



## Data sheet

### 3-line LCL-filters

### for converters and power electronics

305/530 V, 50/60 Hz, 8 ... 1140 A, 50 °C

**Ordering code:**

**B84143G/Q\*R/S176**

**Date:**

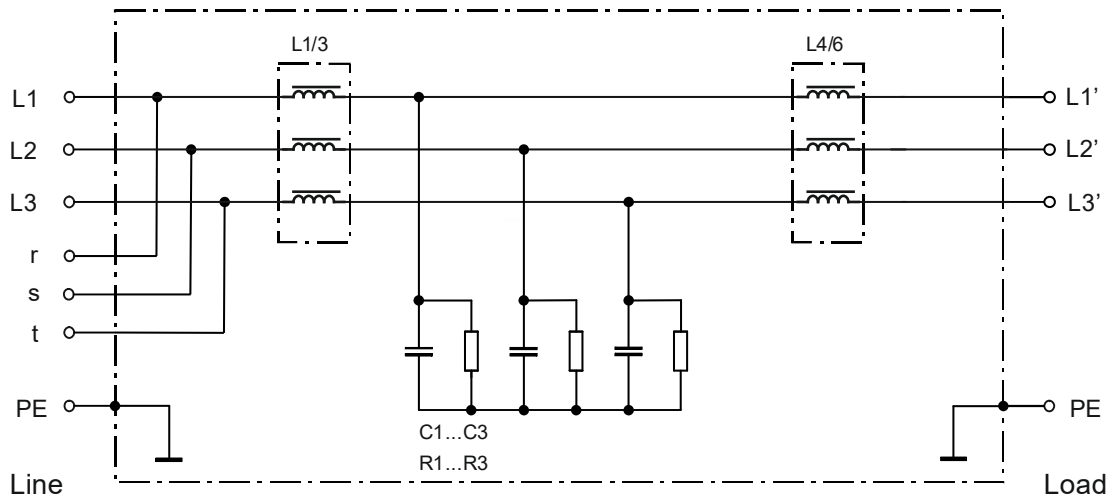
**2025-08-21**

Version:

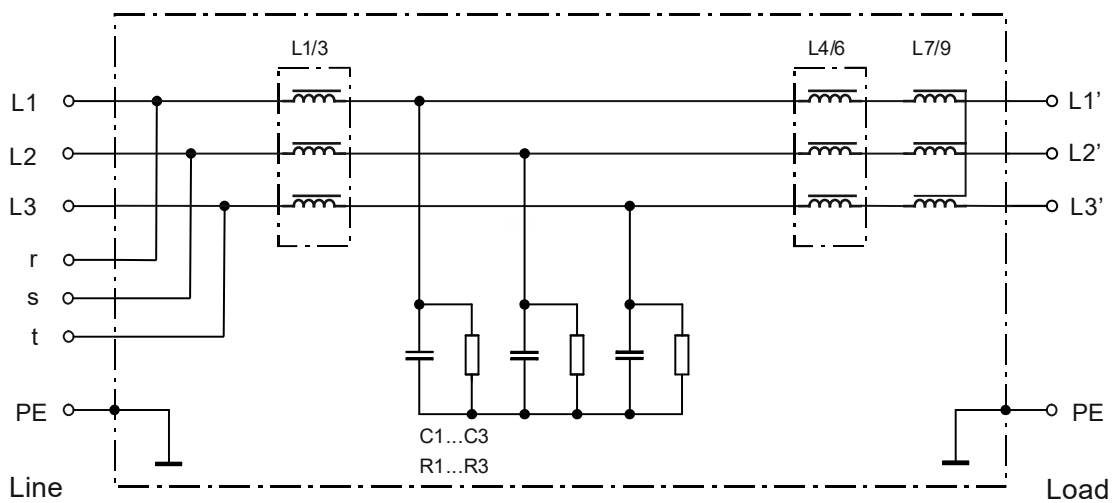
11

**Typical circuit diagram**

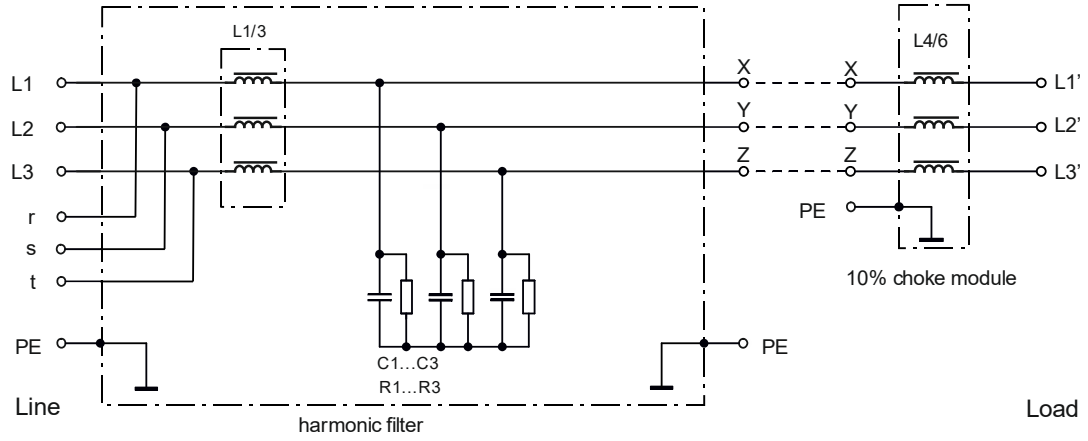
B84143G0008R176, B84143G0016R176, B84143G0030R176



