Filters for Shielded Rooms

400/690 V AC, 1000 V DC, 16…250 A

Series/Type: **B84299C/D*B/E701 / B84299C/D*B/E703**

Date: October 2024

- 2- and 4-line filters 16 to 250 A
- Multi-stage
- Stopband attenuation:
  - B84299C/D*B/E701: 150 kHz to 40 GHz
  - B84299C/D*B/E703: 30 kHz to 40 GHz
  - B84299C/D1251B/E703: 110 kHz to 40 GHz

Features

- For application with higher voltages (400/690 V AC, 1000 V DC)
- General-purpose use through design with separate lines without intercoupling
- Use of single chokes. Thus the insertion loss values are not reduced under all operating current conditions and not when operated with artificial mains networks (AMN) or other equipment with high leakage currents
- Insertion loss to EN 55017

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 surface 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 (cross section min. 10 mm^2) 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.

Scope of supply

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

Installation

No welding is needed on the shielding wall, so any subsequent installation is quite simple.

Accessories and special versions

RF-tight flexible connector fittings 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.

Technical data and measuring conditions

Rated voltage 2-line filters at 50/60 Hz	$V_{RAC\ [L–PE\ /\ L–L]}$	400 V AC
Rated voltage 4-line filters at 50/60 Hz	$V_{RAC\ [L–PE\ /\ L–L]}$	400/690 V AC
Rated voltage DC[1)]	V_{RDC}	1000 V DC
Rated frequency	f_R	50/60 Hz
Rated current	I_R	See characteristics
Power dissipation	P_D	See characteristics
Test voltage line to line	V_{test}	1800 V DC / 2 s
Test voltage line to case	V_{test}	1800 V DC / 2 s
Rated temperature	T_R	+40 °C
Overload capability (thermal)	I_{over}	75 x IR for 50 ms 10 x IR for 1 s 2 x IR for 1 min 1.4 x IR for 15 min
Leakage current (IEC 60939-1: 2010, Annex A)[2)]	I_{LK}	See characteristics
Reactive current[3)]	$I_{reactive}$	See characteristics
Climatic category (IEC 60068-1: 1992)		25/085/56
Permissible ambient temperature		–25 ... +40 °C
Degree of protection (IEC 60529: 2013)		IP 20
Max. DC resistance	R_{DC}	See characteristics

1) each line to ground (housing)
2) at voltage 400V from Phase to Ground and 50 Hz
3) capacitive current at each phase line at voltage 400/690 V and 50 Hz

Characteristics and ordering codes

I_R	Mech. version[1)]	Attenuation diagram	R_{DC}	P_D	$I_{reactive}$	I_{LK}	Dimensional drawing	Circuit diagram	Appr. weight	Ordering code
A			mΩ	W	A	mA			kg	
2-line filters										
16	C	3	28	15	6.1	6100	1	2	20	B84299C2160B703
	D						2			B84299D2160B703
32	C	1	11	22	1.7	1700	3	1	18	B84299C2320B701
	D						4			B84299D2320B701
	C	3	20	41	9.1	9100	1	2	20	B84299C2320B703
	D						2			B84299D2320B703

Filters for Shielded Rooms

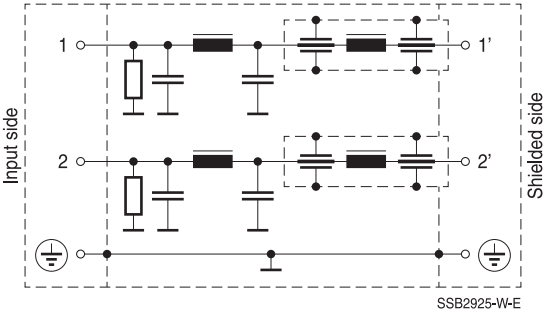
400/690 V AC, 1000 V DC, 16…250 A **B84299C/D*B/E701 / B84299C/D*B/E703**

I_R A	Mech. version[1)]	Attenuation diagram	R_{DC} mΩ	P_D W	$I_{reactive}$ A	I_{LK} mA	Dimensional drawing	Circuit diagram	Appr. weight kg	Ordering code
63	C	1	3.5	30	1.7	1700	3	1	18	B84299C1630B701
	D						4			B84299D1630B701
	C	3	8	65	9.1	9100	1	2	20	B84299C1630B703
	D						2			B84299D1630B703
100	C	1	2	40	1.7	1700	5	2	18	B84299C1101B701
	D						6			B84299D1101B701
	C	3	4	80	12.1	12100	7	3	51	B84299C1101B703
	D						8			B84299D1101B703
150	C	1	1	45	3.4	3400	5	2	20	B84299C1151B701
	D						6			B84299D1151B701
	C	3	2	90	12.1	12100	9	3	60	B84299C1151B703
	D						10			B84299D1151B703
250	C	2	0.5	60	2.3	2300	11	4	68	B84299C1251B703
	D						12			B84299D1251B703
4-line filters										
63	C	1	3.5	45	1.7	144	13	6	30	B84299C1630E701
	D						14			B84299D1630E701
	C	3	8	95	8,3	710	13	6	30	B84299C1630E703
	D						14			B84299D1630E703
100	C	1	2	60	1.7	144	15	5	32	B84299C1101E701
	D						16			B84299D1101E701
	C	3	4	120	6.1	514	17	7	72	B84299C1101E703
	D						18			B84299D1101E703
150	C	1	1	70	1.7	144	17	6	72	B84299C1151E701
	D						18			B84299D1151E701
	C	3	2	135	6.1	514	19	7	100	B84299C1151E703
	D						20			B84299D1151E703
250	C	1	0.4	75	1.8	147	21	8	52	B84299C1251E701
	D						22			B84299D1251E701
	C	2	0.5	100	2.3	194	23	9	68	B84299C1251E703
	D						24			B84299D1251E703

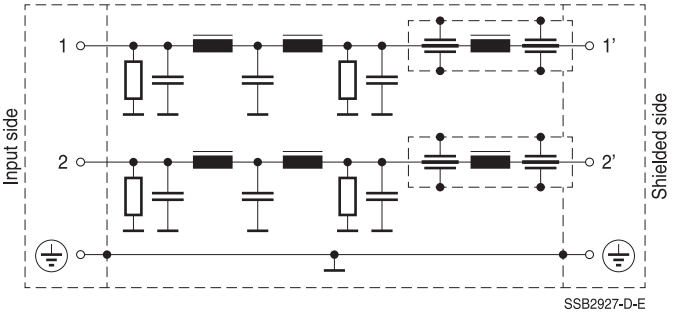
1) Connection to the shielding
C = at front side
D = at bottom side

Typical circuit diagrams

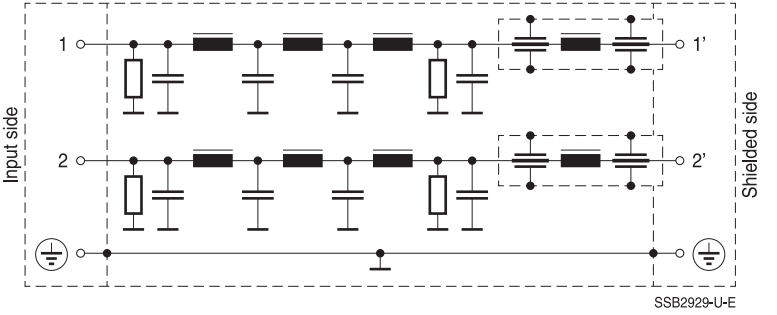
Circuit diagram 1: 2 line filters B84299+2320B701 (2 x 32 A), B84299+1630B701 (2 x 63 A)



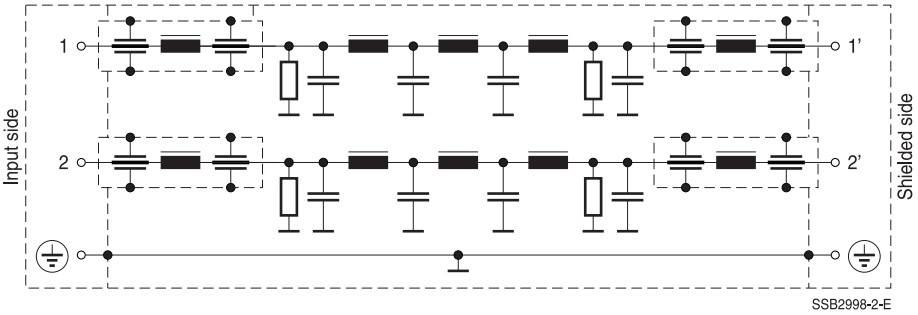
Circuit diagram 2: 2 line filters B84299+2160B703 (2 x 16 A), B84299+2320B703 (2 x 32 A), B84299+1630B703 (2 x 63 A), B84299+1101B701 (2 x 100 A), B84299+1151B701 (2 x 150 A)



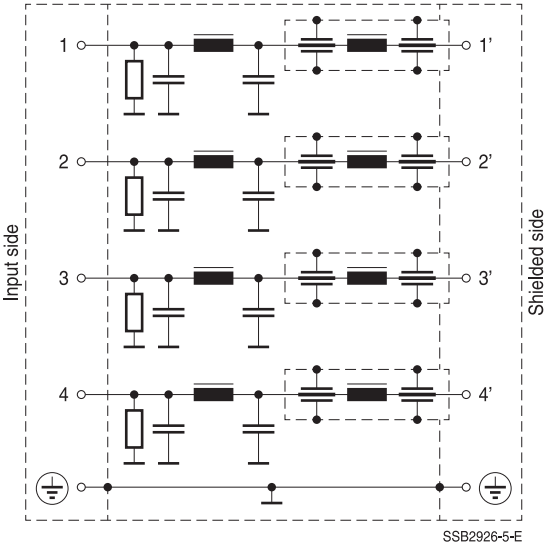
Circuit diagram 3: 2 line filters B84299+1101B703 (2 x 100 A), B84299C1151B703 (2 x 150 A)



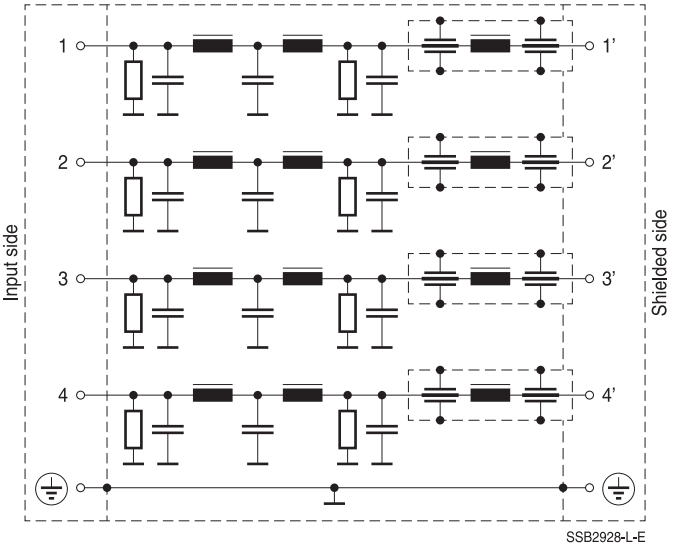
Circuit diagram 4: 2 line filters B84299+1251B703 (2 x 250 A)



