



3-Line Filters

B84143-G\*-R110

for Converters and Power Electronics

B84143-G\*-R112


**Power line filters for three-phase systems**  
Rated voltage 480/275 and 520/300 V~, 50/60 Hz  
Rated current 8 to 220 A



#### Construction

- Three-line filter
- Metal case
- Book size

#### Features

- High insertion loss
- Low leakage current
- Optimized footprint saves space
- Litz wires on the load side reduce mounting time
- Low weight
- Degree of protection: IP 20<sup>1)</sup>
- Design based on  
EN 133 200, CSA 22.2 No.8 1986
- Optimized for long motor cables and operation under full load
- UL 1283 approval for type -R110 ,  
for -R112 UL and CSA approval pending

#### 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: Safe-to-touch terminal blocks
- Load: Litz wires

#### Marking

Marking on component:  
Manufacturer's logo, ordering code,  
rated voltage, rated current,  
rated temperature, date code

Minimum marking on packaging:  
Manufacturer's logo, ordering code

1) In accordance with IEC 60529:1989; EN 60529:1991; DIN VDE 0470-1



3-Line Filters

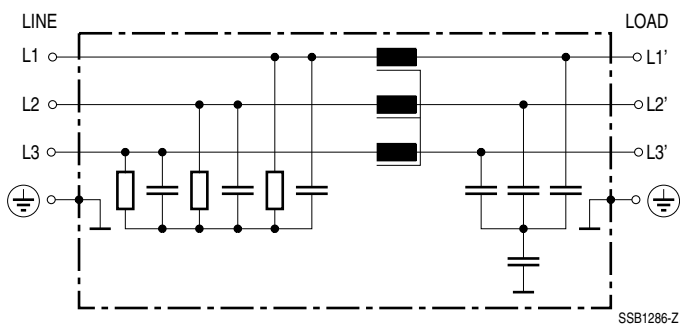
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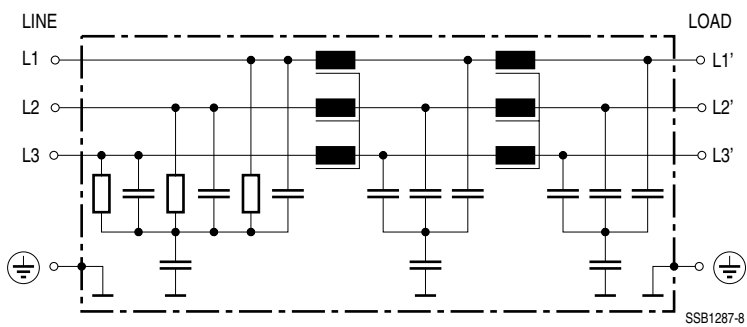
B84143-G<sup>+</sup>-R112

Typical circuit diagrams

B84143-G8 ... G20-R110/-R112



B84143-G36 ... G220-R110/-R112





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**Technical data**

|                            |  |
|----------------------------|--|
| Rated voltage $V_R$        | 480/275 V~, 50/60 Hz (type -R110)<br>520/300 V~, 50/60 Hz (type -R112)               |
| Rated current $I_R$        | Referred to 40 °C ambient temperature  |
| Test voltage $V_P$         | 1770 V-, 2 s (line/line)<br>2700 V-, 2 s (lines/case)                                |
| Overload capability        | 1,5 · $I_R$ for 3 min per hour or<br>2,5 · $I_R$ for 30 s per hour                   |
| Leakage current $I_{leak}$ | at 480 V~, 50 Hz   |
| Climatic category          | 25/100/21 (- 25 °C/+ 100 °C/21 days damp heat test)<br>in accordance with EN 60068-1 |