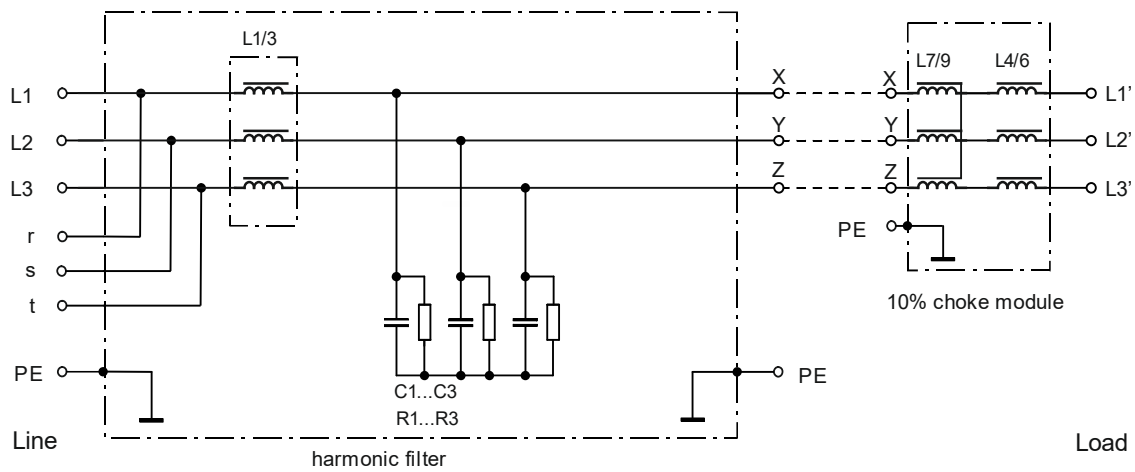
B84143G0043R176, B84143G0058R176



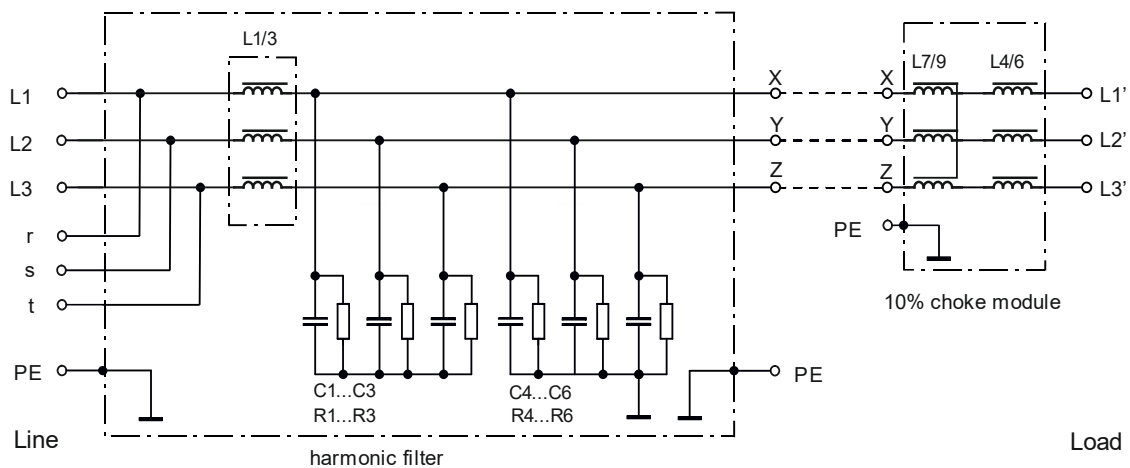
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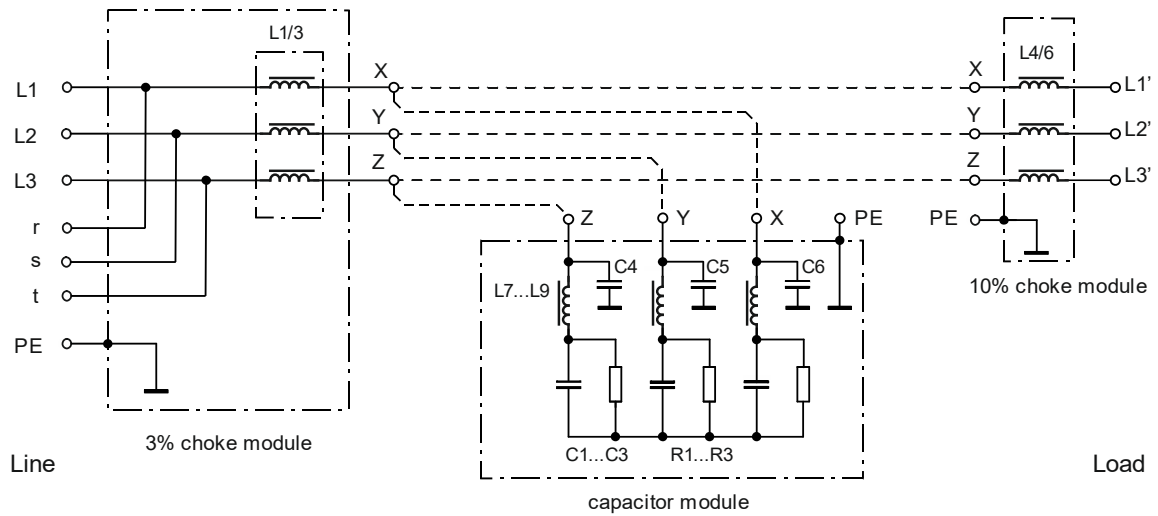
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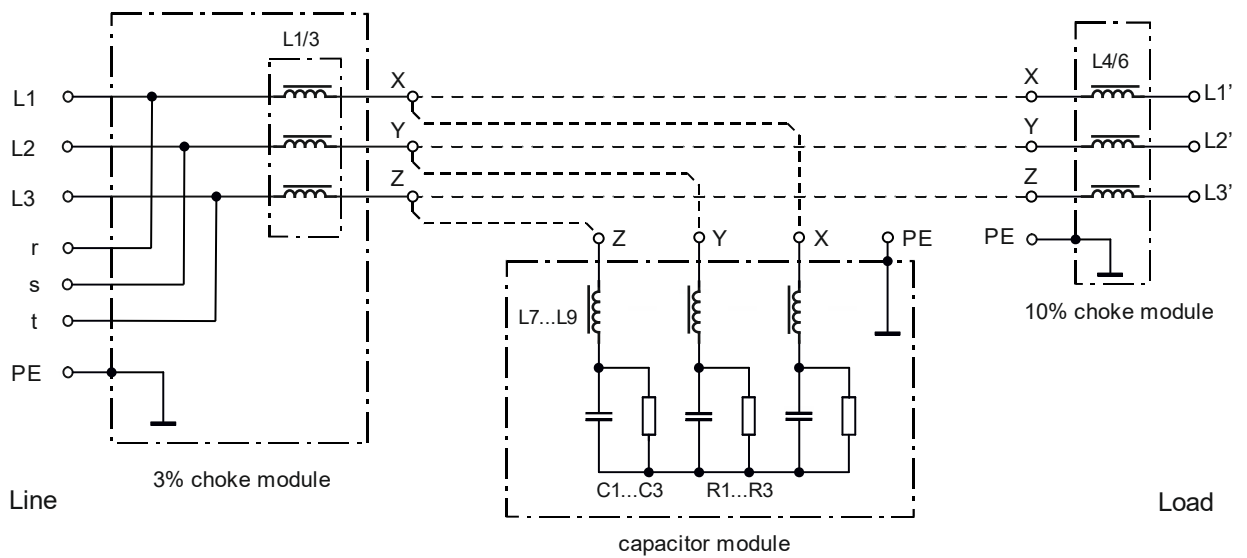
**B84143G0210S176, B84143G0300S176**



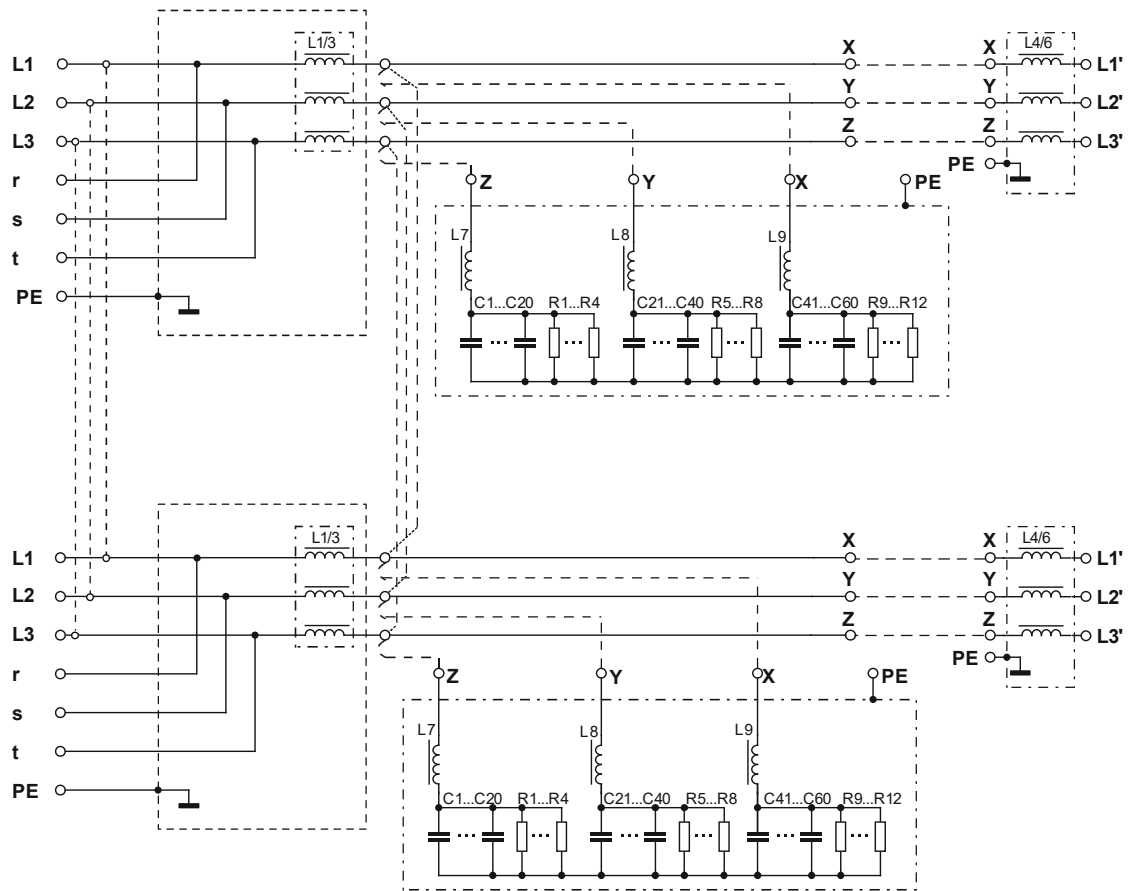
**B84143G0410S176**



**B84143G0560S176**






B84143G1140S176



### Technical data and measuring conditions

Rated voltage	$U_R$ [L-PE / L-L]	305/530 V AC (50/60 Hz)
Test voltage line to line for 2 s	$U_{test}$	2280 V DC
Test voltage line to case for 2 s	$U_{test}$	3000 V DC
Rated temperature	$T_R$	50 °C
Climatic category (IEC 60068-1: 2013)		25/100/21
Degree of protection (IEC 60529: 2015)		IP 00
Degree of protection (IEC 60529: 2013) in combination with optional cover B84143Q*R176		IP 20