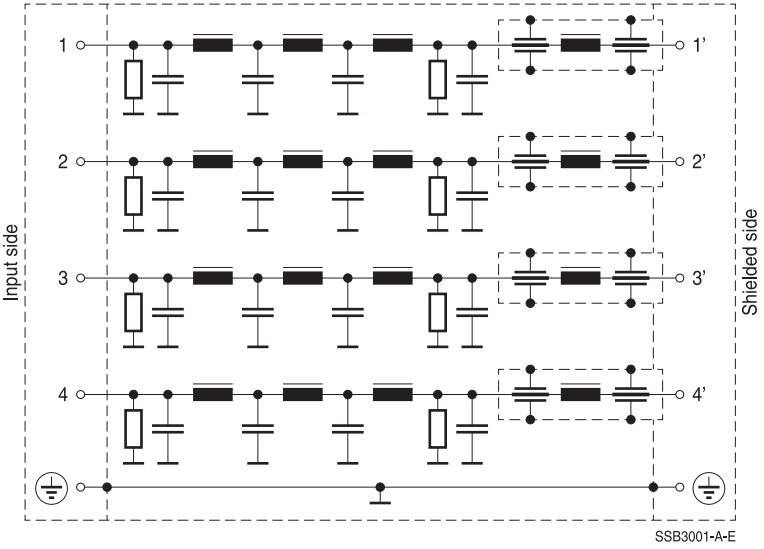
Circuit diagram 5: 4 line filters B84299+1101E701 (4 x 100 A)



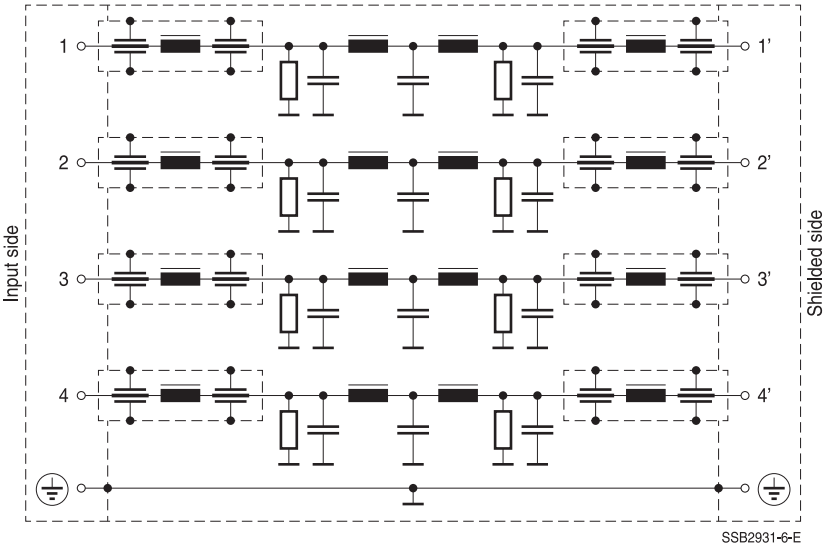
Circuit diagram 6: 4 line filters B84299+1630E701 (4 x 63 A), B84299+1630E703 (4 x 63 A), B84299+1151E701 (4 x 150 A)



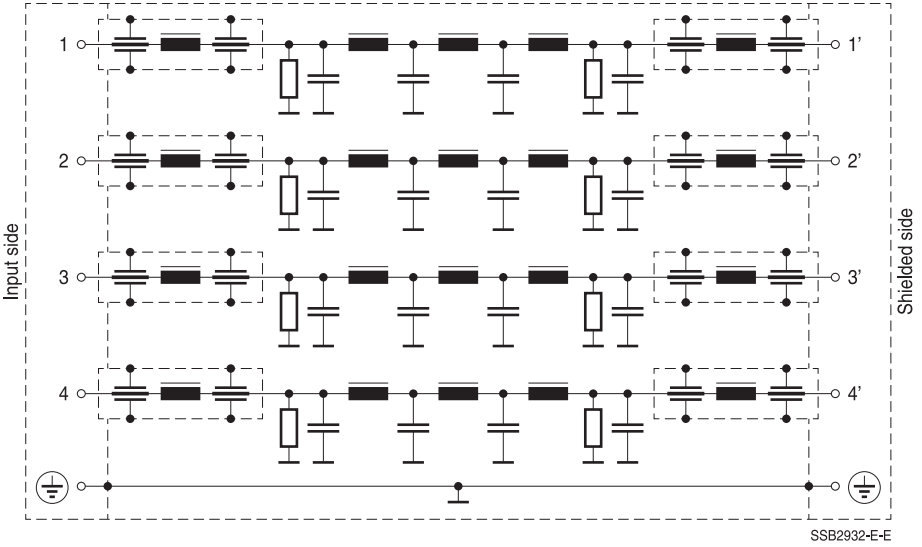
Circuit diagram 7: 4 line filters B84299+1101E703 (4 x 100 A), B84299+1151E703 (4 x 150 A)



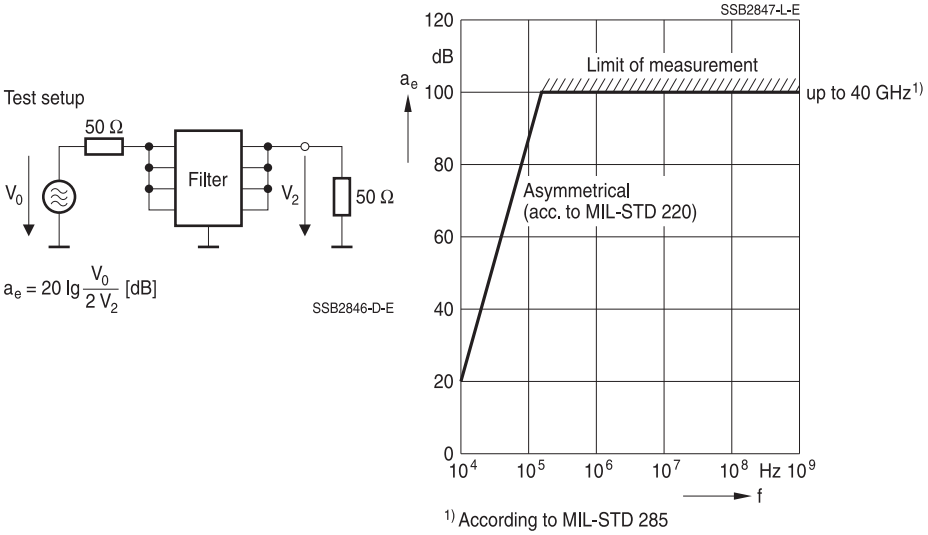
Circuit diagram 8: 4 line filters B84299+1251E701 (4 x 250 A)



Circuit diagram 9: 4 line filters B84299+1251E703 (4 x 250 A)

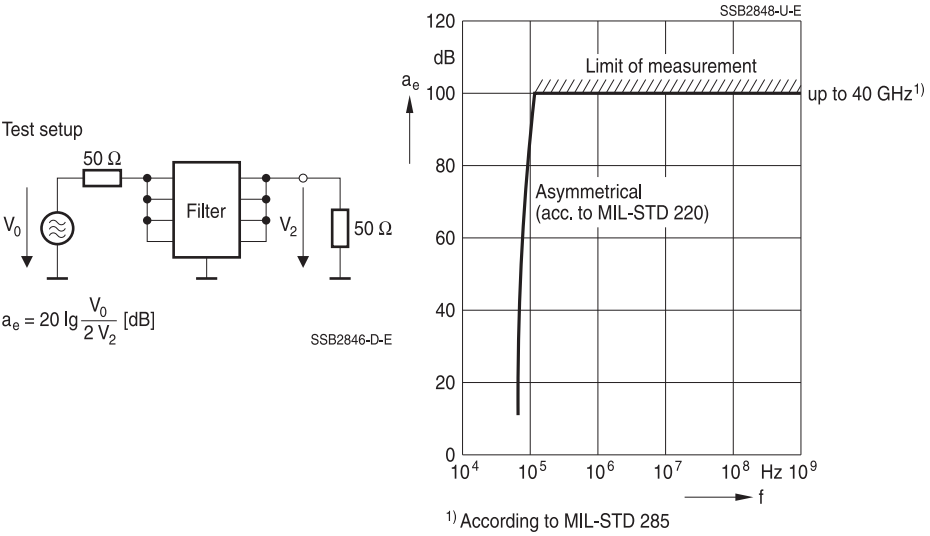


Attenuation diagram 1: Filters with 100 dB from 150 kHz up to 40 GHz
Insertion loss a_e as a function of frequency f (typical values at Z = 50 Ohm)



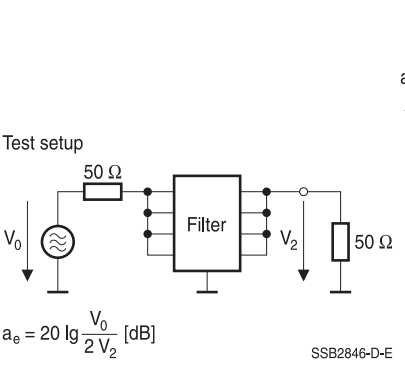
1) According to MIL-STD 285

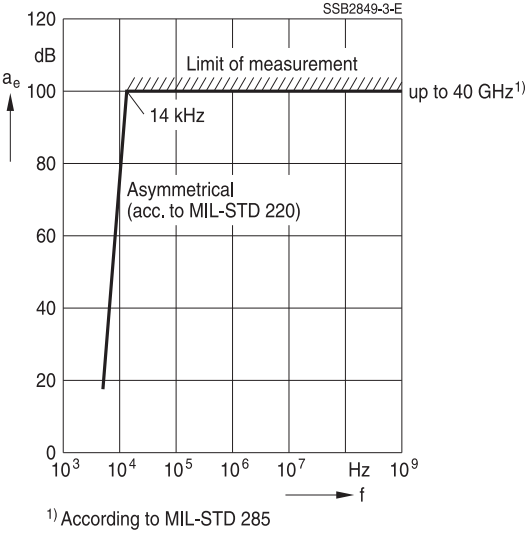
Attenuation diagram 2: Filters with 100 dB from 110 kHz up to 40 GHz
Insertion loss a_e as a function of frequency f (typical values at Z = 50 Ohm)



1) According to MIL-STD 285

Attenuation diagram 3: Filters with 100 dB from 30 kHz up to 40 GHz
Insertion loss a_e as a function of frequency f (typical values at Z = 50 Ohm)

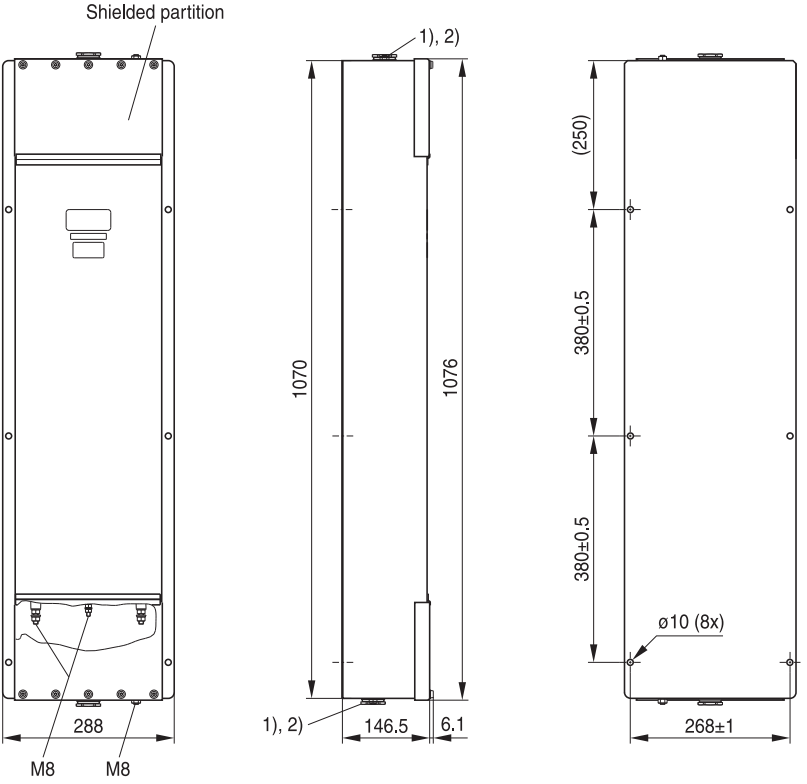




1) According to MIL-STD 285

Dimensional drawings

Drawing 1 – 2 line filters B84299C2160B703 (2 x 16 A), B84299C2320B703 (2 x 32 A), B84299C1630B703 (2 x 63 A)

