

Two- and four-line filters
16 to 100 A
Single-stage
Stopband attenuation up to 40 GHz



Features

- General-purpose use through design with separate lines without intercoupling
- Use of single chokes
- Insertion loss to CISPR 17

Design

The electrical components are incorporated in an RF-tight case of stainless steel. The cables enter through glands. The RF-tight termination of the openings is produced by specially shaped lids.

The conductors and equipment grounding conductor are connected by threaded bolts. The space around the fixing holes is left as bare metal (unpainted) to ensure good RF contact with metal surfaces (chassis, ground).

Protective measures (grounding)

The high capacitances between the lines and ground require special protective measures. If there are no product-specific requirements, protection with a secondary ground wire (diameter min. 10 mm²) in accordance with EN 50178 is necessary. For this purpose the filter case have connecting bolts at each end.

Resistors are incorporated in the filter to discharge capacitors after turn-off.

Installation

Filters are supplied complete with all parts required for RF-tight installation (fixing screws, flanges, RF gaskets, cable glands) and installation instructions.

No welding is needed on the shielding wall, so any subsequent installation is quite simple. And the uniform template of the attachment points allows straightforward replacement of a two-line filter by a four-line filter for example.

Accessories and special versions

RF-tight flexible connector fittings in widths of 25 and 40 mm are available for installation spaced away from the shielding wall.

Filters with an EMP protection add-on for surge currents up to 100 kA per line are available on request.

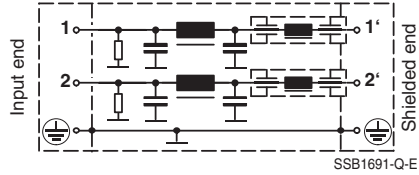
To match requirements, filters can be supplied with different kinds of EMC or shielding cable glands.

Tests

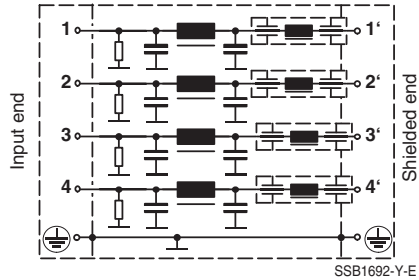
All filters are 100 % tested and the results are archived under a filter's serial number. If required, a test report can be generated for the serial number.

Circuit diagrams

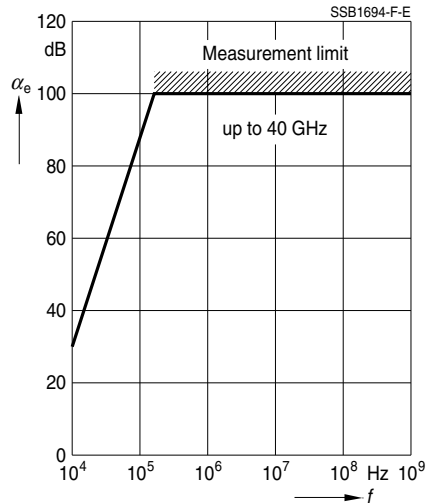
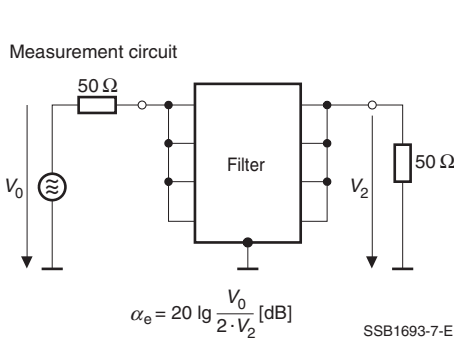
Two-line filters B84299-+1***-B1



Four-line filters B84299-+1***-E1



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



General technical data

Rated voltage V_R for two-line filters	250 V	line/line line/case
Rated voltage V_R for four-line filters	440 V 250 V	line/line line/case
Rated current I_R	see characteristics (next page)	referred to + 40°C ambient temperature
Max. admissible overcurrent I_{over}	$75 \cdot I_R$ for 50 ms $10 \cdot I_R$ for 1 s $2 \cdot I_R$ for 1 min $1,4 \cdot I_R$ for 15 min	
Rated frequency f_R	50/60 Hz	
Test voltages V_T	1200 Vdc, 2 s 1200 Vdc, 2 s	line/line line/case
Voltage drop/phase ΔV	< 1 %	of V_R at 50 Hz and I_R
DC resistance R_{max}	see characteristics (next page)	per line
Power dissipation P_D	see characteristics (next page)	at I_R
Capacitive reactive current/line $I_{reactive}$	1 A	at 400/230V and 50 Hz (typical value)
Climatic category	25/085/56	(-25 °C/+85 °C/56 days damp heat test) to EN 60068-1
Mechanical version	C	cable glands at both ends or flexible connector fitting
	D	direct connection to shielding wall
Weight (approx.)	18 kg	two-line filters
	20 kg	four-line filters