### Characteristics and ordering codes

$I_R$	Terminal cross section <sup>3)</sup>	Power losses <sup>1)</sup>	$R_{typ}$	Approx. weight		Ordering code	Converter type CIMR-	Approvals <sup>2)</sup>			
											
A	mm <sup>2</sup>	W	mΩ	kg							
8	4	75	268	9		B84143G0008R176	Dx4A0005xxx	D	D	D	
16	4	140	98	18		B84143G0016R176	Dx4A0010xxx	D	D	D	
30	10	165	38	28		B84143G0030R176	Dx4A0020xxx	D	D	D	
43	16	240	26	37		B84143G0043R176	Dx4A0030xxx	D	D	D	
58	35	260	17	64		B84143G0058R176	Dx4A0040xxx	D	D	D	
				Harmonic filter	10%-choke						
86	50	300	10	20	55	B84143G0086R176	Dx4A0060xxx	D	D	D	
145	70	515	6	30	69	B84143G0145R176	Dx4A0100xxx	D	D	D	
210	busbar	665	3	39	98	B84143G0210S176	Dx4A0130xxx	D	D	D	
300	busbar	855	2.3	42	149	B84143G0300S176	Dx4A0185xxx	D	D	D	
				3%-choke	10%-choke	Capacitor module					
410	busbar	1398	1.3	45	163	12	B84143G0410S176	Dx4A0270xxx	D	D	D
560	busbar	1970	1.25	55	185	25	B84143G0560S176	Dx4A0370xxx	D	D	D
1140 (2 × 570)	busbar	3940	0.65	2×55	2×185	2×25	B84143G1140S176	Dx4A0630xxx	D	D	D

1) Power losses at nominal current and 20°C winding temperature with harmonics

2) **X** = approval granted

**P** = pending

**D** = designed with reference to

- = none

3) 2.5 mm<sup>2</sup> terminal cross section for D1000 voltage detection

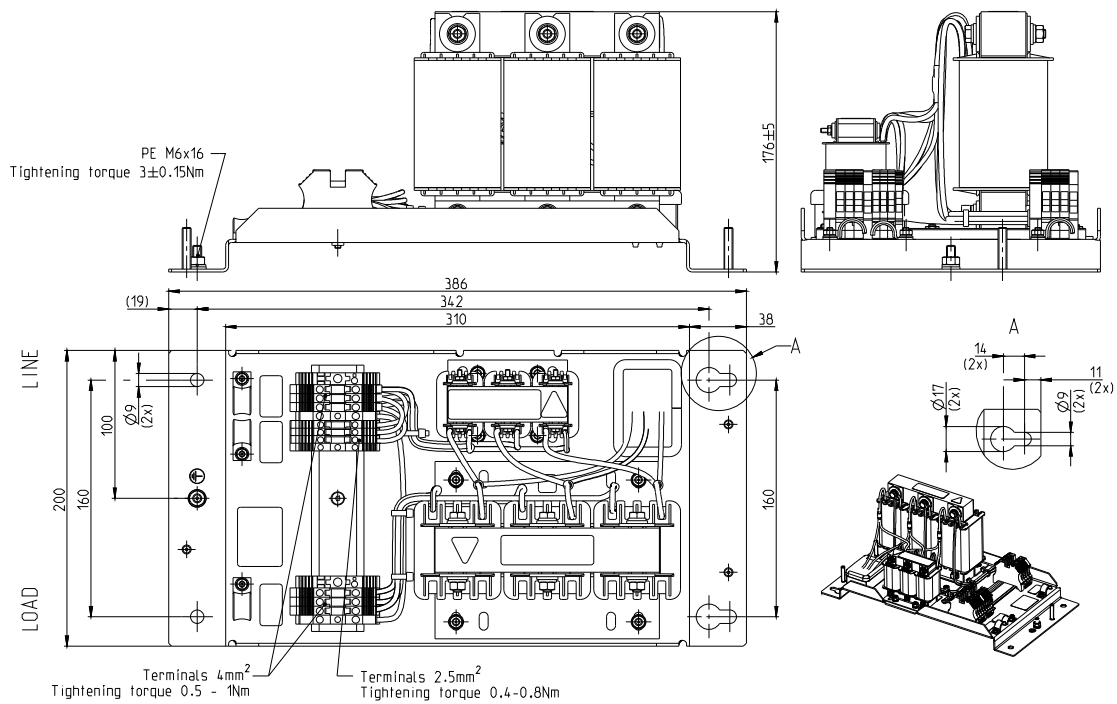
**Ordering codes for optional covers**

Ordering code cover	Material	Suitable for filter
B84143Q0008R176	Zinc plated sheet metal	B84143G0008R176
B84143Q0016R176	Zinc plated sheet metal	B84143G0016R176, B84143G0030R176
B84143Q0043R176	Zinc plated sheet metal	B84143G0043R176, B84143G0058R176

Covers for filter B84143G0086R176 up to B84143G1140S176 not available.