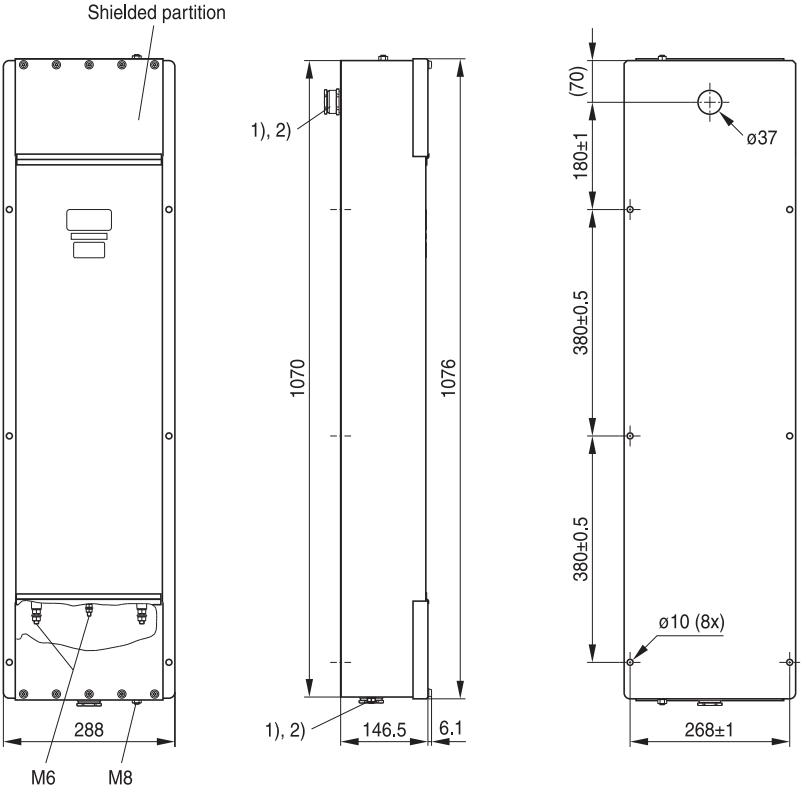


[1] Cable glands PG 29* with indented sealing ring, for cable diameters [mm]: 17 … 19 / 20 … 22 / 23 … 25 / 26 … 28
With reducer*:
[2] Cable glands PG 21* with indented sealing ring, for cable diameters [mm]: 9 … 11 / 12 … 14 / 15 … 17 / 18 … 20

* Included in delivery

SSB3004-D-E

Drawing 2 – 2 line filters B84299C2160B703 (2 x 16 A), B84299C2320B703 (2 x 32 A), B84299C1630B703 (2 x 63 A)



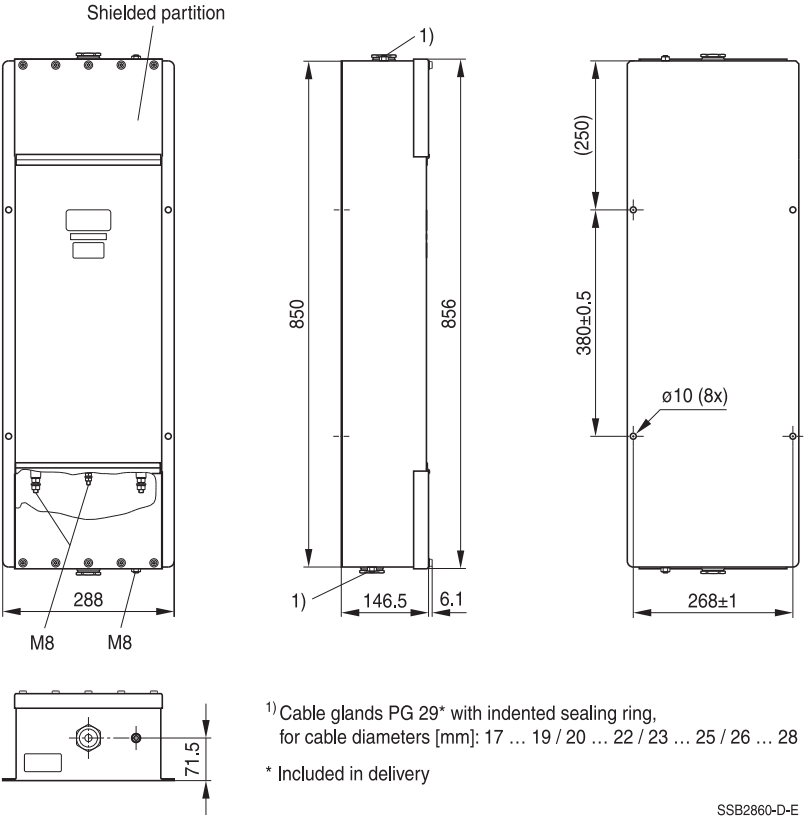
[1] Cable glands PG 29* with indented sealing ring,
for cable diameters [mm]: 17 … 19 / 20 … 22 / 23 … 25 / 26 … 28
With reducer*:

[2] Cable glands PG 21* with indented sealing ring,
for cable diameters [mm]: 9 … 11 / 12 … 14 / 15 … 17 / 18 … 20

* Included in delivery

SSB3005-E-E

Drawing 3 – 2 line filters B84299C2320B701 (2 x 32 A), B84299C1630B701 (2 x 63 A)

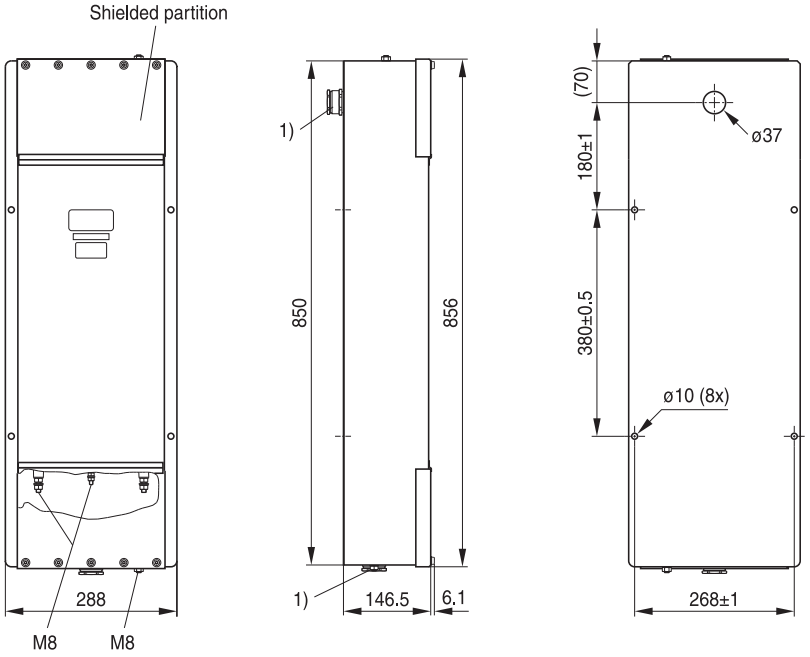


[1] Cable glands PG 29* with indented sealing ring, for cable diameters [mm]: 17 … 19 / 20 … 22 / 23 … 25 / 26 … 28

* Included in delivery

SSB2860-D-E

Drawing 4 – 2 line filters B84299D2320B701 (2 x 32 A), B84299D1630B701 (2 x 63 A)

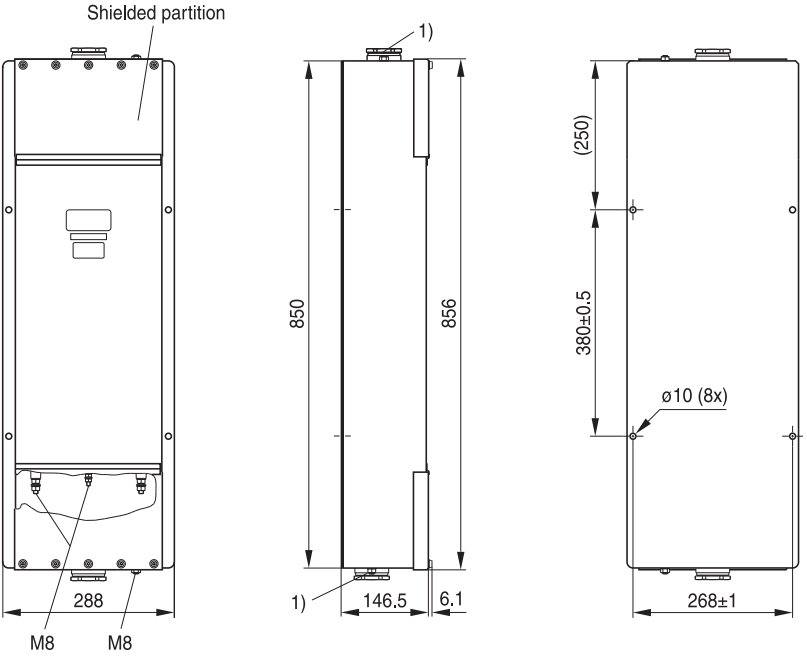


[1] Cable glands PG 29* with indented sealing ring,
for cable diameters [mm]: 17 … 19 / 20 … 22 / 23 … 25 / 26 … 28

* Included in delivery

SSB2861-L-E

Drawing 5 – 2 line filters B84299C1101B701 (2 x 100 A), B84299C1151B701 (2 x 150 A)

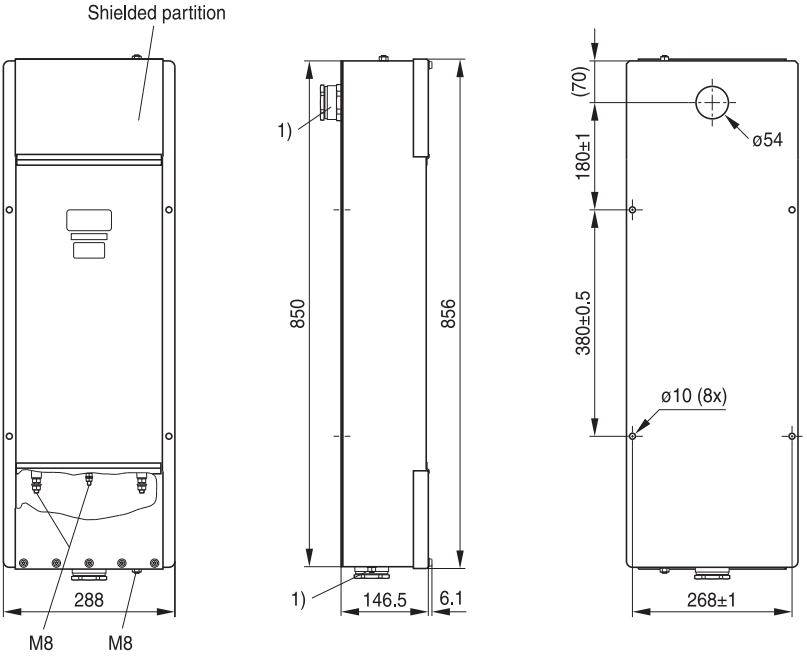


1) Cable glands PG 42* with indented sealing ring, for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB3006-F-E