Characteristics and ordering codes

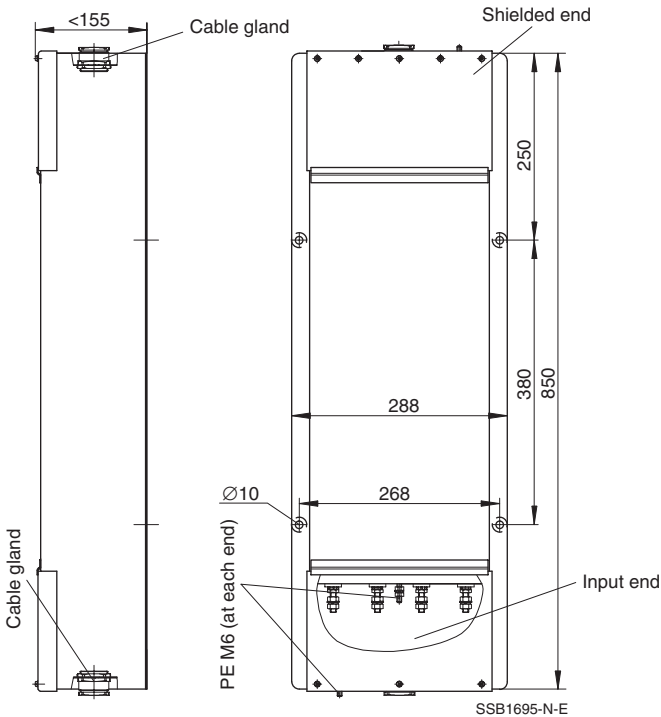
I_R A	Mechanical version	R_{max} m Ω	P_D W	Ordering code
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Two-line filters

2 × 16	C	< 14	< 8	B84299-C1160-B1
2 × 16	D	< 14	< 8	B84299-D1160-B1
2 × 32	C	< 3,5	< 11	B84299-C1320-B1
2 × 32	D	< 3,5	< 11	B84299-D1320-B1
2 × 63	C	< 3,0	< 25	B84299-C1630-B1
2 × 63	D	< 3,0	< 25	B84299-D1630-B1
2 × 100	C	< 1,5	< 30	B84299-C1101-B1
2 × 100	D	< 1,5	< 30	B84299-D1101-B1

Four-line filters

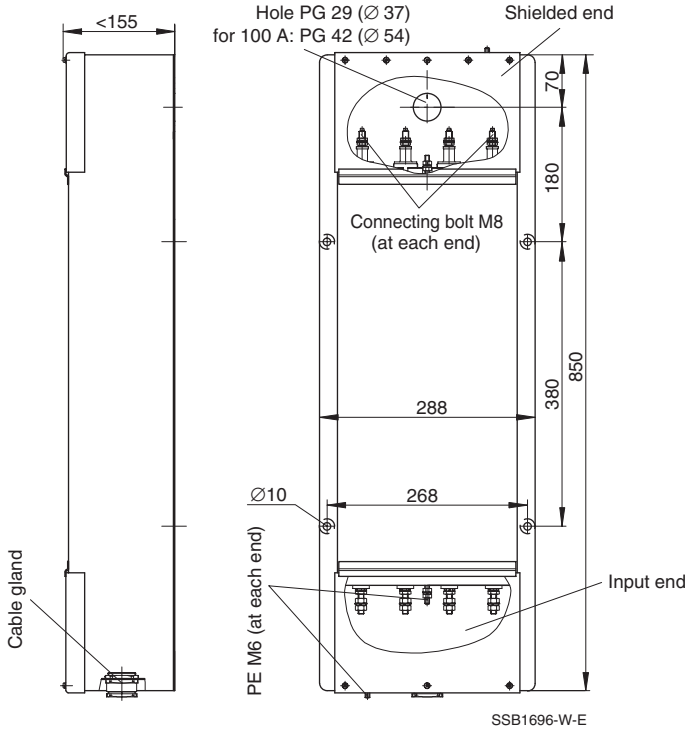
4 × 16	C	< 14	< 20	B84299-C1160-E1
4 × 16	D	< 14	< 20	B84299-D1160-E1
4 × 32	C	< 3,5	< 20	B84299-C1320-E1
4 × 32	D	< 3,5	< 20	B84299-D1320-E1
4 × 63	C	< 3,0	< 35	B84299-C1630-E1
4 × 63	D	< 3,0	< 35	B84299-D1630-E1
4 × 100	C	< 1,5	< 45	B84299-C1101-E1
4 × 100	D	< 1,5	< 45	B84299-D1101-E1

