



3-line filters for converters and power electronics

520/300 V, 50/60 Hz, 10...100 A, 50 °C

Ordering code: **B84143A*R106**

Date: 2009-09-10

Version: 06



EPCOS

3-line filters

B84143A*R106

for converters and power electronics

Construction

- 3-line filter
- Metal case

Features

- High insertion loss
- Optimized leakage current
- Easy to install
- Low weight
- Compact design
- Degree of protection IP 20 ¹⁾
- Optimized for long motor cable and operation under full load
- ENEC10, UL und cUL approval



Applications

- Frequency converters for motor drives, e.g.
 - elevators
 - pumps
 - conveyor systems
 - HVAC systems (heating, ventilation and air conditioning)
- Power supplies
- Textile machines, packaging machines, machine-tools

Terminals

- Line side: finger-save terminal blocks
- Load side: finger-save terminal blocks

Marking

- Marking on component:
manufacturer's logo, ordering code, rated voltage, rated current,



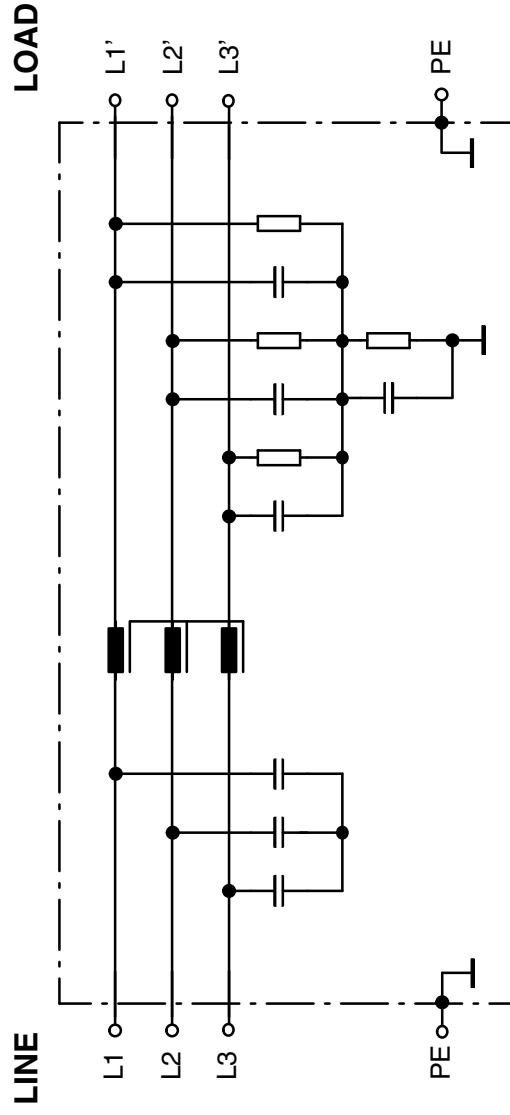
3-line filters

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Typical circuit diagram



Technical data and measuring conditions

Rated voltage	U_R	520/300	V AC
Rated frequency	f_R	50/60	Hz
Test voltage line to line for 2 s	U_{test}	2236	V DC
Test voltage line to case for 2 s	U_{test}	2720	V DC
Rated temperature	T_R	50	°C
Overload capability (thermal) for 3 min per hour or for 30 s per hour		$1.5 \times I_R$ $2.5 \times I_R$	
Climatic category (IEC 60068-1)		25/100/21	



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Characteristics and ordering codes