Drawing 6 – 2 line filters B84299D1101B701 (2 x 100 A), B84299D1151B701 (2 x 150 A)

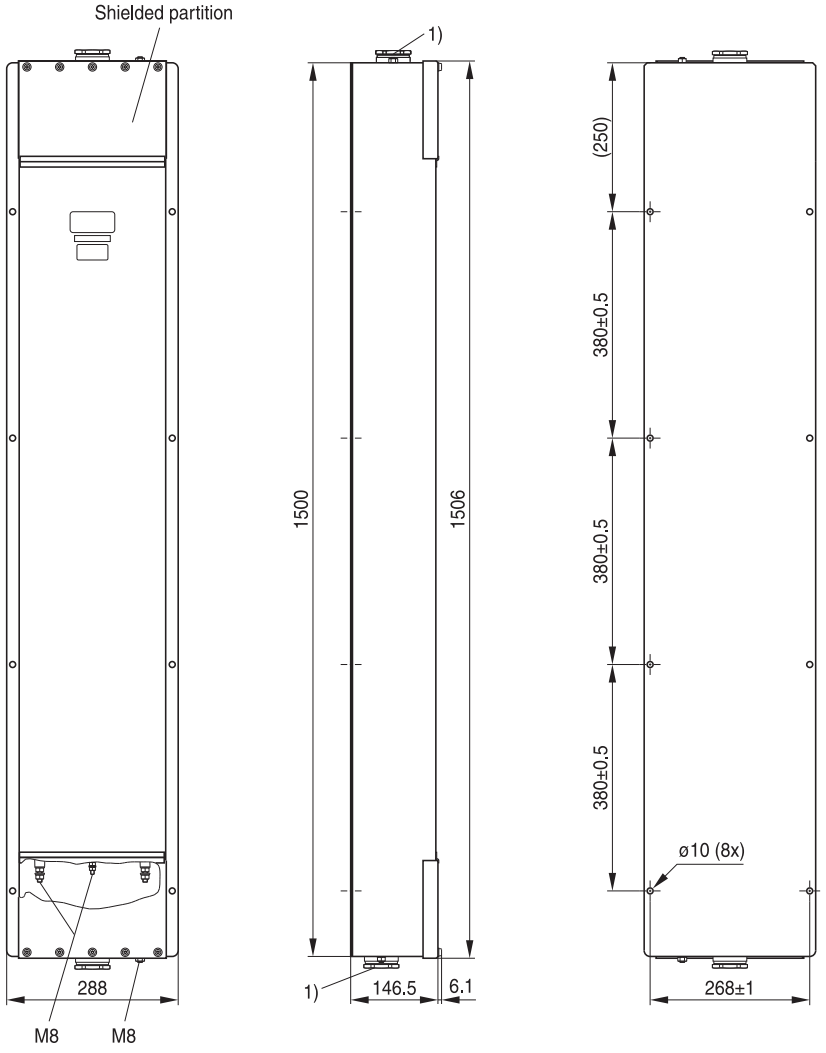


1) Cable glands PG 42* with indented sealing ring,
for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB3007-G-E

Drawing 7 – 2 line filters B84299C1101B703 (2 x 100 A)

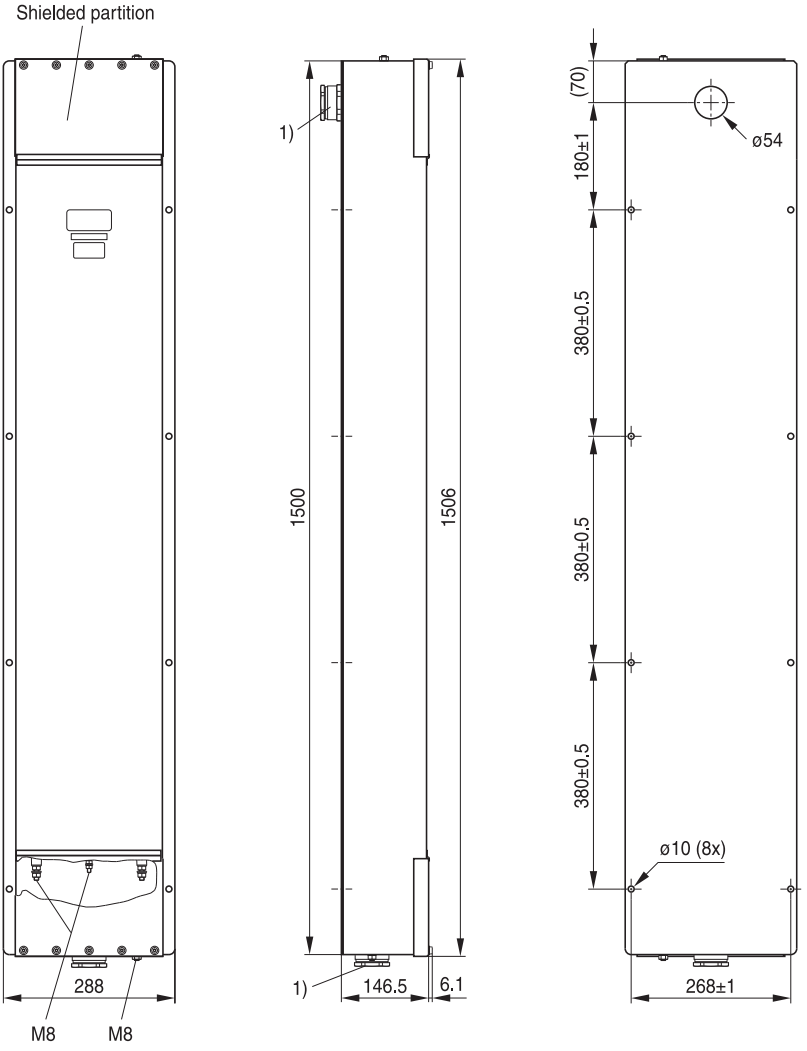


1) Cable glands PG 42* with indented sealing ring, for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB2864-B-E

Drawing 8 – 2 line filters B84299D1101B703 (2 x 100 A)

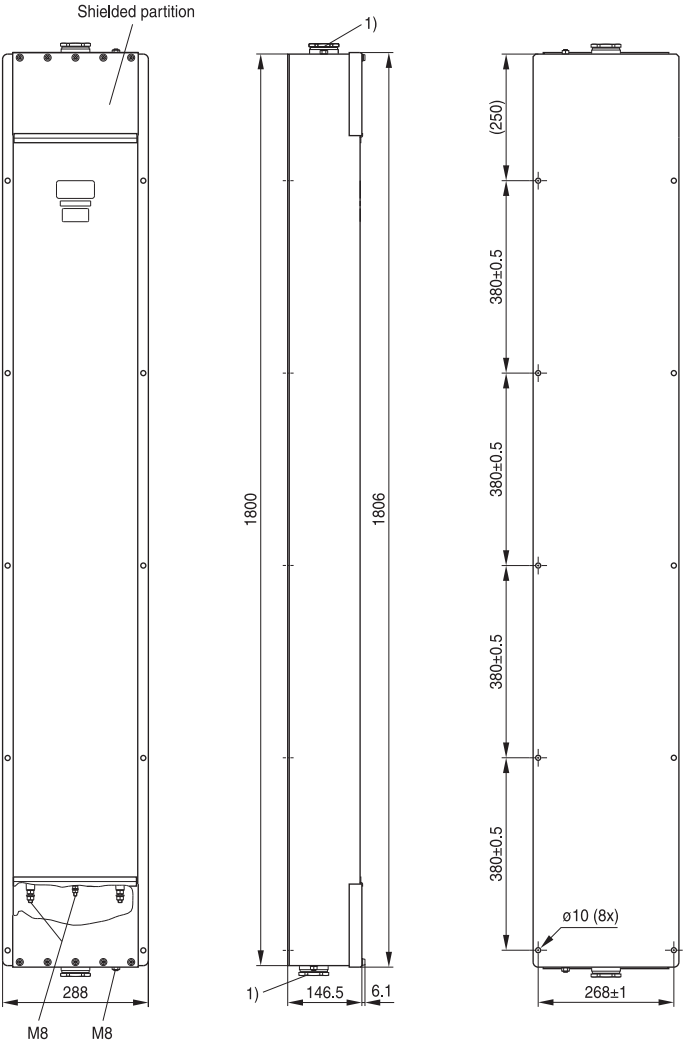


[1] Cable glands PG 42* with indented sealing ring,
for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB2865-J-E

Drawing 9 – 2 line filters B84299C1151B703 (2 x 150 A)

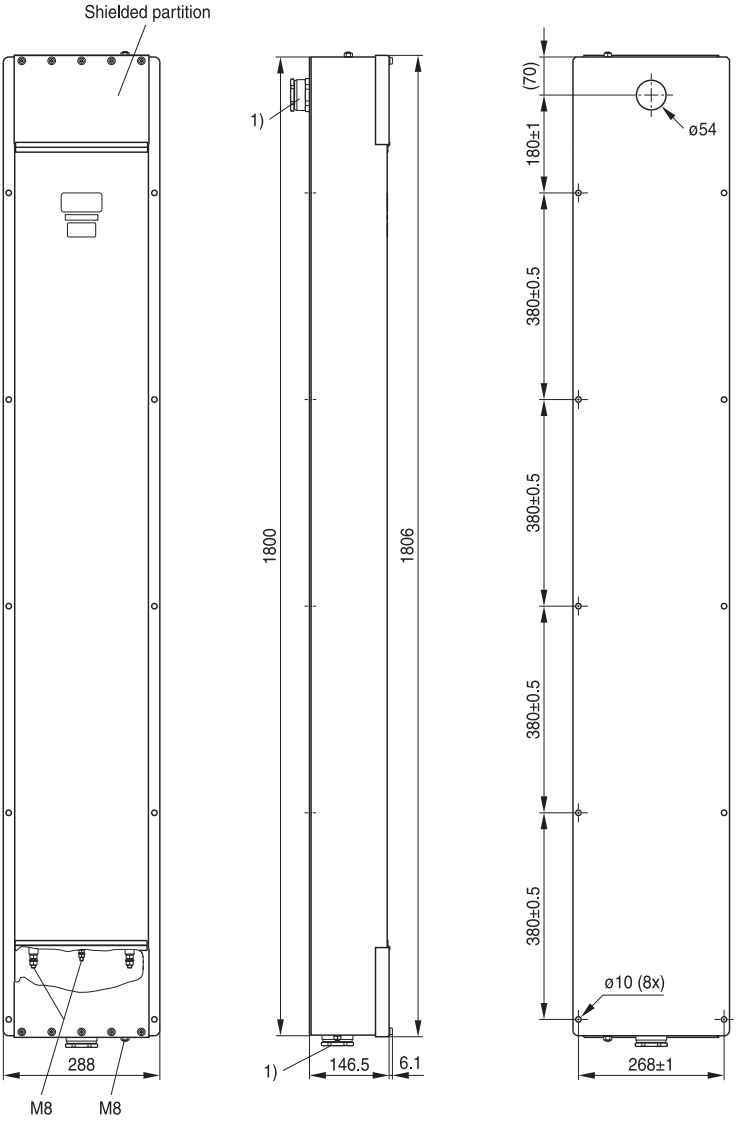


1) Cable glands PG 42* with indented sealing ring, for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB3008-H-E

Drawing 10 – 2 line filters B84299D1151B703 (2 x 150 A)

