

EMC filters

3-line filters for converters and power electronics Rated current 8 to 220 A

Series/Type: B84143G*R110 Date: January 2006

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for converters and power electronics

Power line filters for 3-phase systems Rated voltage 520/300 V AC, 50/60 Hz Rated current 8 to 220 A

Alternative version

Series B84143A*R105 offers a low-cost solution.

Construction

- 3-line filter
- Metal case
- Book size

Features

- 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 20¹)
- Optimized for long motor cables and operation under full load
- Design complies with EN 133200, UL 1283, CSA C22.2 No.8
- UL approval N

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







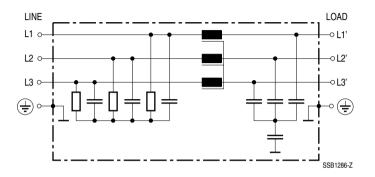


for converters and power electronics

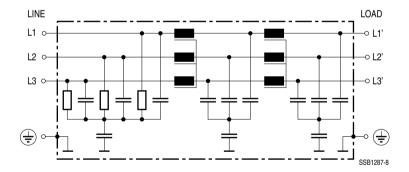
B84143G*R110

Typical circuit diagrams

Filters for 8 ... 25 A



Filters for 36 ... 220 A





B84143G*R110

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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 \cdot I _R for 3 min per hour or 2.5 \cdot 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 for 480 V AC. For 520 V AC pending.			

Characteristics and ordering codes

V _R AC	I _R	Terminal cro Line side: terminal blocks	ss section Load side: litz wires	I _{leak}	R _{typ}	Approx. weight	Ordering code	Appro- vals (480 V)
V	А	mm ²	mm ²	mA	mΩ	kg		<i>91</i>
520/300	8	4	1.5	< 6	40	1.3	B84143G0008R110	×
	20	4	2.5	< 6	10	1.3	B84143G0020R110	×
	25	4	2.5	< 6	10	1.3	B84143G0025R110	-
	36	6	6.0	< 16	5.2	2.8	B84143G0036R110	×
	50	16	10	< 16	2.4	3.3	B84143G0050R110	×
	66	25	16	< 16	1.8	4.4	B84143G0066R110	×
	90	25	25	< 16	1.2	4.9	B84143G0090R110	×
	120	50	35	< 16	1.0	7.5	B84143G0120R110	×
	150	50	35	< 16	0.7	8.0	B84143G0150R110	×
	220	95	70	< 16	0.4	11.5	B84143G0220R110	×

 \times = approval granted

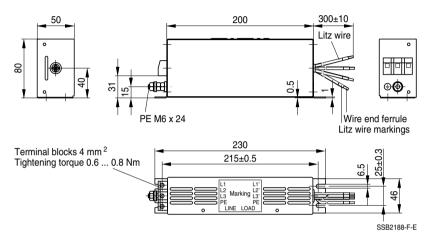
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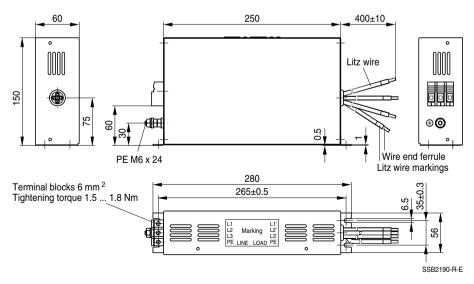
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Dimensional drawings

B84143G0008R110, B84143G0020R110, B84143G0025R110 (8 A to 25 A)



B84143G0036R110 (36 A)

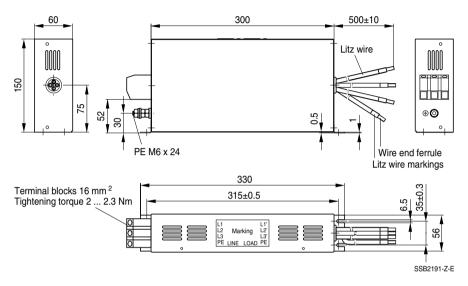




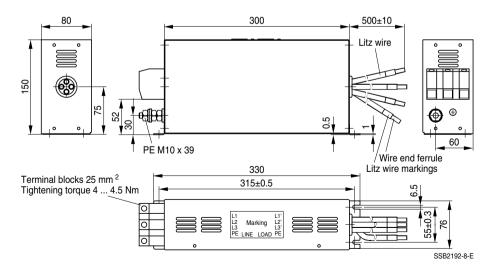
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B84143G0050R110 (50 A)



B84143G0066R110, B84143G0090R110 (66 A and 90 A)

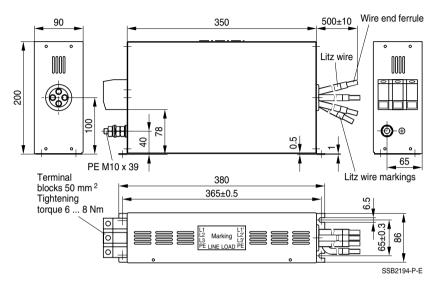




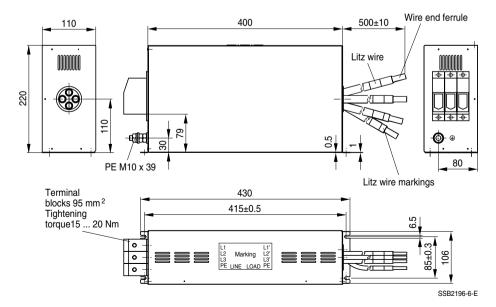
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B84143G0120R110, B84143G0150R110 (120 A and 150 A)



B84143G0220R110 (220 A)



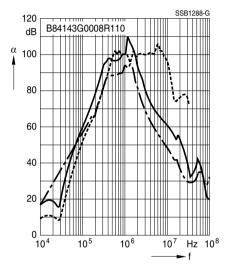


for converters and power electronics

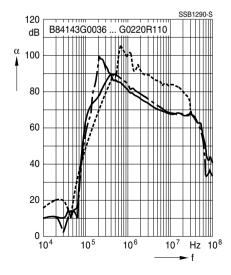
Insertion loss (typical values at $Z = 50 \Omega$)

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

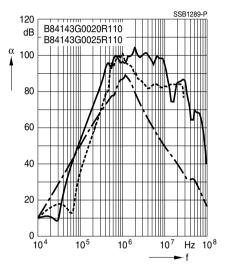
Filters for 8 A



Filters for 36 ... 220 A



Filters for 20 and 25 A





EMC filters

Cautions and warnings

Important information

Please read all safety and warning notes carefully before installing the EMC filter and putting it into operation (see \triangle). 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 lowvoltage 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.

\Lambda 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.



EMC filters

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