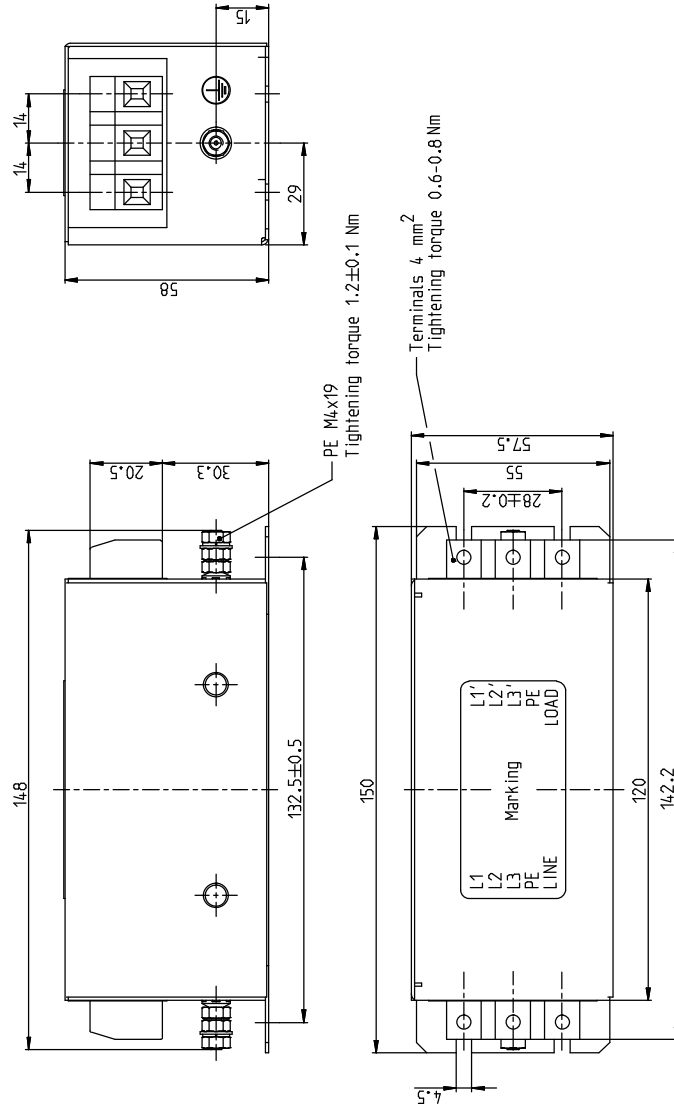
I _R	Terminal cross section mm ²	I _{leak} ²⁾ mA	R _{typ} mΩ	Approx. weight kg	Ordering code	Approvals		
A								
10	4	14,3	5,5	0,4	B84143A0010R106	x	x	x
20	4	14,3	3,3	0,6	B84143A0020R106	x	x	x
35	10	15,8	1,7	0,9	B84143A0035R106	x	x	x
50	25	15,8	1,1	1,4	B84143A0050R106	x	x	x
65	25	15,8	0,94	1,9	B84143A0065R106	x	x	x
80	50	15,8	0,60	2,4	B84143A0080R106	x	x	x
100	50	15,8	0,48	2,9	B84143A0100R106	x	x	x

X = approval granted

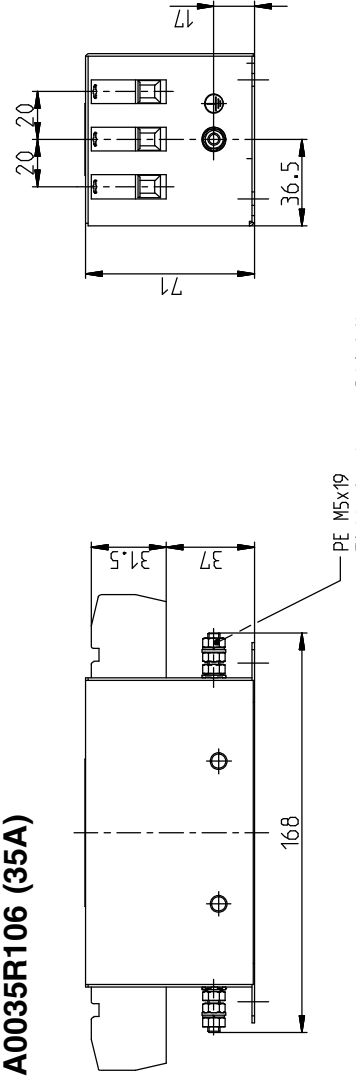
2) 3 phase operation in TN network; maximum voltage = U_R; frequency = 50 Hz without harmonics; tolerance of capacitors -20%/ 0%; worst case positioning of the components; unbalance 2% according EN 50160:2000.