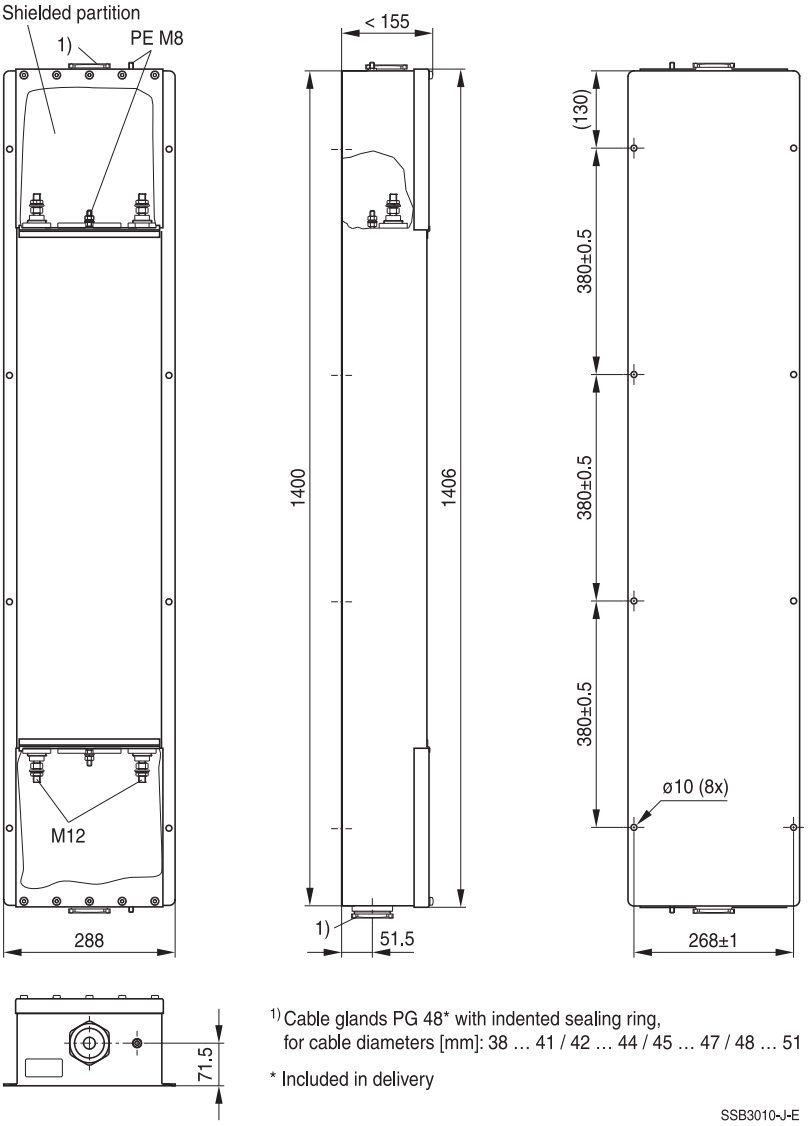


1) Cable glands PG 42* with indented sealing ring,
for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB3009-I-E

Drawing 11 – 2 line filters B84299C1251B703 (2 x 250 A)

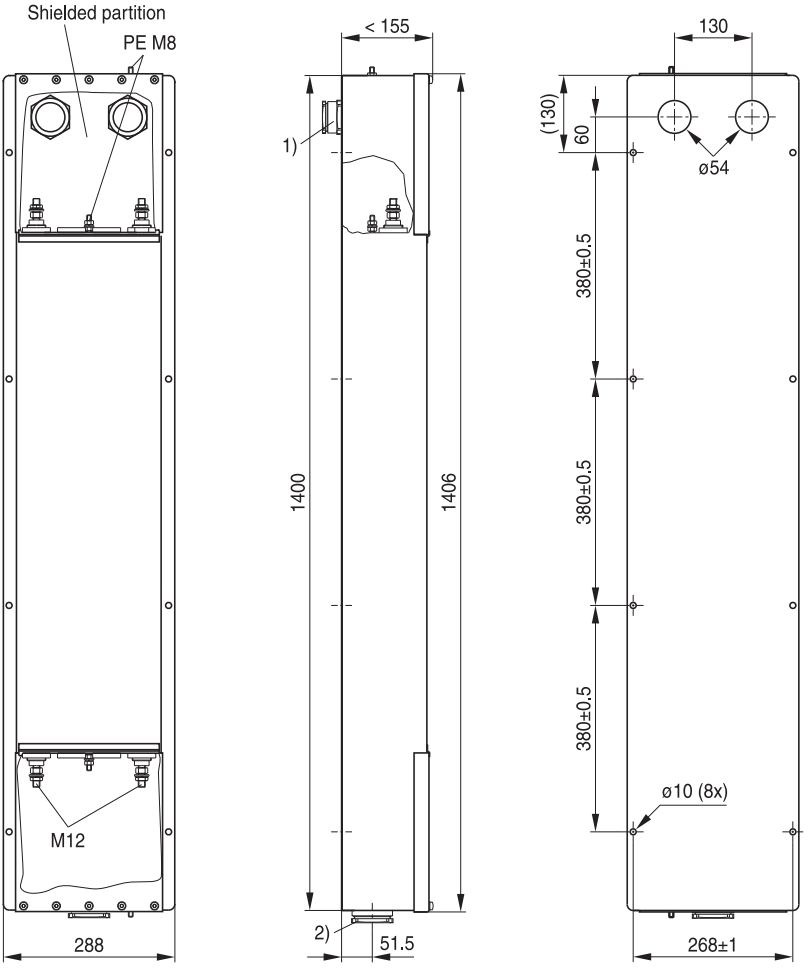


1) Cable glands PG 48* with indented sealing ring, for cable diameters [mm]: 38 … 41 / 42 … 44 / 45 … 47 / 48 … 51

* Included in delivery

SSB3010-J-E

Drawing 12 – 2 line filters B84299D1251B703 (2 x 250 A)



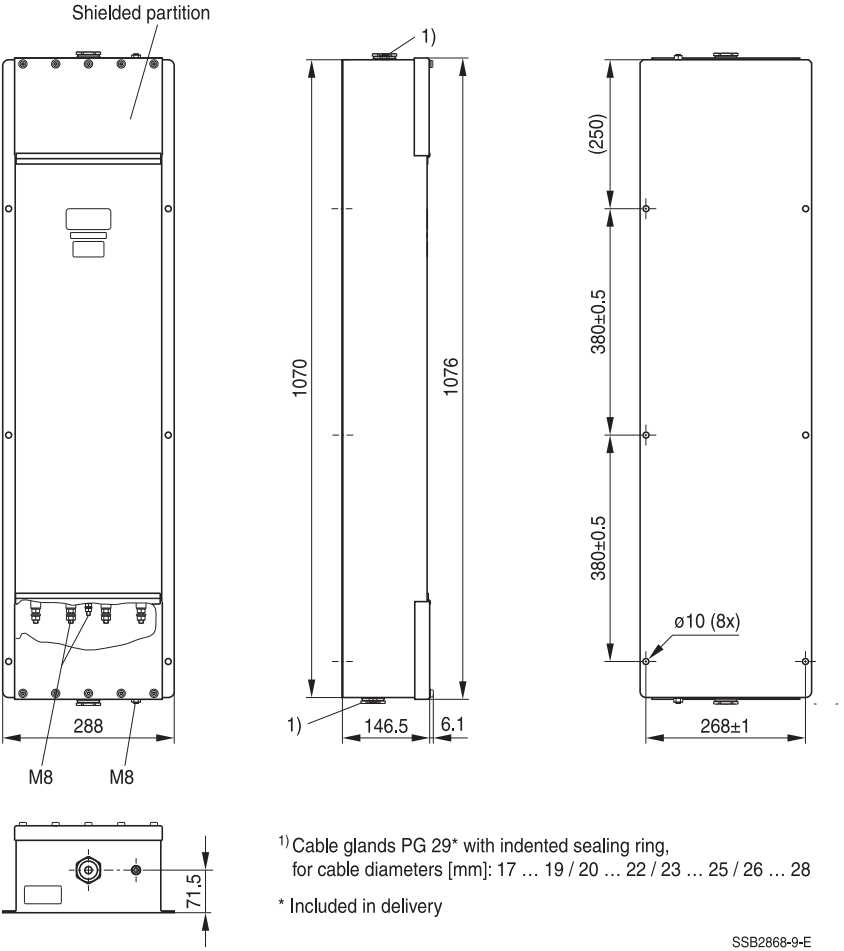
1) Cable glands PG 42* with indented sealing ring,
for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

2) Cable glands PG 48* with indented sealing ring,
for cable diameters [mm]: 38 … 41 / 42 … 44 / 45 … 47 / 48 … 51

* Included in delivery

SSB3011-K-E

Drawing 13 – 4 line filters B84299C1630E701 (4 x 63 A), B84299C1630E703 (4 x 63 A)

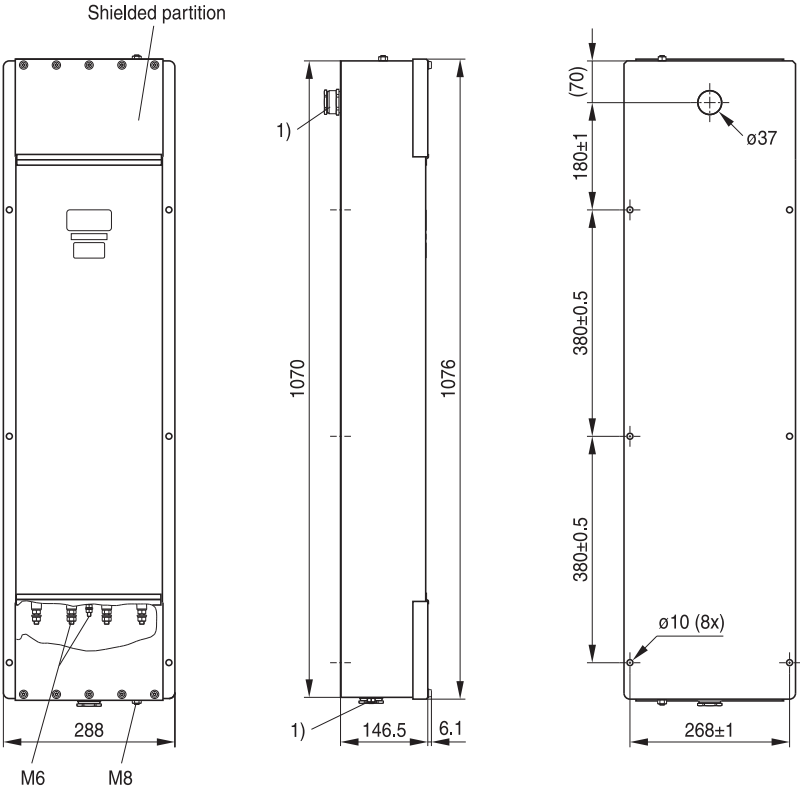


1) Cable glands PG 29* with indented sealing ring, for cable diameters [mm]: 17 … 19 / 20 … 22 / 23 … 25 / 26 … 28

* Included in delivery

SSB2868-9-E

Drawing 14 – 4 line filters B84299D1630E701 (4 x 63 A), B84299D1630E703 (4 x 63 A)