**Dimensional drawings**

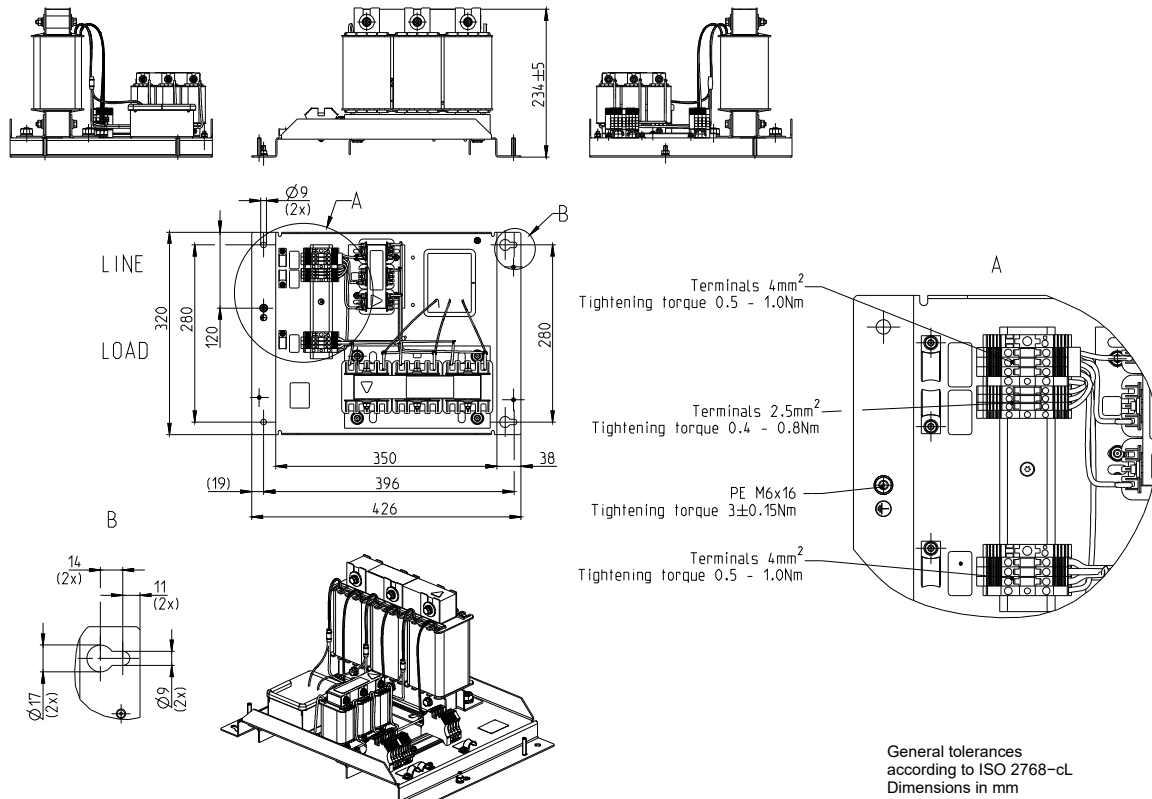
**B84143G0008R176**



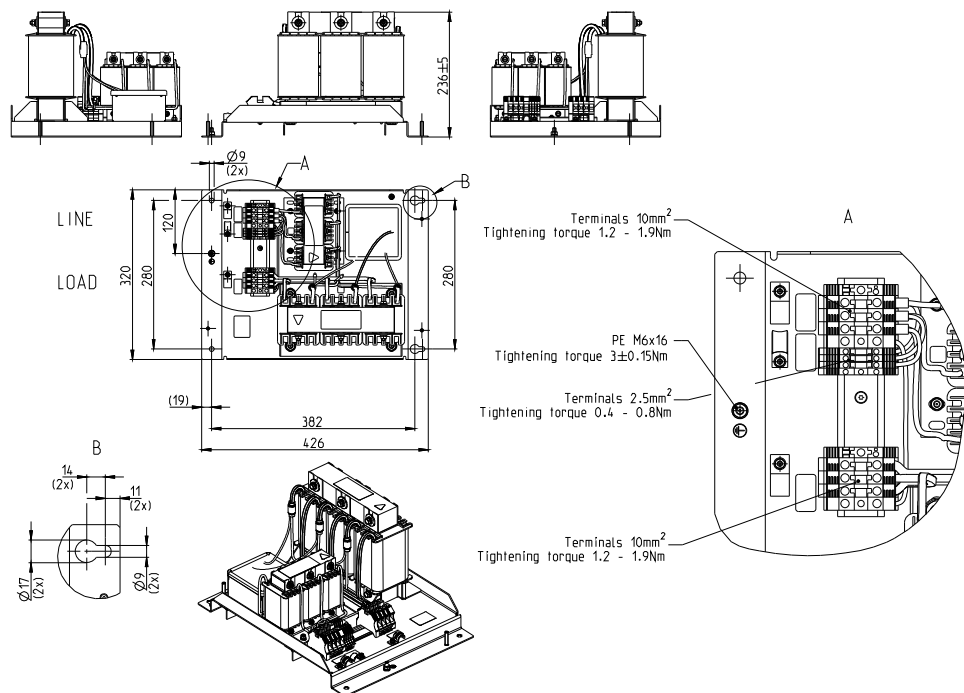
**3-line LCL-filters  
for converters and power electronics**

**B84143G/Q\*R/S176**

**B84143G0016R176**



**B84143G0030R176**



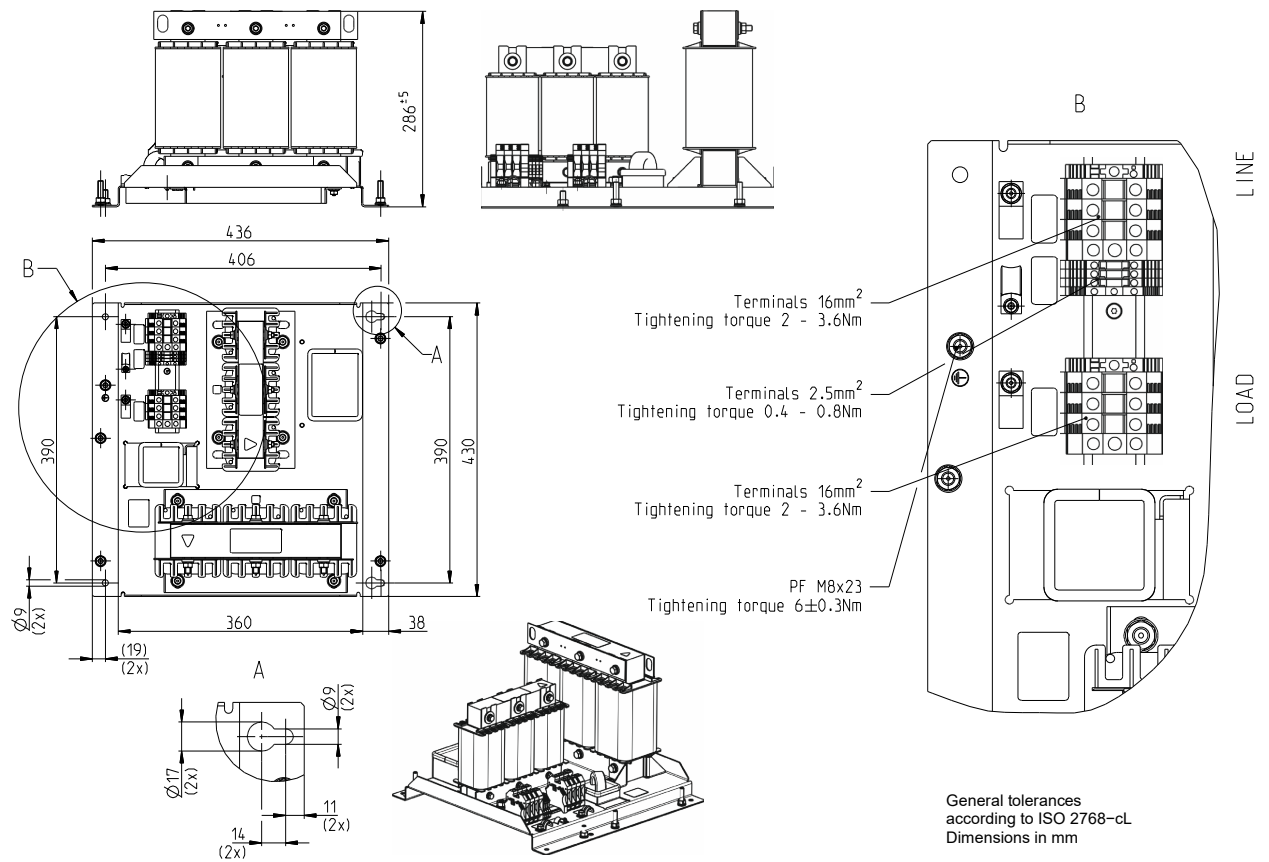
Please read *Cautions and warnings* and *Important notes* at the end of this document.

B84143G/Q\*R/S176-11-7659

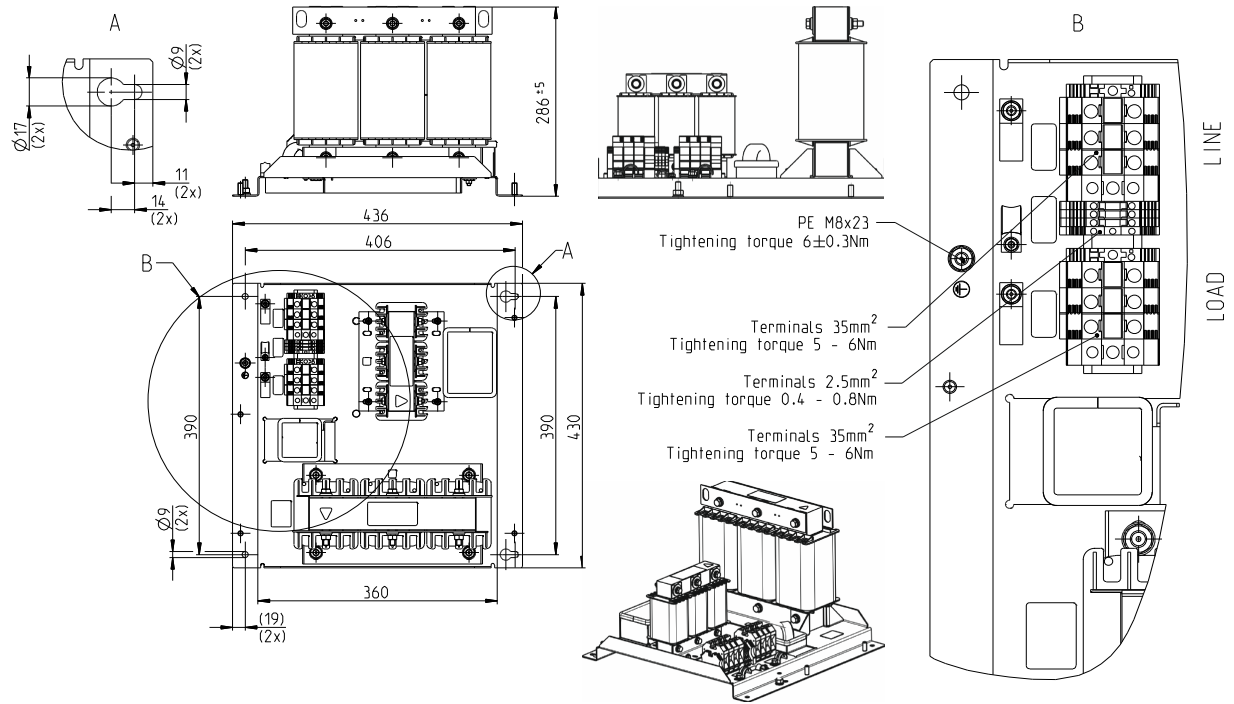
**3-line LCL-filters  
for converters and power electronics**