Dimensional drawings

B84143A0010R106, B84143A0020R106 (10A and 20A)



B84143A0035R106 (35A)

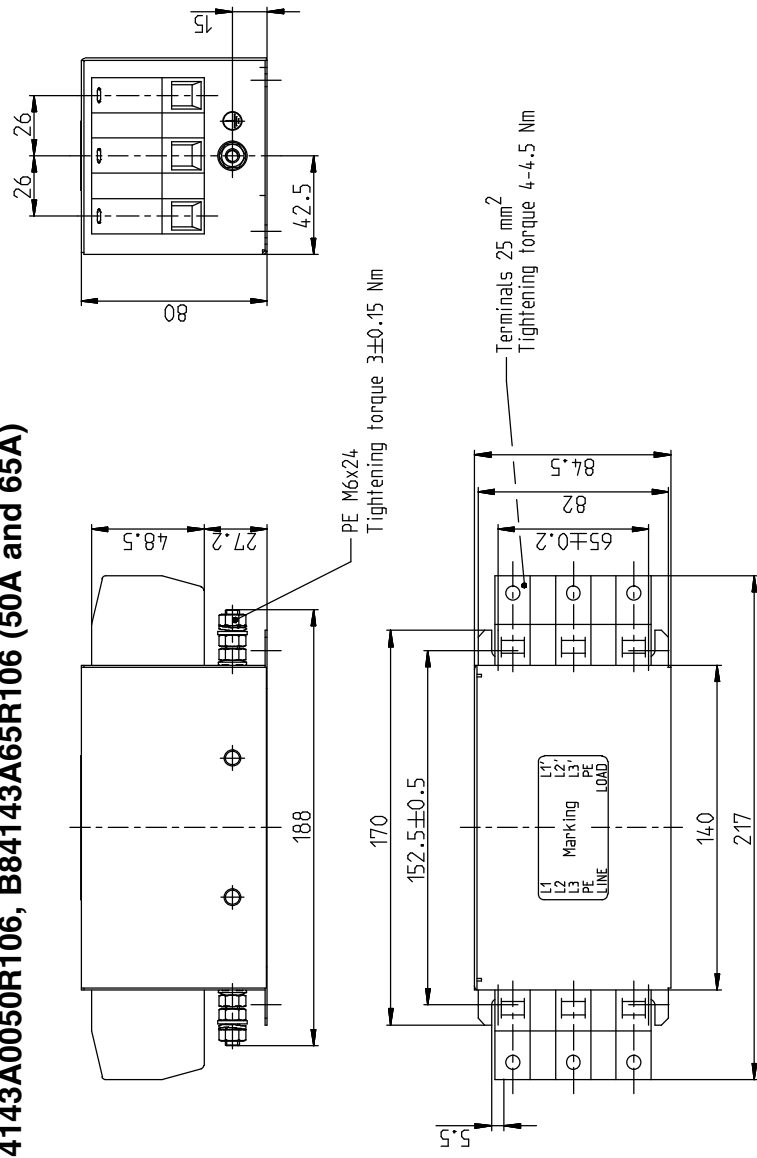


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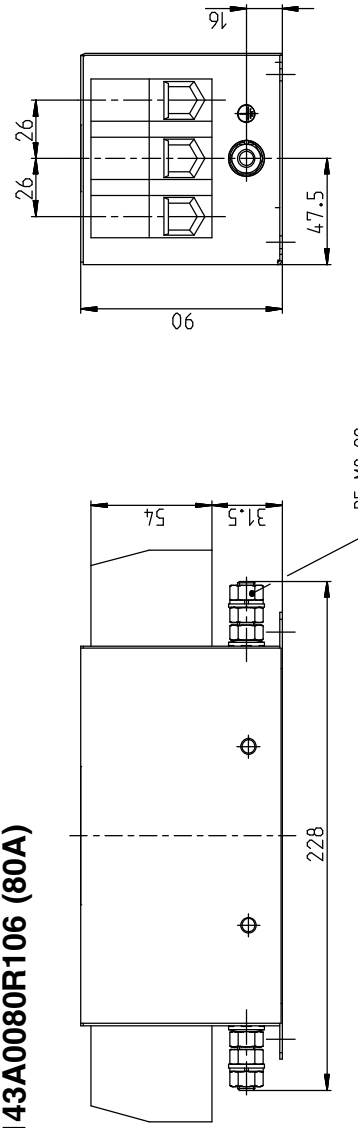