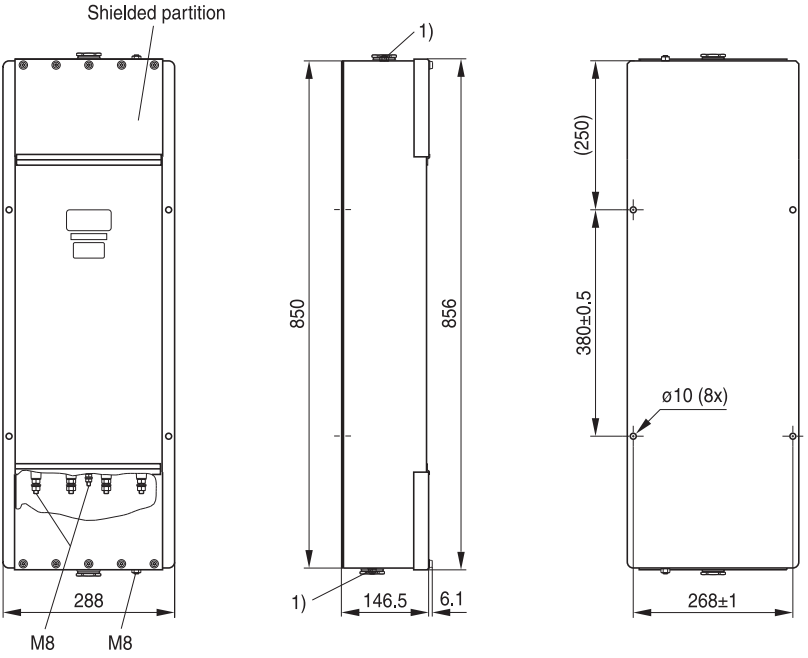


[1] Cable glands PG 29* with indented sealing ring,
for cable diameters [mm]: 17 … 19 / 20 … 22 / 23 … 25 / 26 … 28

* Included in delivery

SSB2869-H-E

Drawing 15 – 4 line filters B84299C1101E701 (4 x 100 A)

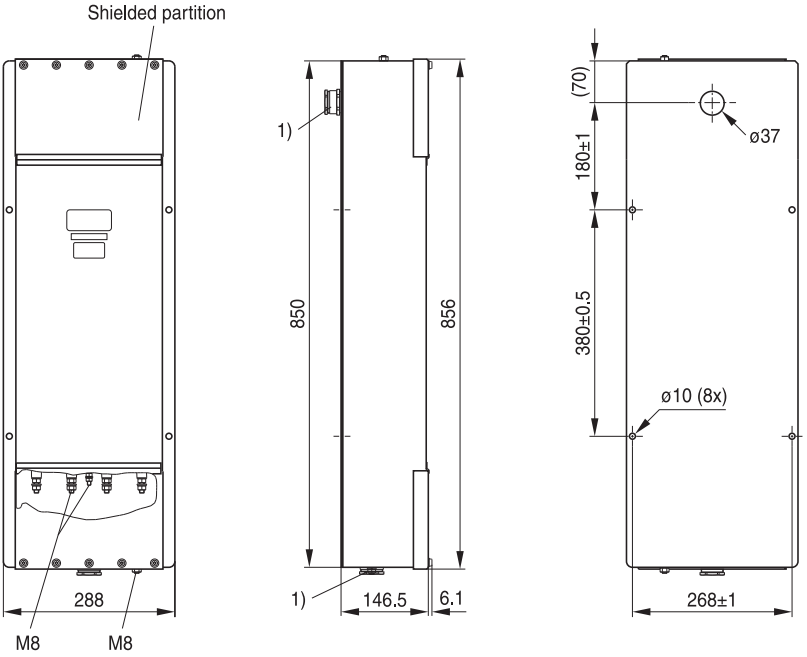


1) Cable glands PG 29* with indented sealing ring, for cable diameters [mm]: 17 … 19 / 20 … 22 / 23 … 25 / 26 … 28

* Included in delivery

SSB3012-L-E

Drawing 16 – 4 line filters B84299D1101E701 (4 x 100 A)

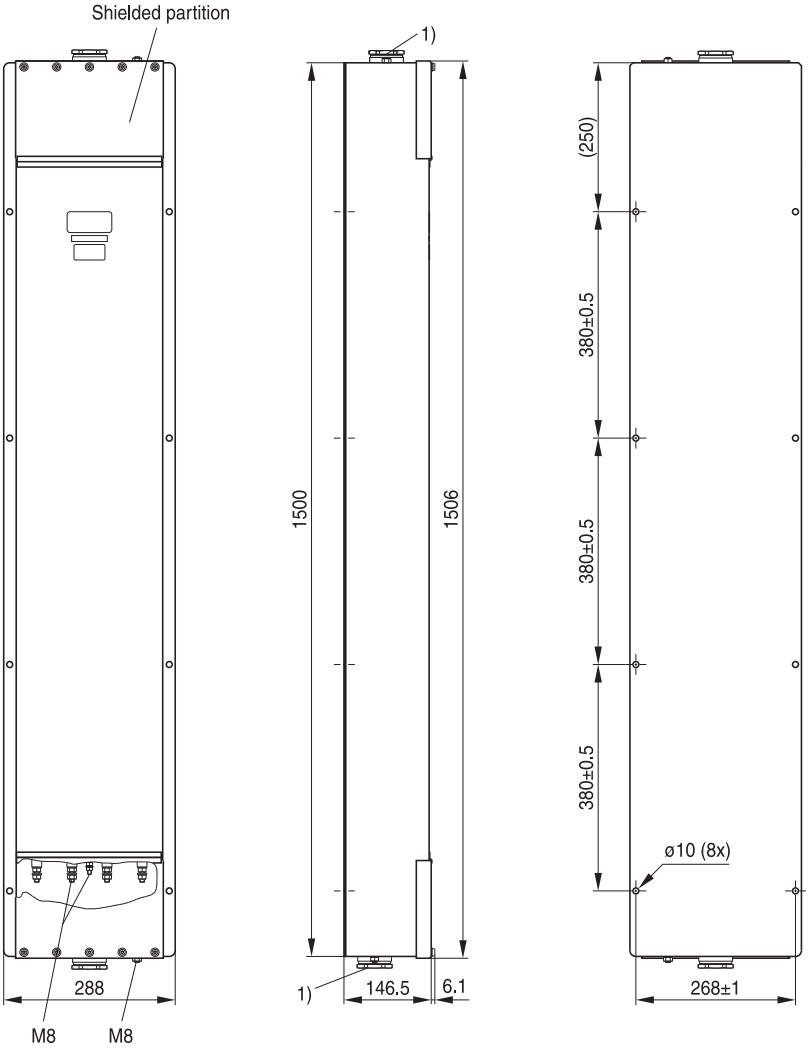


1) Cable glands PG 29* with indented sealing ring,
for cable diameters [mm]: 17 … 19 / 20 … 22 / 23 … 25 / 26 … 28

* Included in delivery

SSB3013-M-E

Drawing 17 – 4 line filters B84299C1101E703 (4 x 100 A), B84299C1151E701 (4 x 150 A)

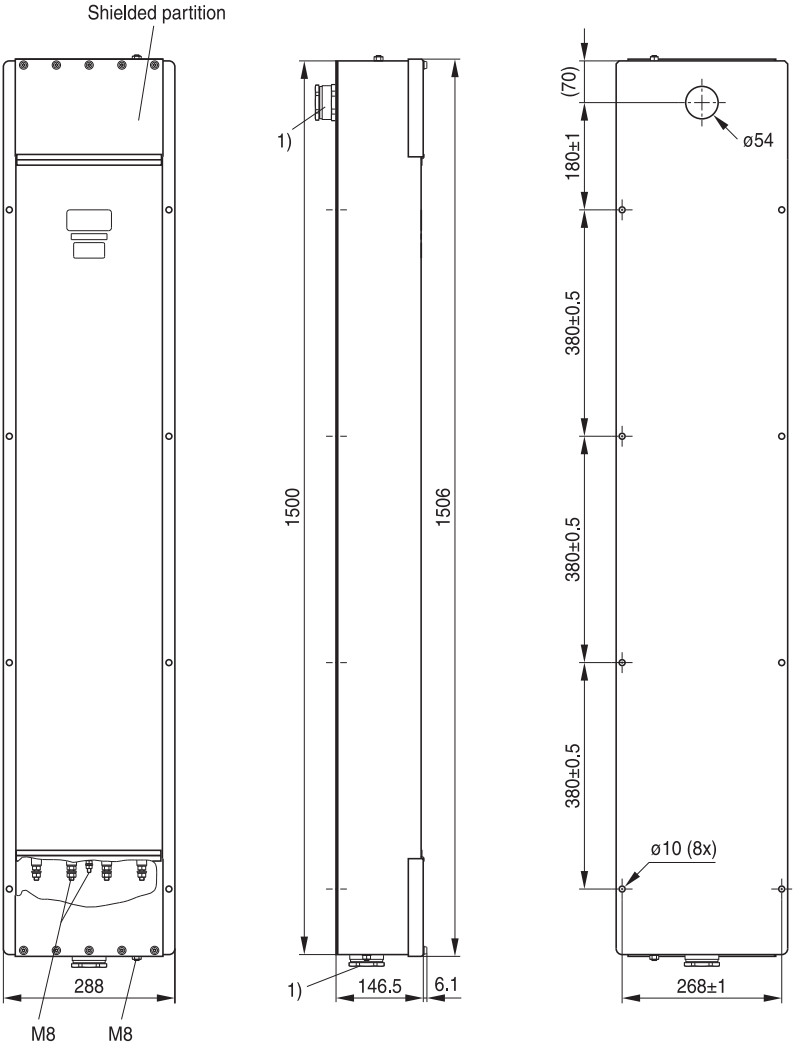


1) Cable glands PG 42* with indented sealing ring, for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB2870-K-E

Drawing 18 – 4 line filters B84299D1101E703 (4 x 100 A), B84299D1151E701 (4 x 150 A)

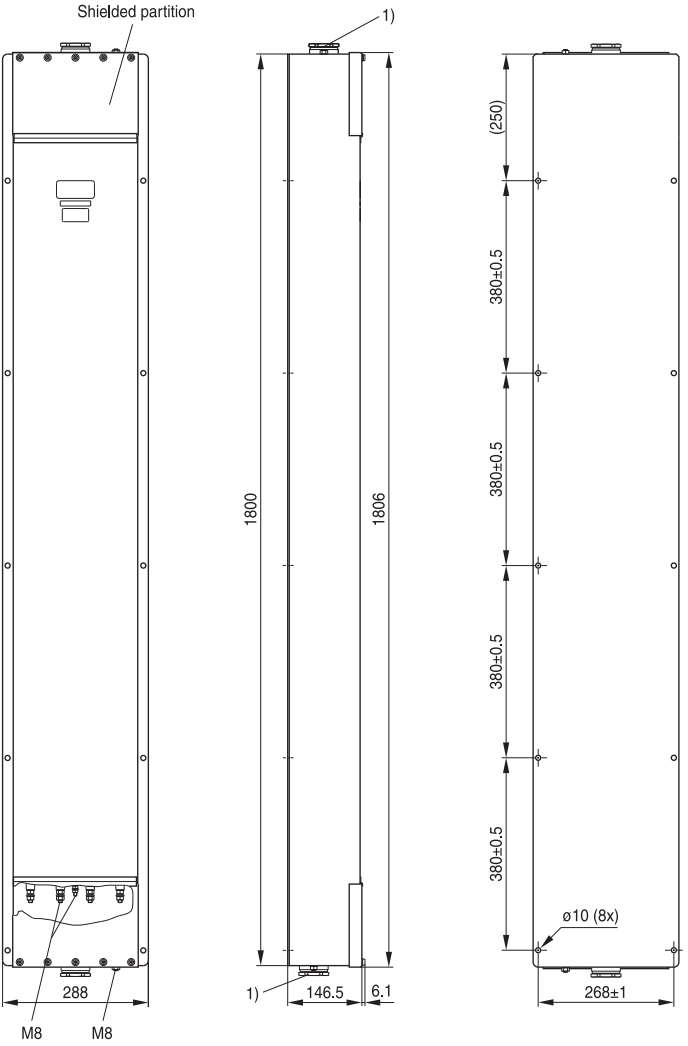


[1] Cable glands PG 42* with indented sealing ring,
for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB2871-T-E