**B84143G/Q\*R/S176**

B84143G0043R176



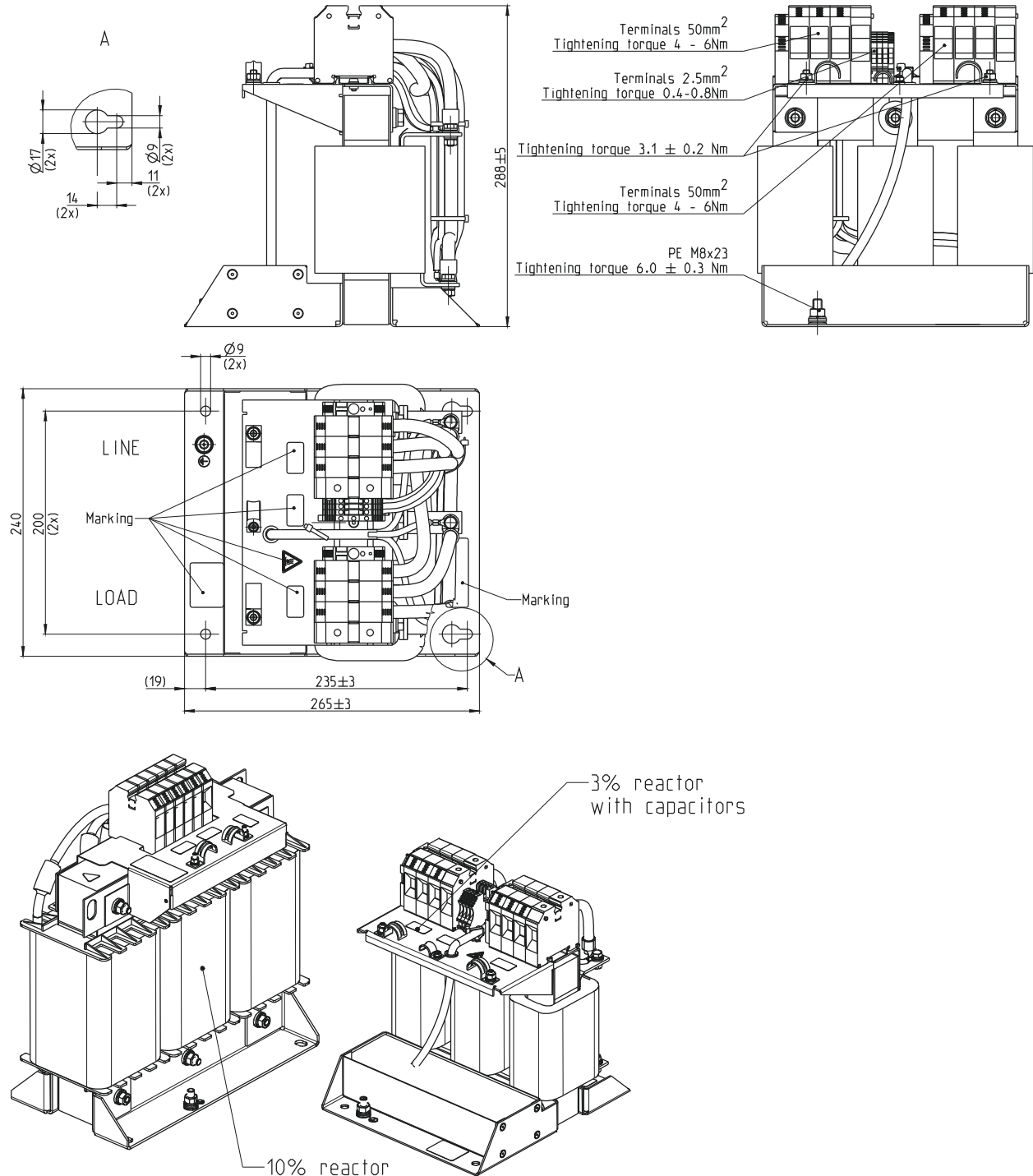
B84143G0058R176



General tolerances according to ISO 2768-cL  
Dimensions in mm

**B84143G0086R176**

Harmonic filter



General tolerances according to ISO 2768-cL  
Dimensions in mm

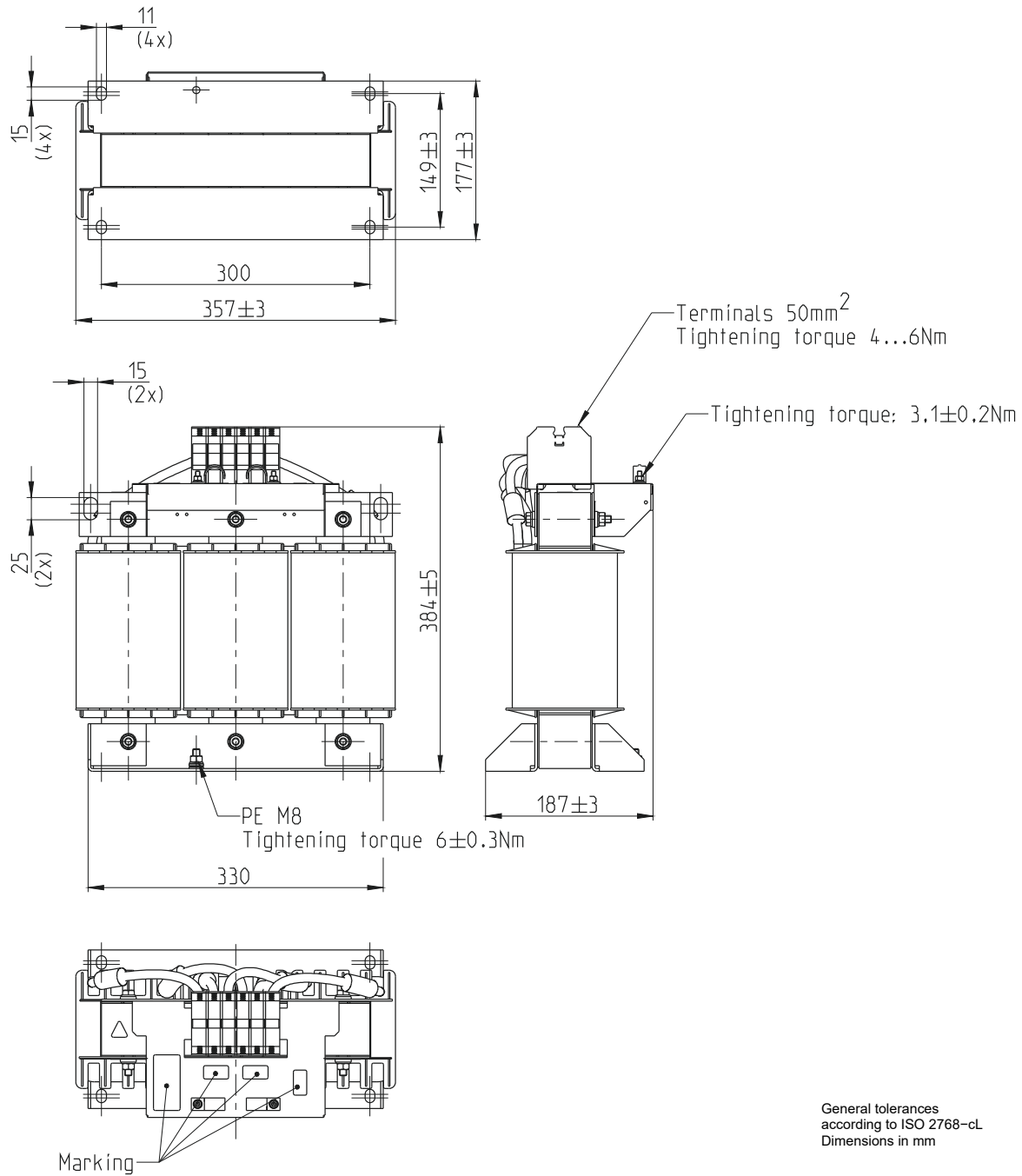
Please read *Cautions and warnings* and *Important notes* at the end of this document.