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B84143A0050R106, B84143A65R106 (50A and 65A)



B84143A0080R106 (80A)





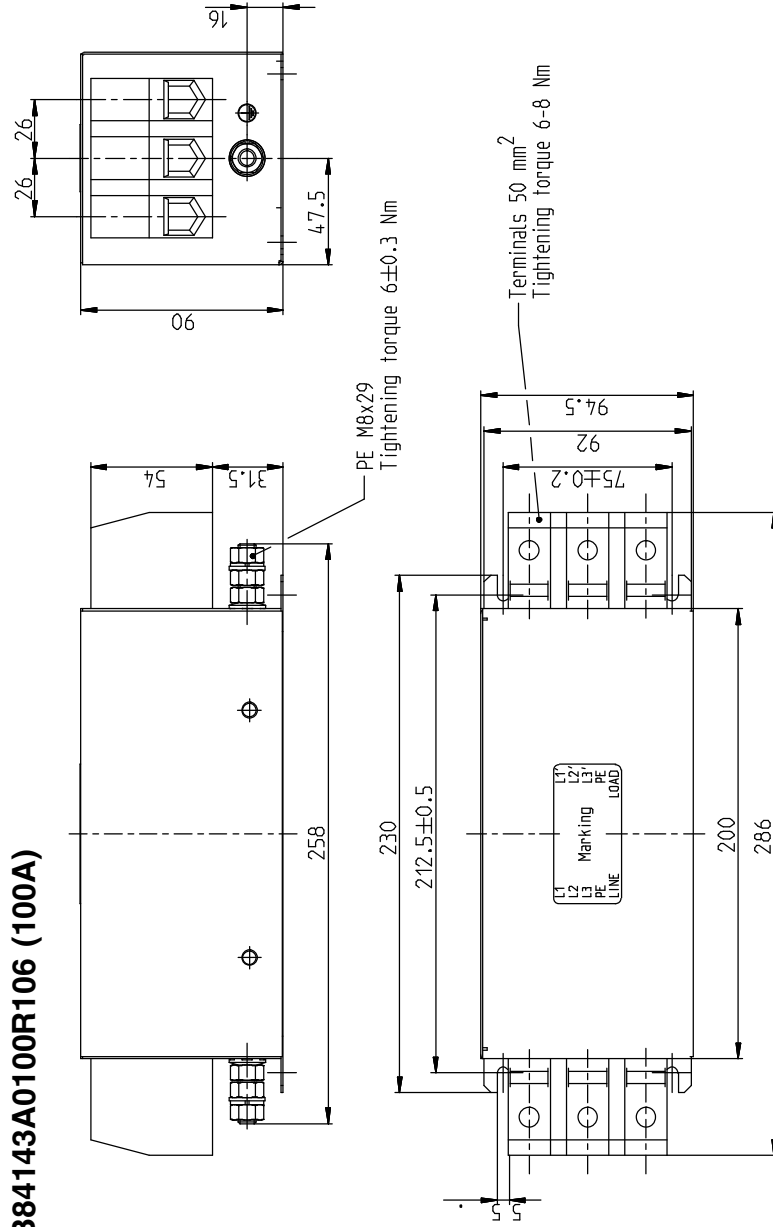
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B84143A0100R106 (100A)