Drawing 19 – 4 line filters B84299C1151E703 (4 x 150 A)

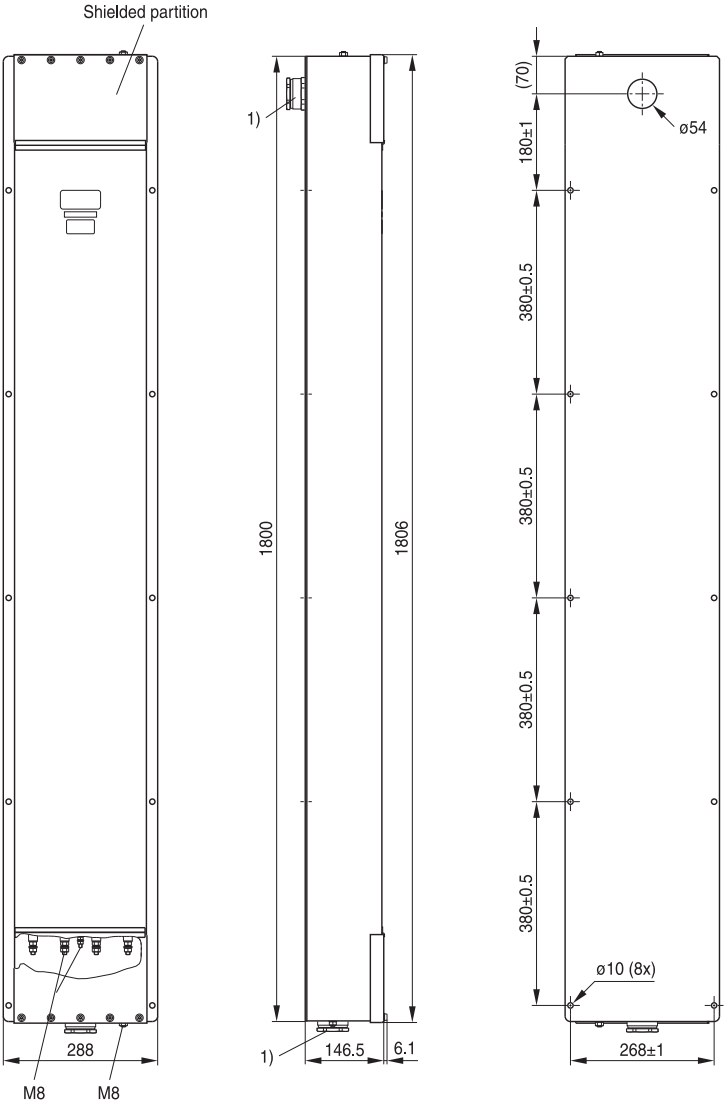


1) Cable glands PG 42* with indented sealing ring, for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB2874-I-E

Drawing 20 – 4 line filters B84299D1151E703 (4 x 150 A)

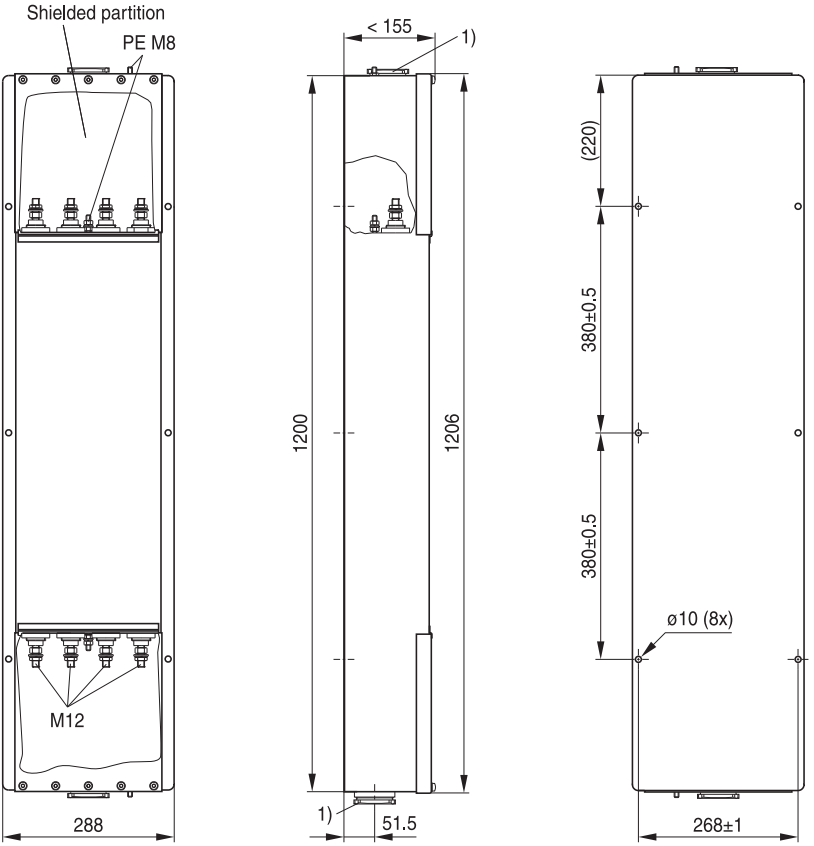


[1] Cable glands PG 42* with indented sealing ring,
for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

* Included in delivery

SSB2875-R-E

Drawing 21 – 4 line filters B84299C1251E701 (4 x 250 A)

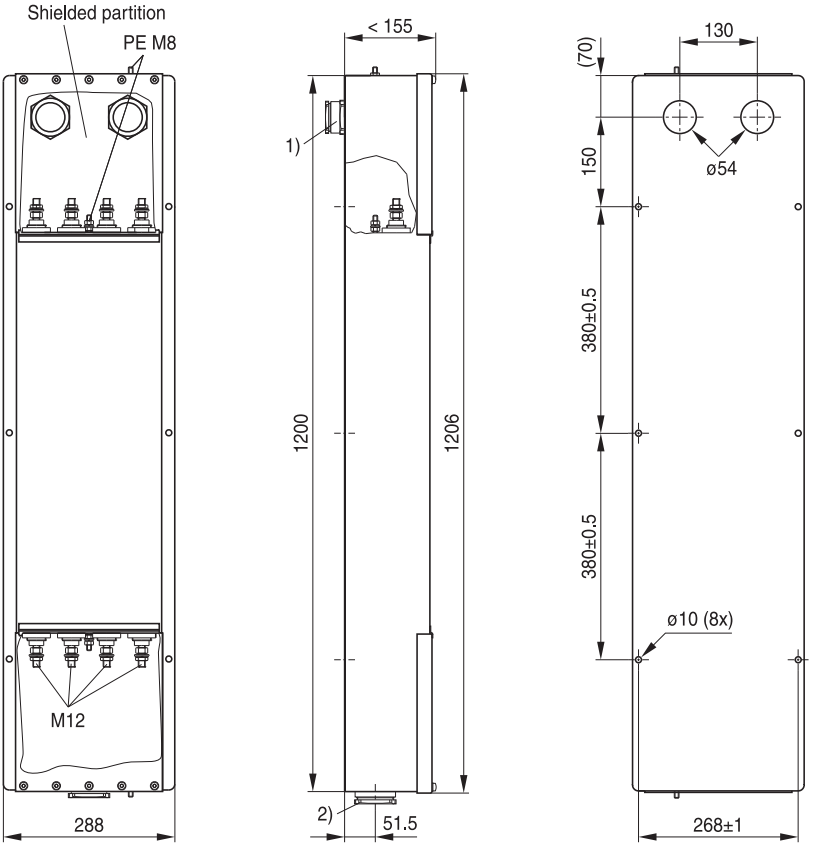


1) Cable glands PG 48* with indented sealing ring, for cable diameters [mm]: 38 … 41 / 42 … 44 / 45 … 47 / 48 … 51

* Included in delivery

SSB2876-Z-E

Drawing 22 – 4 line filters B84299D1251E701 (4 x 250 A)



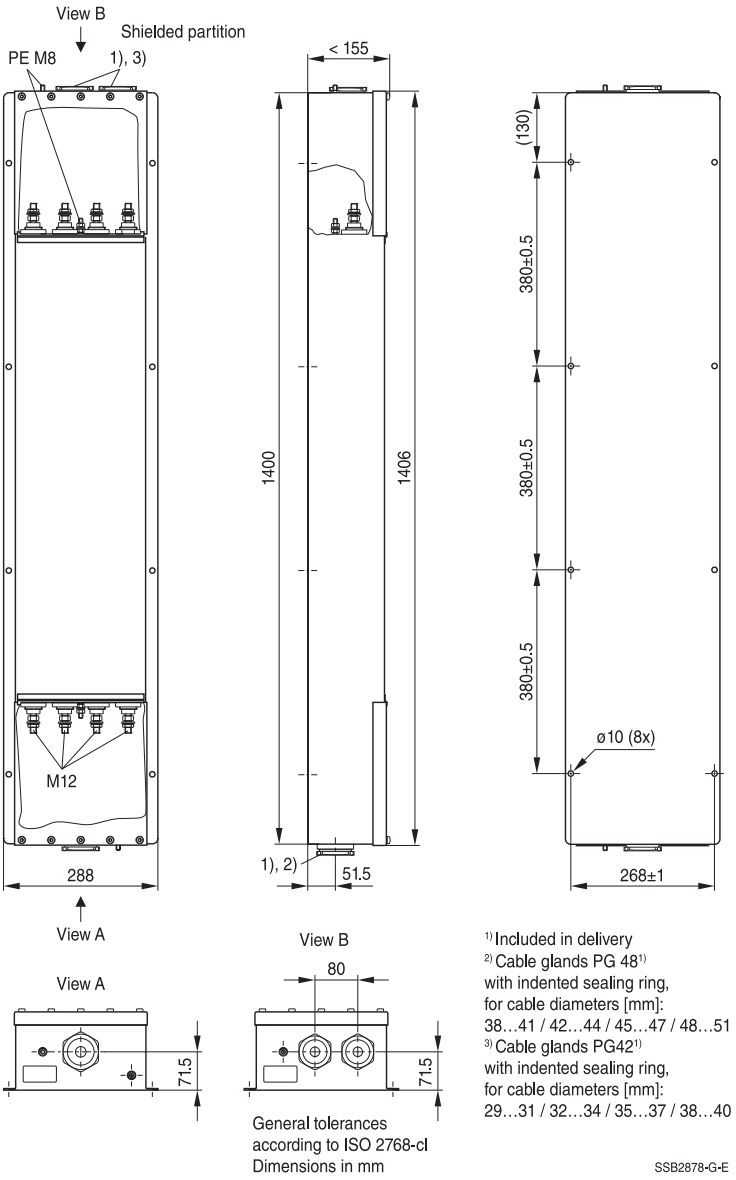
[1] Cable glands PG 42* with indented sealing ring,
for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

[2] Cable glands PG 48* with indented sealing ring,
for cable diameters [mm]: 38 … 41 / 42 … 44 / 45 … 47 / 48 … 51