**Characteristics and ordering codes**

| $I_R$ | Terminal cross section                              |   | $I_{leak}$<br>typ. 1) | $R_{typ}$ | Approx.<br>weight | Ordering code    |
|-------|---|---|-----------------------|-----------|-------------------|------------------|
|       | line side:<br>terminal<br>blocks<br>mm <sup>2</sup> | load side:<br>litz wires<br>mm <sup>2</sup> |                       |           |                   |                  |
| A     |   |   | mA                    | mΩ        | kg                |                  |
| 8     | 4   | 1,5   | < 6                   | 40        | 1,3               | B84143-G8-R11*   |
| 20    | 4   | 2,5   | < 6                   | 10        | 1,3               | B84143-G20-R11*  |
| 36    | 6   | 6,0   | < 16                  | 5,2       | 2,8               | B84143-G36-R11*  |
| 50    | 16  | 10  | < 16                  | 2,4       | 3,3               | B84143-G50-R11*  |
| 66    | 25  | 16  | < 16                  | 1,8       | 4,4               | B84143-G66-R11*  |
| 90    | 25  | 25  | < 16                  | 1,2       | 4,9               | B84143-G90-R11*  |
| 120   | 50  | 35  | < 16                  | 1,0       | 7,5               | B84143-G120-R11* |
| 150   | 50  | 35  | < 16                  | 0,7       | 8,0               | B84143-G150-R11* |
| 220   | 95  | 70  | < 16                  | 0,4       | 11,5              | B84143-G220-R11* |

**Compilation of ordering code**

Replace the asterisk \* by the code number for the required version:

0 = 480 / 275 V

2 = 520 / 300 V

1) At rated operation



3-Line Filters

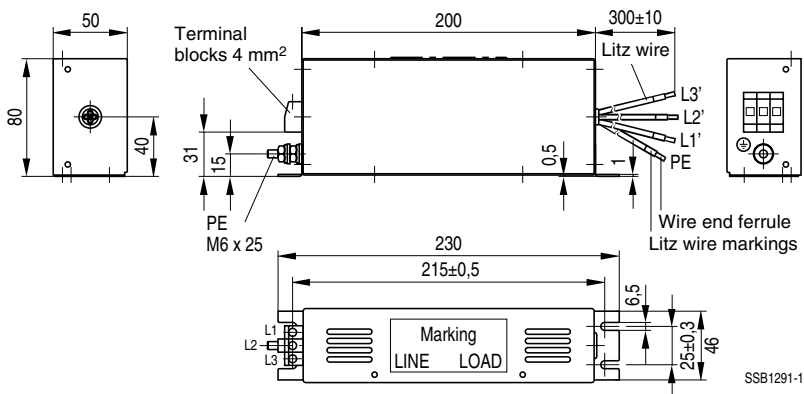
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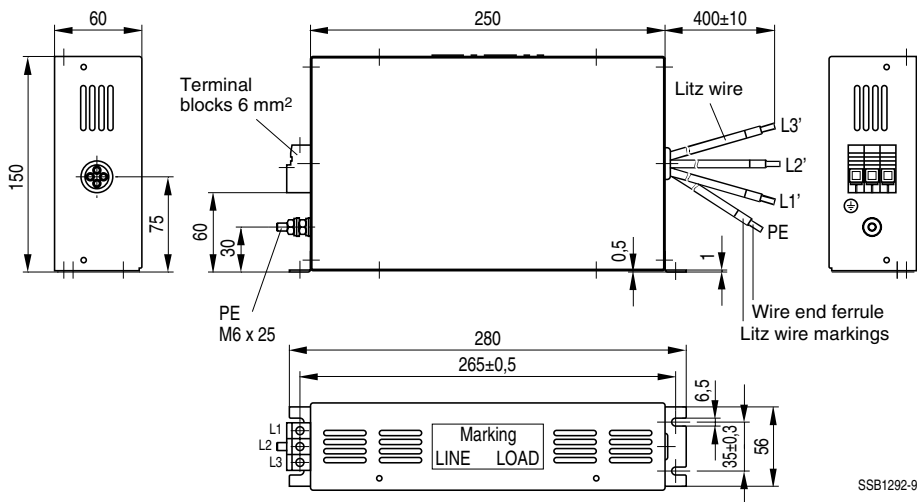
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Dimensional drawings