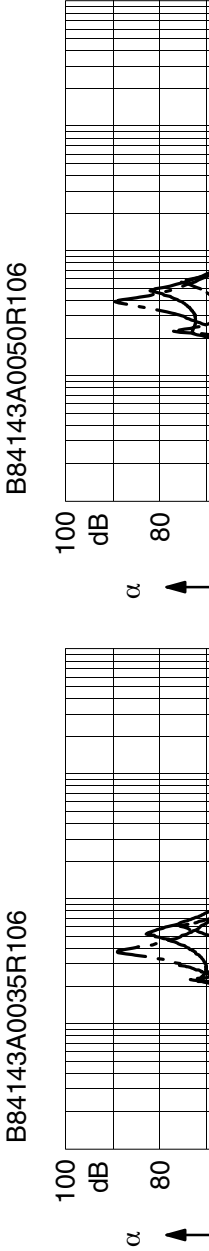
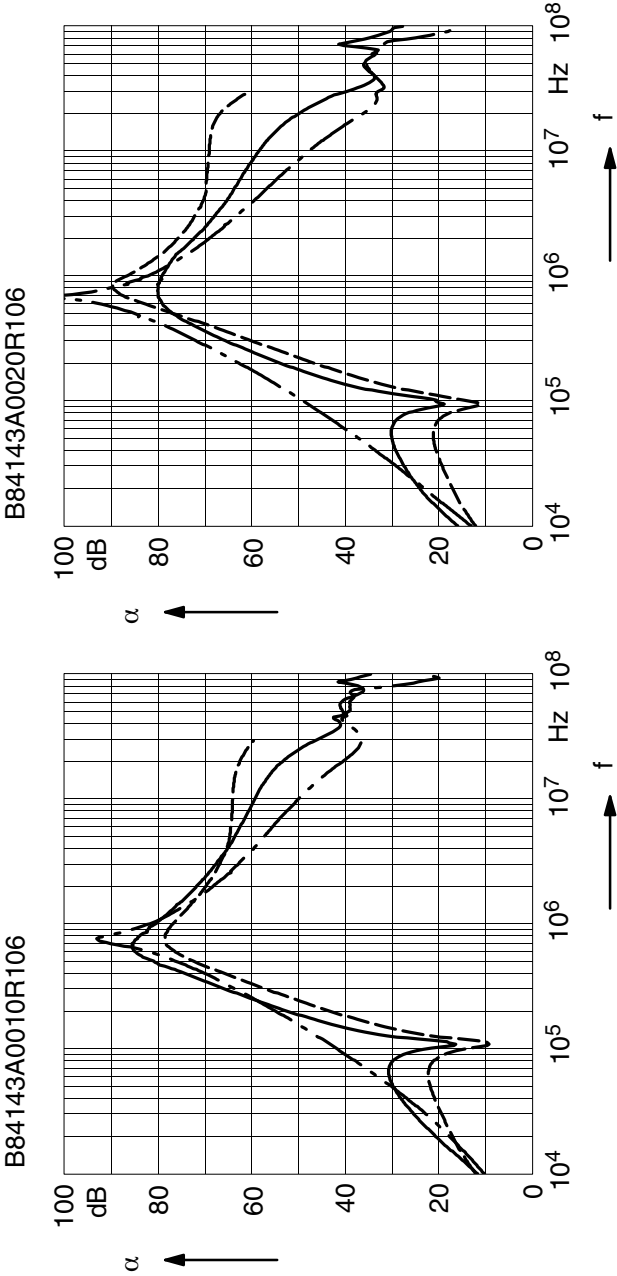
all dimensions in mm