Dimensional drawings
Mechanical version C (cable glands at both ends)


RAL 7035 color
(light gray, semigloss)

I_R A	Fittings	Suitable for cable outer diameter	Package	Suitable for cable outer diameter
16 32	Cable gland PG 29 with cutout sealing ring	17 to 19 mm 20 to 22 mm 23 to 25 mm 26 to 28 mm	Cable gland PG 21 and reducer rings	9 to 11 mm
				12 to 14 mm
63			—	15 to 17 mm
				18 to 20 mm
100	Cable gland PG 42 with cutout sealing ring	29 to 31 mm 32 to 34 mm 35 to 37 mm 38 to 40 mm	Cable gland PG 29 and reducer rings	

RF-tight connection to shielding wall, see page 21.

Mechanical version D (direct connection to shielding wall)


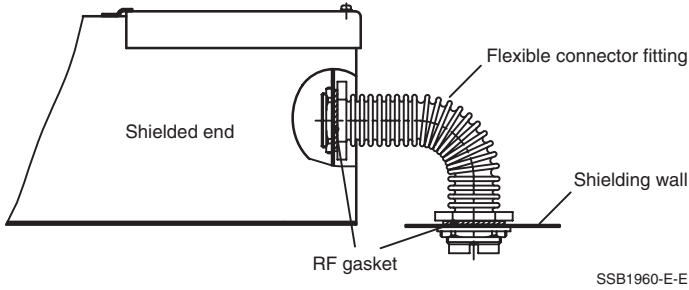
RAL 7035 color
(light gray, semigloss)

I_R A	Fittings	Suitable for cable outer diameter	Package	Suitable for cable outer diameter
16 32	Cable gland PG 29 with cutout sealing ring	17 to 19 mm 20 to 22 mm 23 to 25 mm 26 to 28 mm	Cable gland PG 21 and reducer rings	9 to 11 mm
				12 to 14 mm
63			—	15 to 17 mm
				18 to 20 mm
100	Cable gland PG 42 with cutout sealing ring	29 to 31 mm 32 to 34 mm 35 to 37 mm 38 to 40 mm	Cable gland PG 29 and reducer rings	

RF-tight connection to shielding wall, see page 21.

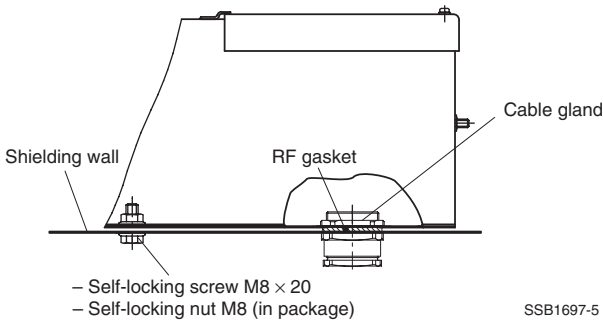
Filters for Power Lines	B84299-+1***-B1
16 to 100 A, 100 dB from 150 kHz	B84299-+1***-E1

RF-tight connection to shielding wall with flexible connector fitting (mechanical version C)



I_R A	Flexible connector fitting (must be ordered separately)	Ordering code
16 ... 63	Width 25 mm	B84298-A42-L** 1)
100	Width 40 mm	B84298-A44-L** 1)

RF-tight connection to shielding wall (mechanical version D)



I_R A	Cable gland	Hole in shielding wall	Bare metal area on shielding wall
16 32 63	PG 29 with long thread and RF gasket; check nut in package	∅ 37 + 0,5 mm	∅ 55 +5 mm
100	PG 42	∅ 54 + 0,5 mm	∅ 70 +5 mm

1) ** add required length in cm (see also page 107 ff)

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