B84143G/Q\*R/S176-11-7659

**3-line LCL-filters  
for converters and power electronics**

**B84143G/Q\*R/S176**

10%-choke

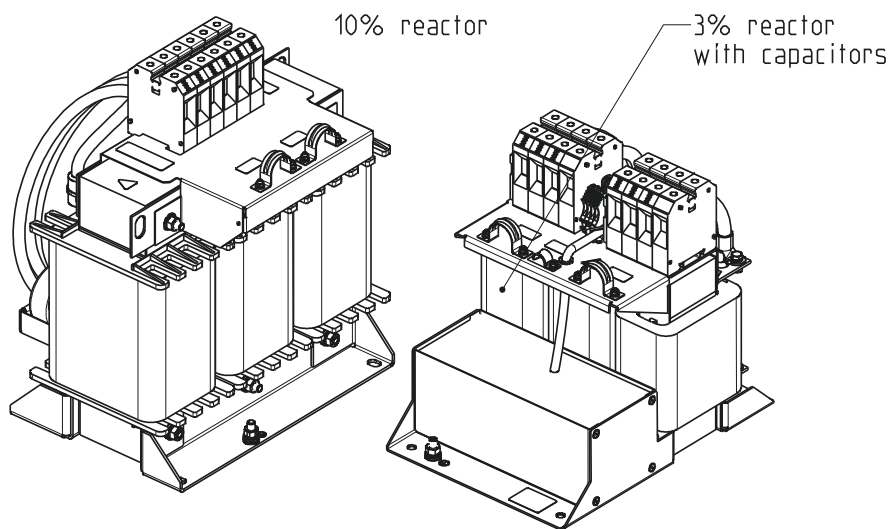
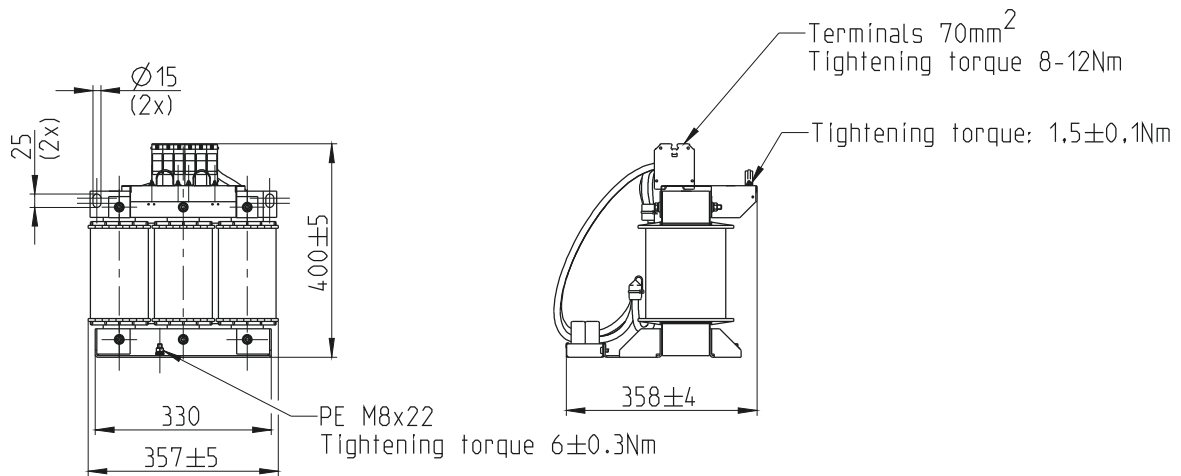
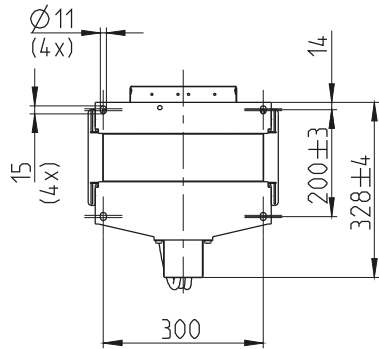


Please read *Cautions and warnings* and *Important notes* at the end of this document.

B84143G/Q\*R/S176-11-7659



10%-choke



General tolerances according to ISO 2768-cL  
Dimensions in mm

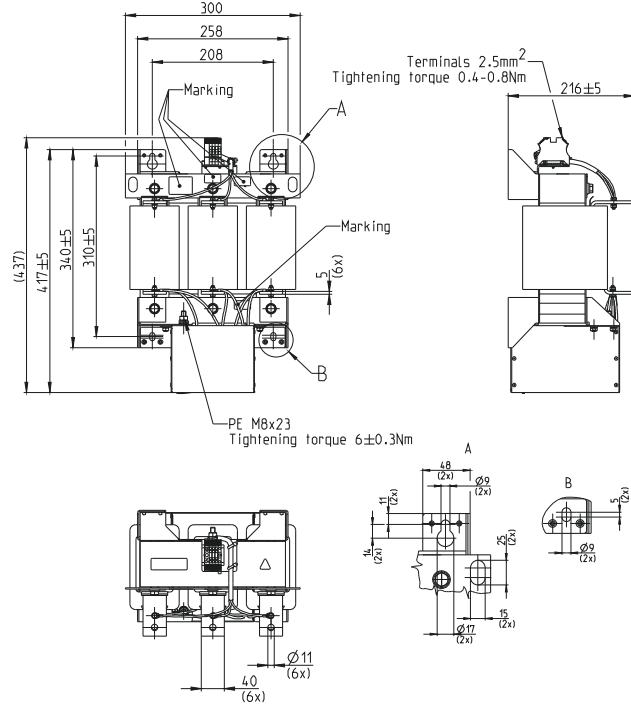


**3-line LCL-filters  
for converters and power electronics**

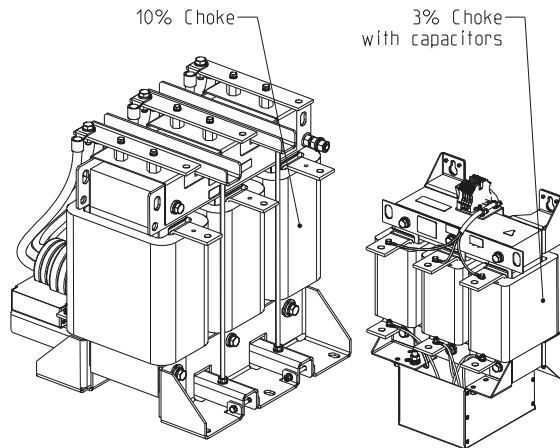
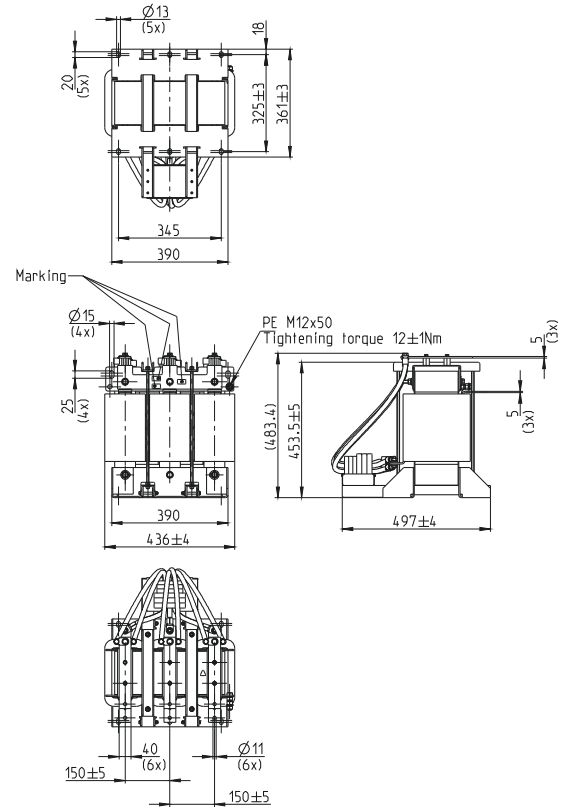
**B84143G/Q\*R/S176**

**B84143G0300S176**

Harmonic filter



10%-choke



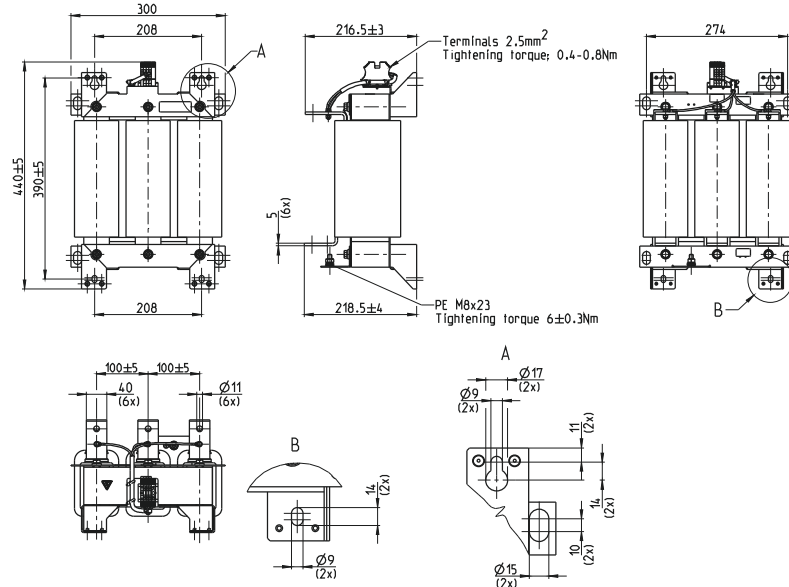
General tolerances  
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Dimensions in mm