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

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





3-line filters

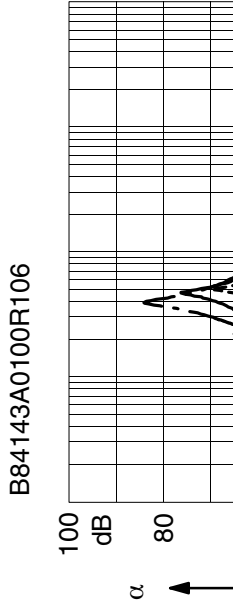
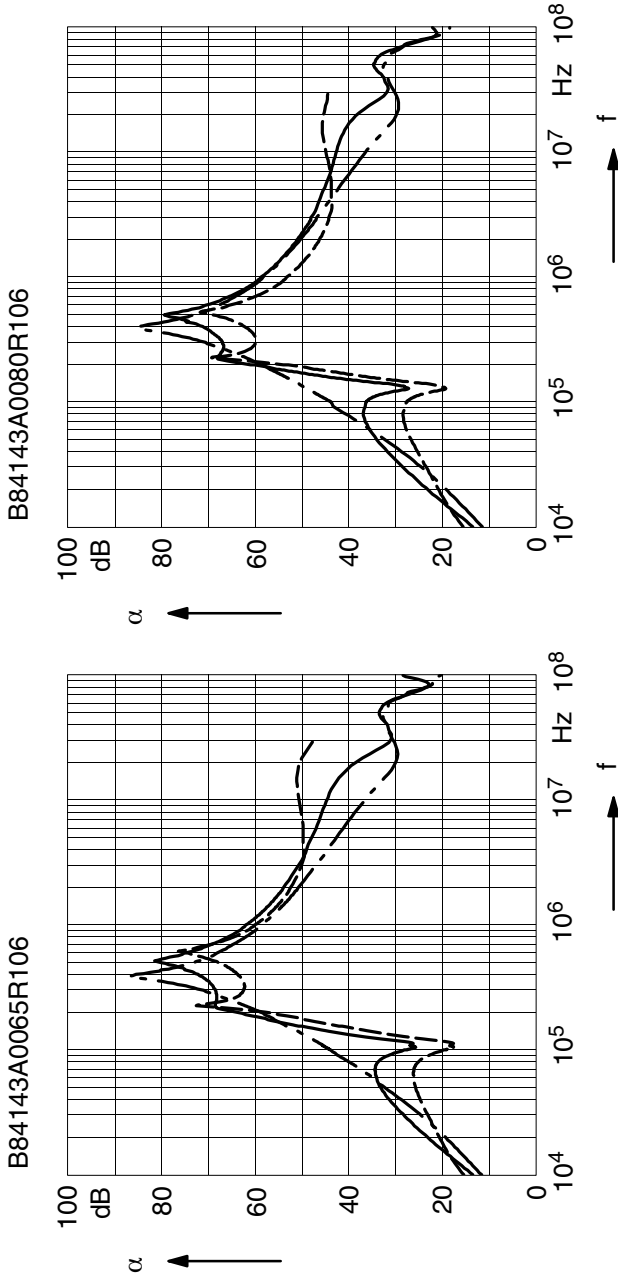
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Insertion loss (typical values at $Z = 50\ \Omega$)

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



Caution and warnings

- Please note the advices in our data book "EMC Filters" (latest edition); attention should be paid to the chapter "General safety notes".
- 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 with circuits able to cause resonances, impermissible voltages at higher frequencies etc. can lead to bodily injury and death as well as cause substantial material damages (e.g. destruction of the filter housing).
- EMC filters must be protected in the application against impermissible exceeding of the rated currents by overcurrent protective.
- In case of leakage currents $> 3.5 \text{ mA}$ you shall mount the PE conductor stationary with the required cross section before beginning of operation and save it against disconnecting. For leakage currents $I_L^{4)} < 10 \text{ mA}$ the PE conductor must have a KU value ³⁾ of 4.5; for leakage currents $I_L \geq 10 \text{ mA}$ the PE conductor must have a KU value of 6.

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