B84143-G8-R11\*, B84143-G20-R11\*



B84143-G36-R11\*





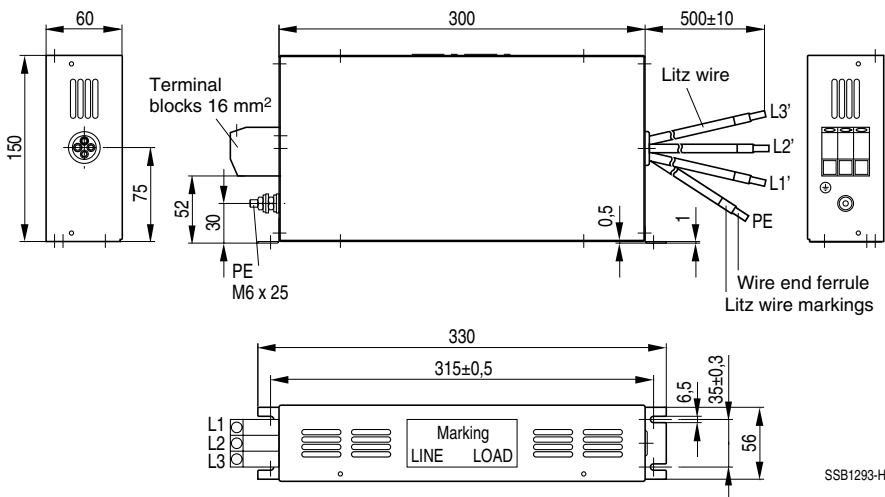
3-Line Filters

B84143-G<sup>+</sup>-R110

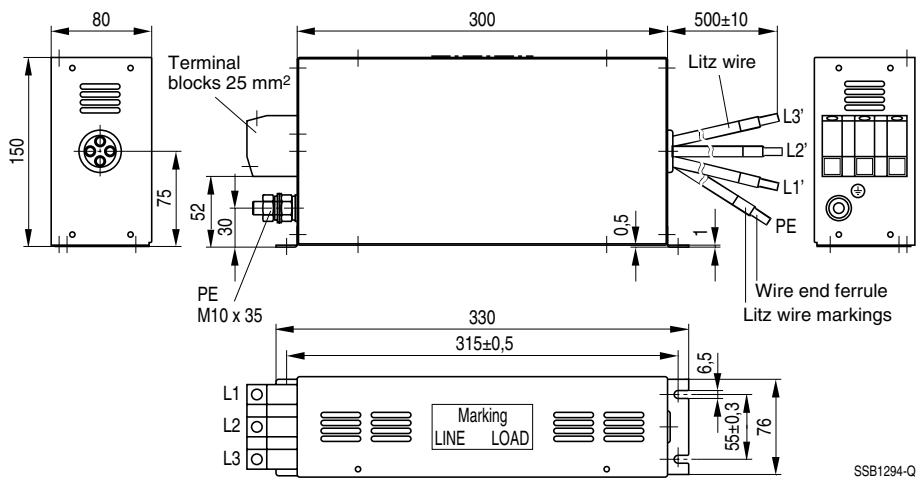
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**B84143-G50-R11\***



**B84143-G66-R11\*, B84143-G90-R11\***





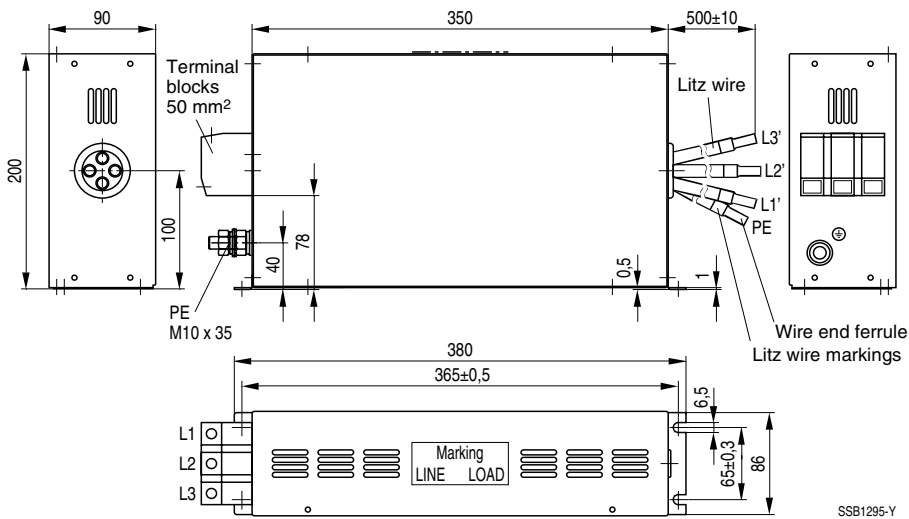
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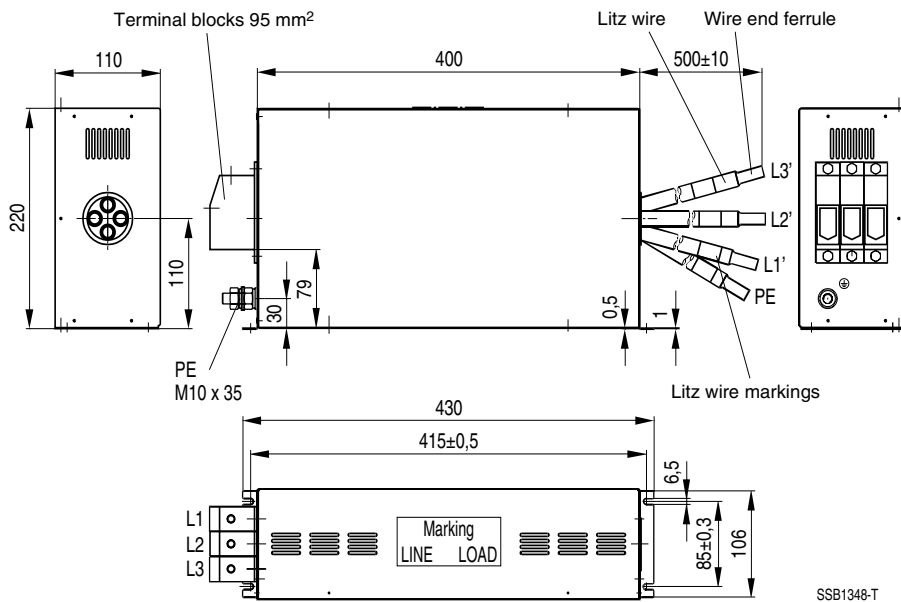
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B84143-G<sup>+</sup>-R112