**3-line LCL-filters  
for converters and power electronics**

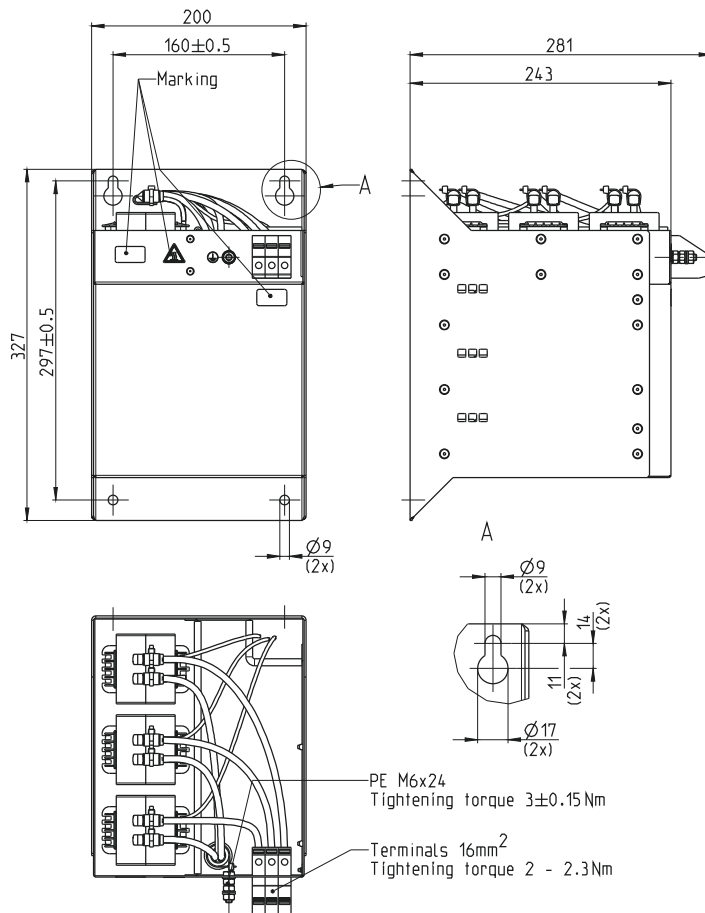
**B84143G/Q\*R/S176**

**B84143G0410S176**

3%-choke



Capacitor box



General tolerances according to ISO 2768-cl  
Dimensions in mm

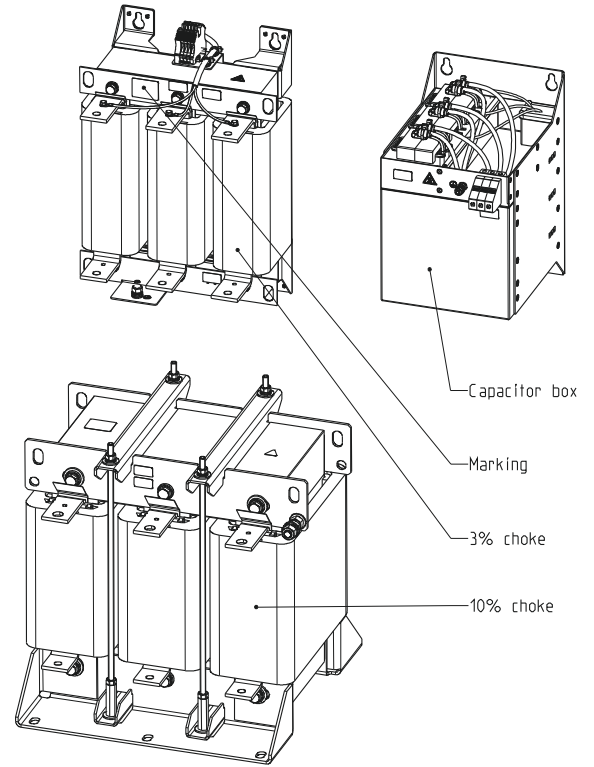
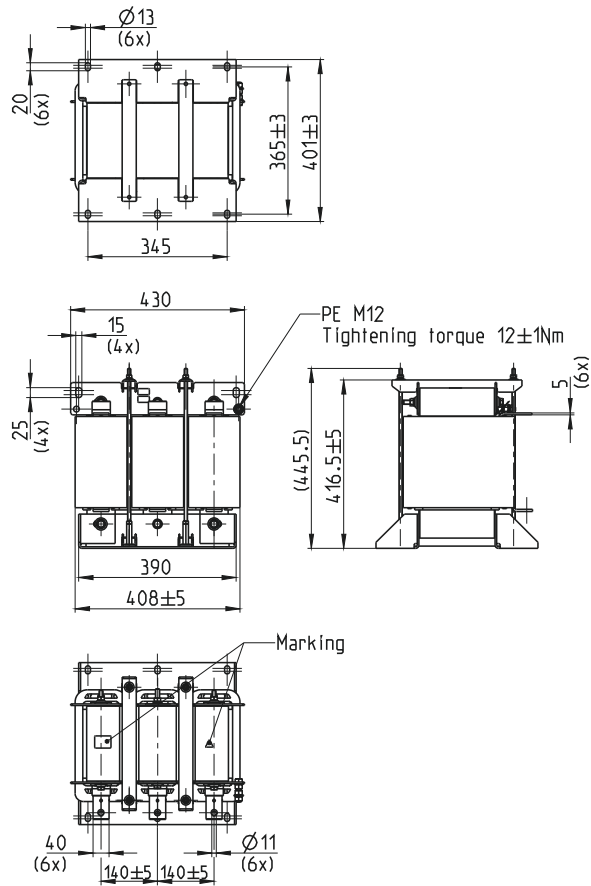
Please read *Cautions and warnings* and *Important notes* at the end of this document.

B84143G/Q\*R/S176-11-7659

**3-line LCL-filters  
for converters and power electronics**

**B84143G/Q\*R/S176**

10%-choke



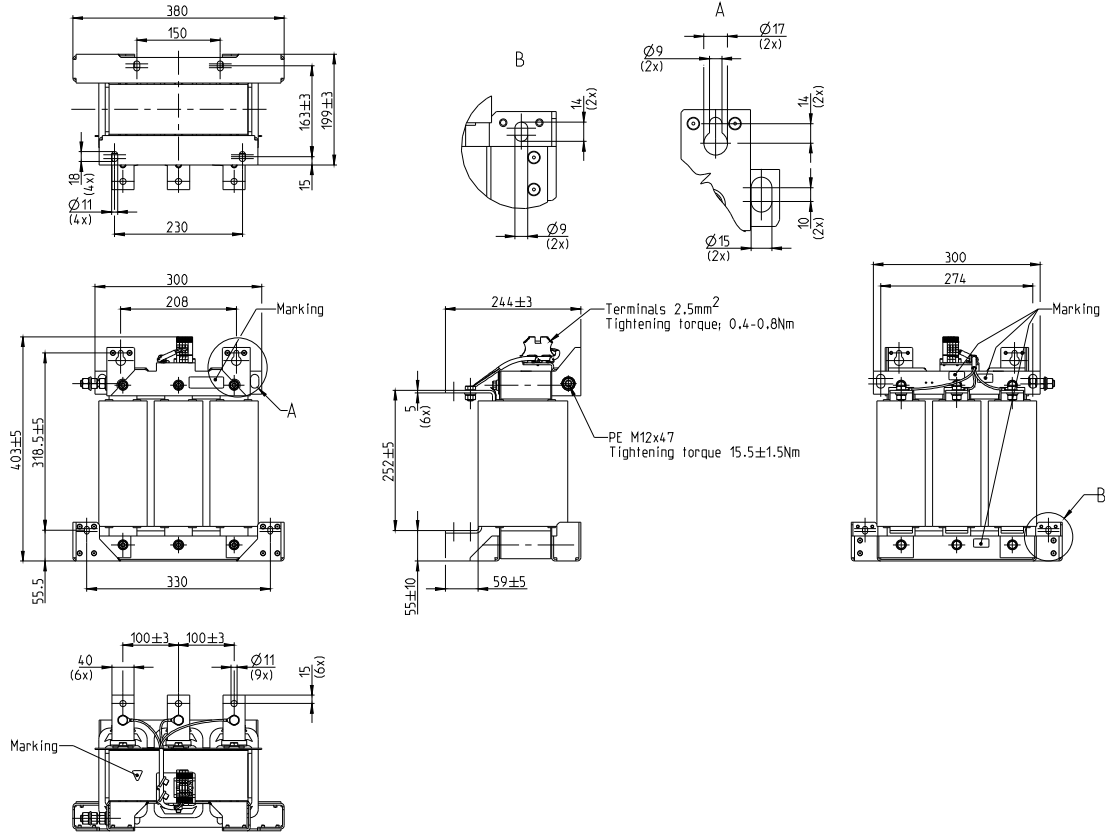
General tolerances according to ISO 2768-cL  
Dimensions in mm

