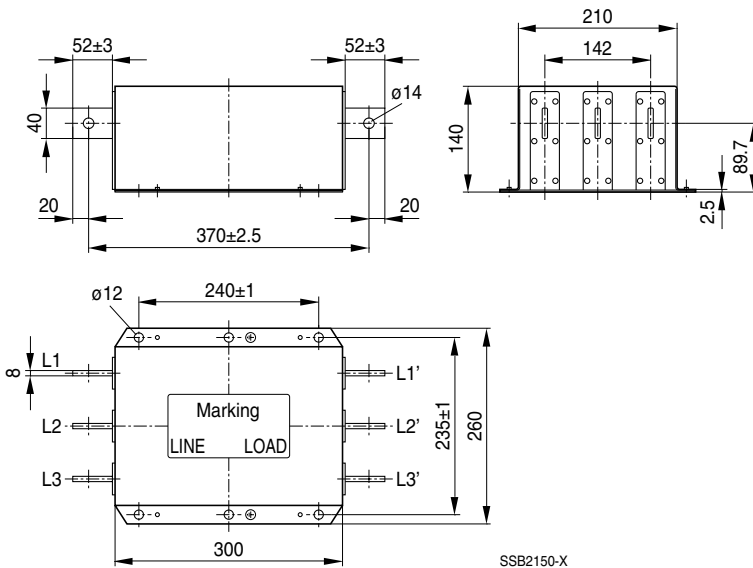


SSB2148-L

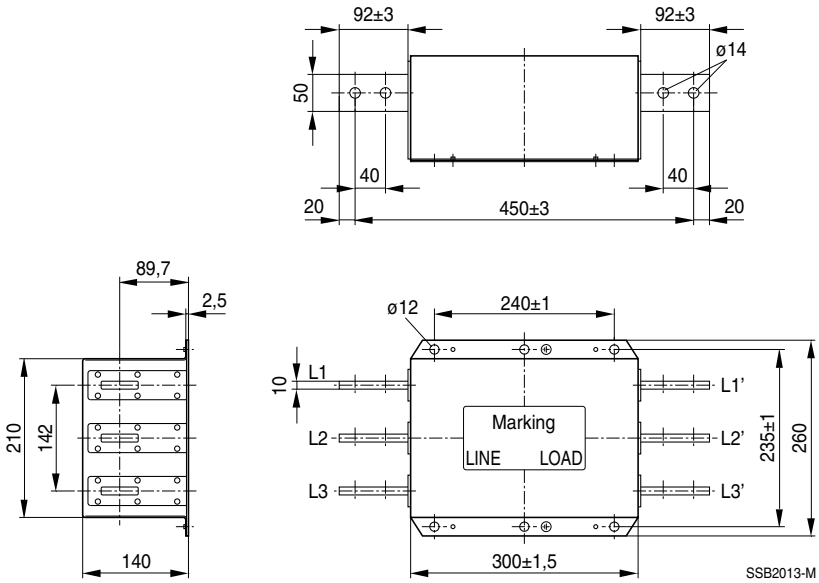
**B84143B0600S08\* (600 A)**



**B84143B1000S08\* (1000 A)**



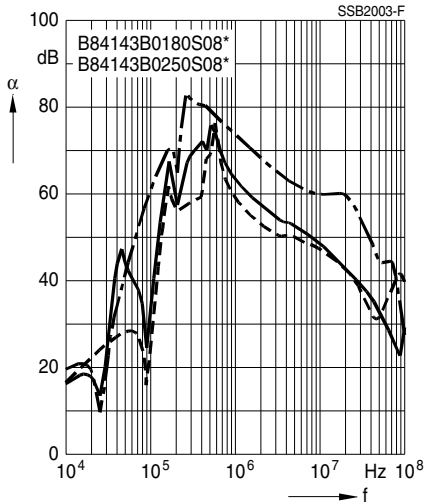
B84143B1600S08\* (1600 A)



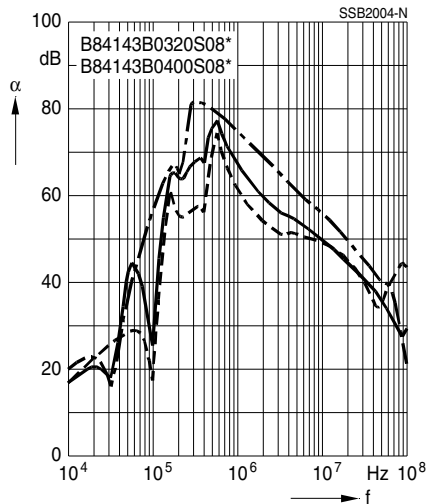
**Insertion loss** (typical values at  $Z = 50 \Omega$ )

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

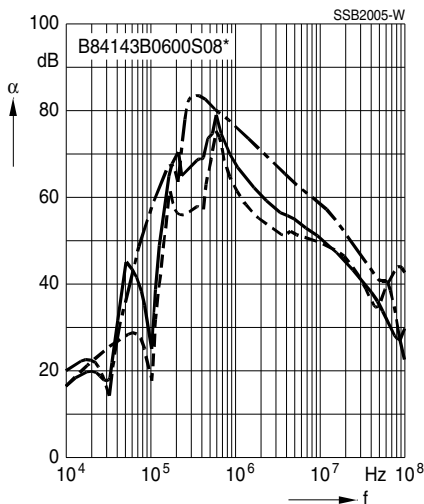
Filters for 180 A and 250 A



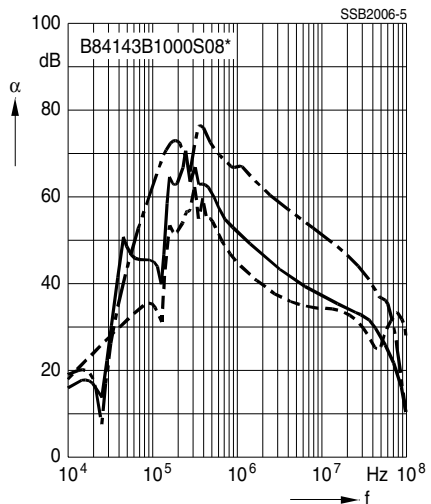
Filters for 320 A and 400 A



Filters for 600 A



Filters for 1000 A

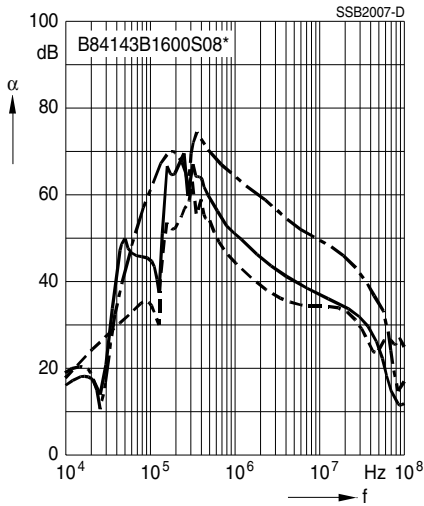





**Insertion loss** (typical values at  $Z = 50 \Omega$ )

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

Filters for 1600 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.

The following applies to all products named in this publication:

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