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B84143-G220-R11\*





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B84143-G<sup>+</sup>-R110

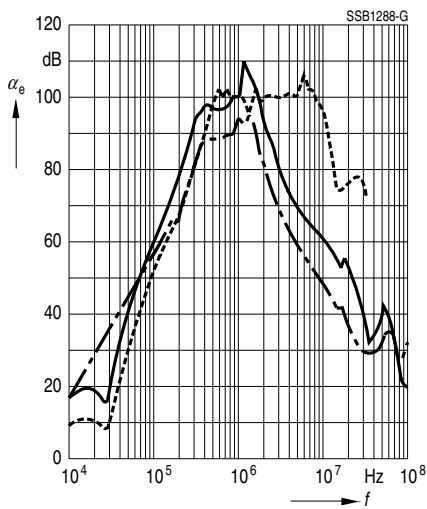
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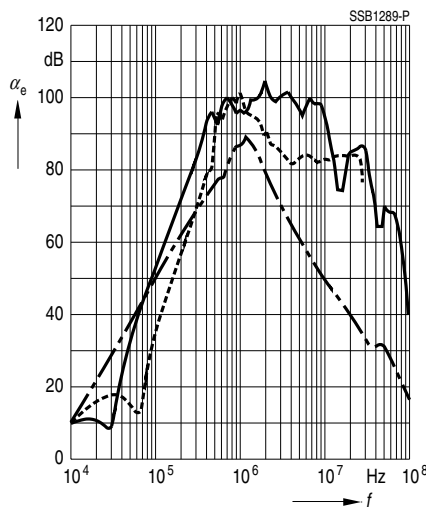
**Insertion loss** (typical values at  $Z = 50 \Omega$ )

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

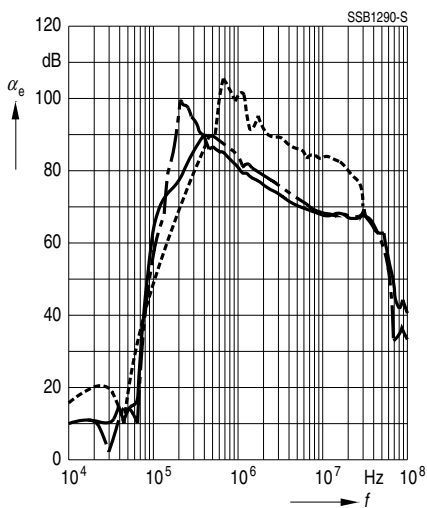
B84143-G8-R11\*



B84143-G20-R11\*



B84143-G36 ... G220-R11\*



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