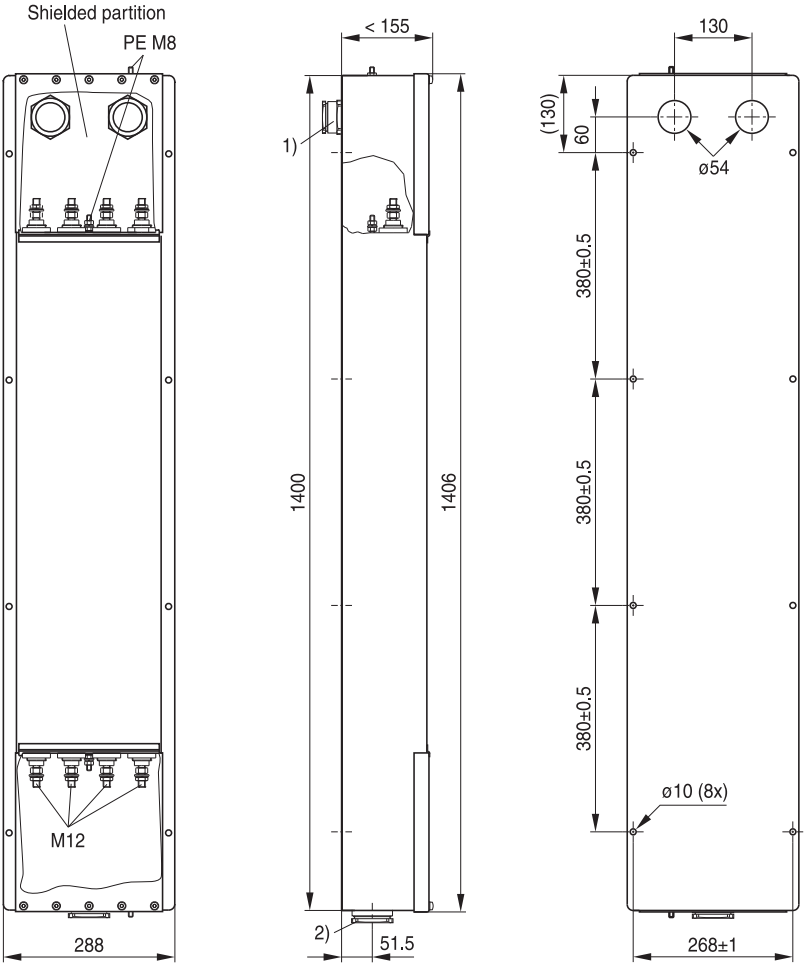
* Included in delivery

SSB2877-8-E

Drawing 23 – 4 line filters B84299C1251E703 (4 x 250 A)



Drawing 24 – 4 line filters B84299D1251E703 (4 x 250 A)



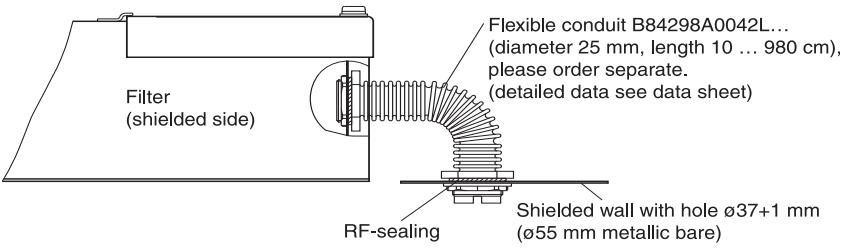
1) Cable glands PG 42* with indented sealing ring,
for cable diameters [mm]: 29 … 31 / 32 … 34 / 35 … 37 / 38 … 40

2) Cable glands PG 48* with indented sealing ring,
for cable diameters [mm]: 38 … 41 / 42 … 44 / 45 … 47 / 48 … 51

* Included in delivery

SSB2879-P-E

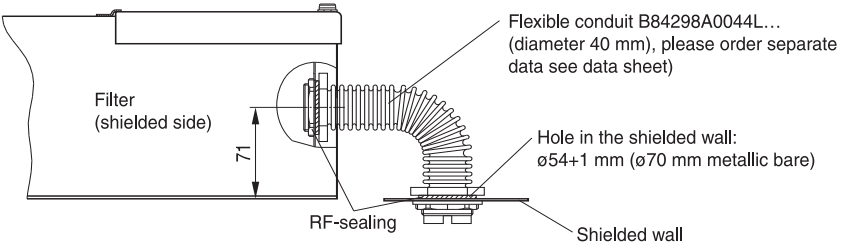
RF-tíght connection of types B84299C… with connection hole 37 mm



Note: The bending radius of the flexible conduit depends on the used type of cable

SSB2917-6-E

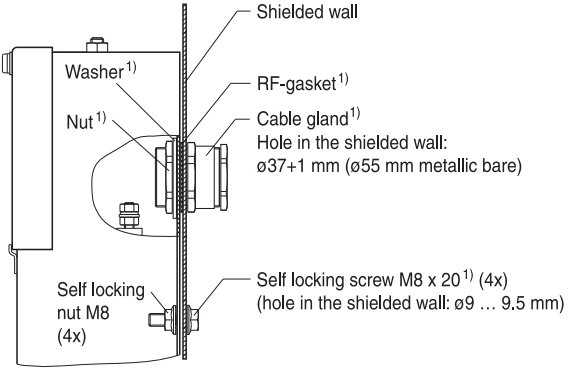
RF-tíght connection of types B84299C… with connection hole 54 mm



Note: The bending radius of the flexible conduit depends on the used type of cable

SSB2918-E-E

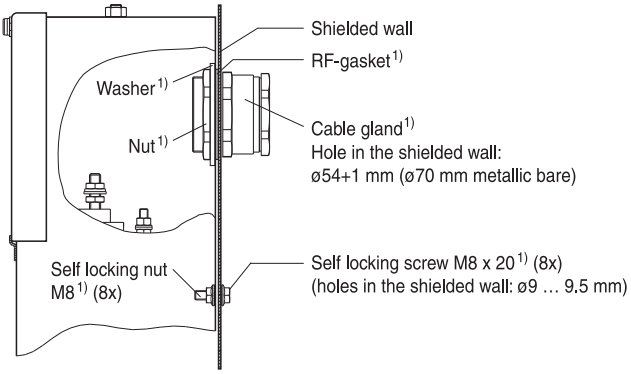
RF-tíght connection of types B84299D… with connection hole 37 mm



1) Included in delivery

SSB2919-M-E

RF-tíght connection of types B84299D… with connection hole 54 mm



1) Included in delivery

SSB2920-Q-E

Cautions and warnings

- Please note further advice in our website www.tdk-electronics.tdk.com/pemc_filters_gti
- 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: The products contain components that store an electric charge. Dangerous voltages can continue to exist at the product 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 product is installed and secured against loosening by defined tightening torque. Remove them at last, when uninstalling. Depending on the magnitude of the leakage currents, the particular specifications for making the protective-earth connection must be observed.
- Impermissible overloading of the product, 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 product housing).
- The products must be protected in the application against impermissible exceeding of the rated currents by overcurrent protective devices.
- For leakage currents >10 mA, a fixed connection of the protective earth conductor to the public power grid is required. This means that connection via plug connectors is not permitted. The protective conductor must have a mini-mum cross-section of 10 mm^2 Cu or 16 mm^2 Al over its entire length. Alternatively, two separate protective conductors with the minimum cross-section specified in each case can also be connected.
- For leakage currents 3.5 mA < I_{LK} [a] ≤ 10 mA, the following solutions are possible:
  - Stationary device with fixed connection
  - Stationary device with type B plug-in connection (industrial plug-in connection according to IEC 60309) and cross-section ≥ 2.5 mm^2
  - Stationary device with type A plug-in connection (non-industrial plug-in device) and additional second protective earth connection
  - Movable equipment with type A plug-in connection and additional second protective earth connection in premises with restricted access
- The products must be protected in the application against impermissible exceeding of the specification parameter.
- The converter output frequency must be within the specified range to avoid resonances and uncontrolled warming of the output chokes and output filters.
- The components can become very hot during operation, there is the risk of burns if touched. The product can remain hot for some time after the power is switched off!
- The products are only to be attached to the fixings or mounting holes provided for this purpose in accordance with the data sheet. It is not permitted for the product specified in the data sheet to assume a mechanical function in the final application, in particular any type of tension or pressure on the product must be prevented.

a) I_{LK} = Leakage current

Display of ordering codes for TDK Electronics products

The ordering code for one and the same product can be represented differently in data sheets, data books, other publications, on the company website, or in order-related documents such as shipping notes, order confirmations and product labels. The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products.
Detailed information can be found on the Internet under www.tdk-electronics.tdk.com/orderingcodes.

Symbols and terms

Symbol	English	German
α	Insertion loss	Einfügungsdämpfung
C_R	Rated capacitance	Bemessungskapazität
C_X	Capacitance X capacitor	Kapazität X-Kondensator
C_Y	Capacitance Y capacitor	Kapazität Y-Kondensator
ΔV	Voltage drop (input to output)	Spannungsabfall (Eingang zu Ausgang)
dv/dt	Rate of voltage rise	Spannungsanstiegsgeschwindigkeit
f	Frequency	Frequenz
f_M	Converter output frequency	Motorfrequenz
f_P	Pulse frequency	Pulsfrequenz
f_R	Rated frequency	Bemessungsfrequenz
f_{res}	Resonant frequency	Resonanzfrequenz
I_C	Current through capacitor	Strom durch Kondensator
I_{LK}	Filter leakage current	Filter-Ableitstrom
I_{max}	Maximum current	Maximalstrom
I_N	Nominal current	Nennstrom
I_{op}	Operating current (design current)	Betriebsstrom
I_{pk}	Rated peak withstand current	Bemessungsstoßstromfestigkeit
I_q	Capacitive reactive current	Kapazitiver Blindstrom
I_R	Rated current	Bemessungsstrom
I_S	Interference current	Störstrom
L	Inductance	Induktivität
L_R	Rated inductance	Bemessungsinduktivität
L_{stray}	Stray inductance	Streuinduktivität
P_L	Power loss	Verlustleistung
R	Resistance	Widerstand
R_{is}	Insulation resistance	Isolationswiderstand
R_{typ}	DC resistance, typical value	Gleichstromwiderstand typisch
T_A	Ambient temperature	Umgebungstemperatur
T_{max}	Upper category temperature	Obere Kategorietemperatur
T_{min}	Lower category temperature	Untere Kategorietemperatur
T_R	Rated temperature	Bemessungstemperatur
u_k	Referred voltage drop in %	Bezogener Spannungsabfall in %
V_{eff}	RMS voltage	Effektivspannung
V_K	Voltage drop	Spannungsabfall
V_{LE}	Voltage line to earth; voltage line to ground	Spannung Phase zu Erdpotential
V_N	Nominal voltage	Nennspannung
V_R	Rated voltage	Bemessungsspannung
V_{peak}	Peak voltage	Spitzenspannung
V_{test}	Test voltage	Prüfspannung

Symbols and terms

Symbol	English	German
V_X	Voltage over X capacitor	Spannung über X-Kondensator
V_Y	Voltage over Y capacitor	Spannung über Y-Kondensator
X_L	Inductive reactance	Induktiver Blindwiderstand
Z	Impedance	Scheinwiderstand
|Z|	Impedance, absolute value	Scheinwiderstand (Betragswert)

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule we are either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether a product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

3. **The warnings, cautions and product-specific notes must be observed**.

4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.tdk-electronics.tdk.com/material). Should you have any more detailed questions, please contact our sales offices.

5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.
   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

6. Unless otherwise agreed in individual contracts, **all orders are subject to our General Terms and Conditions of Supply**.

7. **Our manufacturing sites serving the automotive business apply the IATF 16949 standard**. The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements ("CSR") TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System**. For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.
8. The trade names EPCOS, CarXield, CeraCharge, CeraDiode, CeraLink, CeraPad, CeraPlas, CSMP, CTVS, DeltaCap, DigiSiMic, FilterCap, FormFit, InsuGate, LeaXield, MediPlas, MiniBlue, MiniCell, MKD, MKK, ModCap, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, PhiCap, PiezoBrush, PlasmaBrush, PowerHap, PQSine, PQvar, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SiMic, SIMID, SineFormer, SIOV, SurfIND, ThermoFuse, WindCap, XieldCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.tdk-electronics.tdk.com/trademarks.

Release 2024-02