**3-line LCL-filters  
for converters and power electronics**

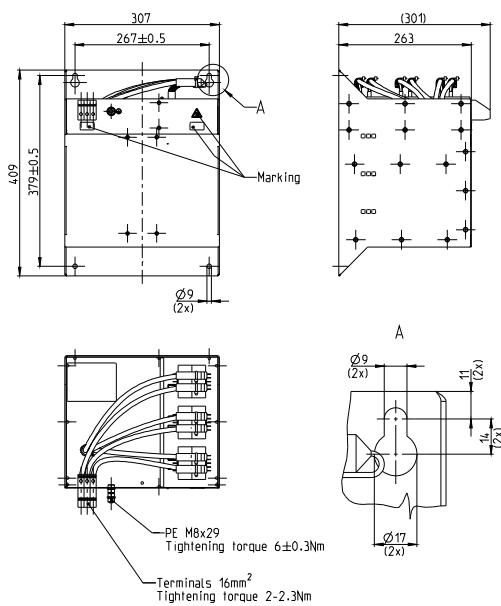
**B84143G/Q\*R/S176**

**B84143G0560S176**

3%-choke



**Capacitor box**



General tolerances according to ISO 2768-cL  
Dimensions in mm

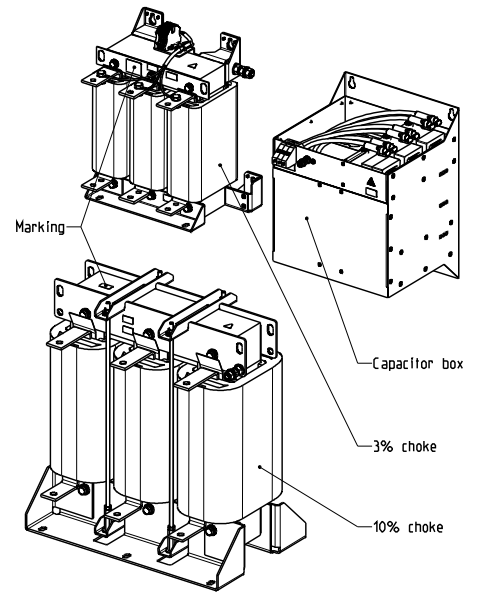
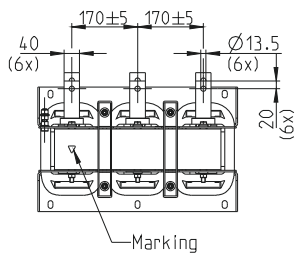
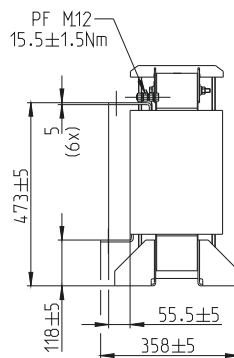
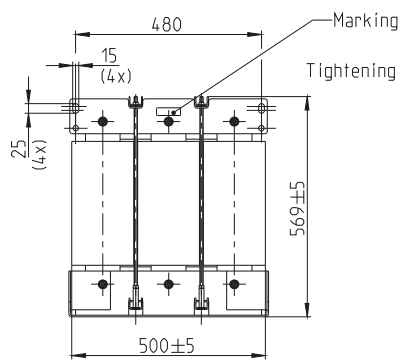
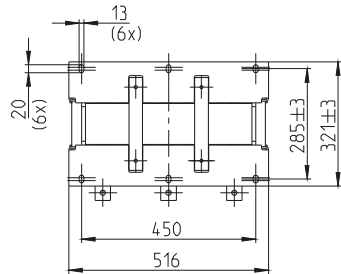
Please read *Cautions and warnings* and *Important notes* at the end of this document.

B84143G/Q\*R/S176-11-7659

**3-line LCL-filters  
for converters and power electronics**

**B84143G/Q\*R/S176**

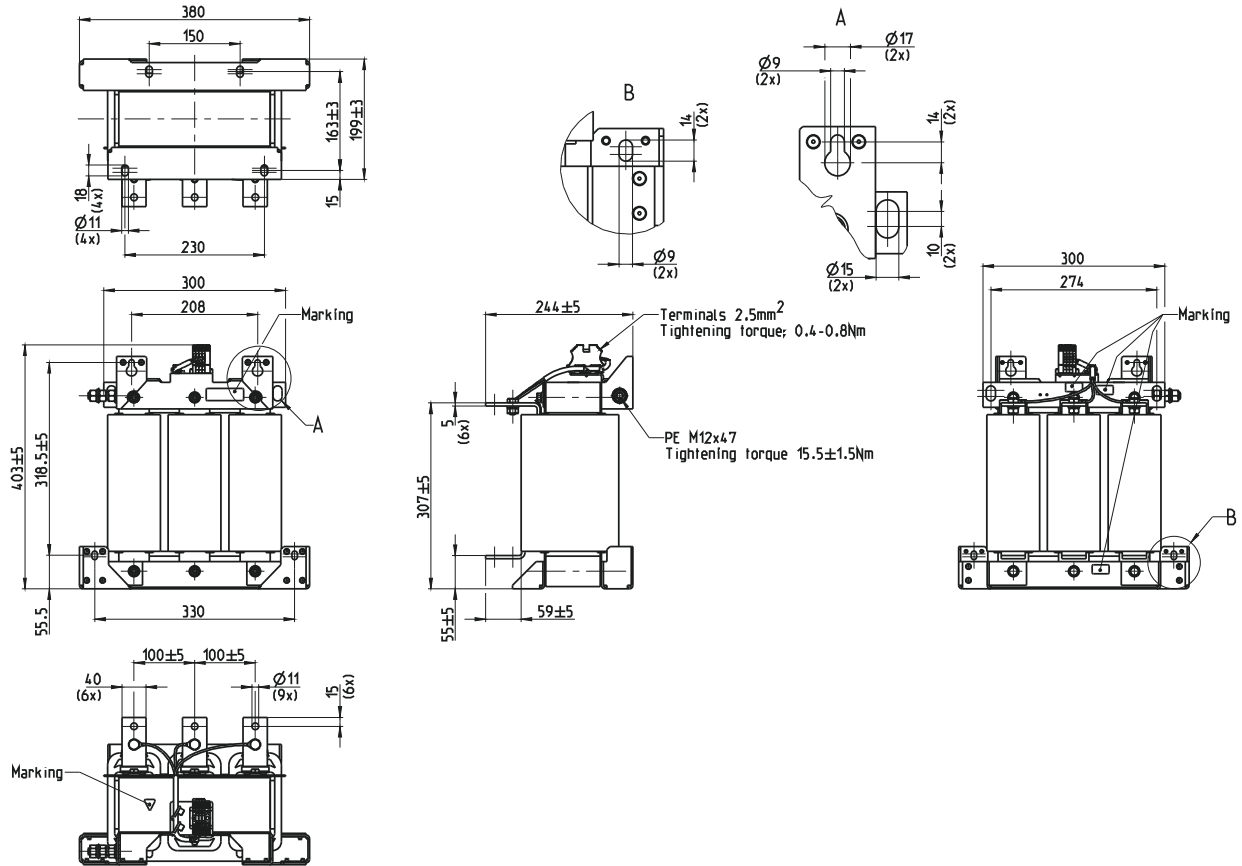
10%-choke



General tolerances  
according to ISO 2768-cL  
Dimensions in mm

**B84143G1140S176**

3%-choke

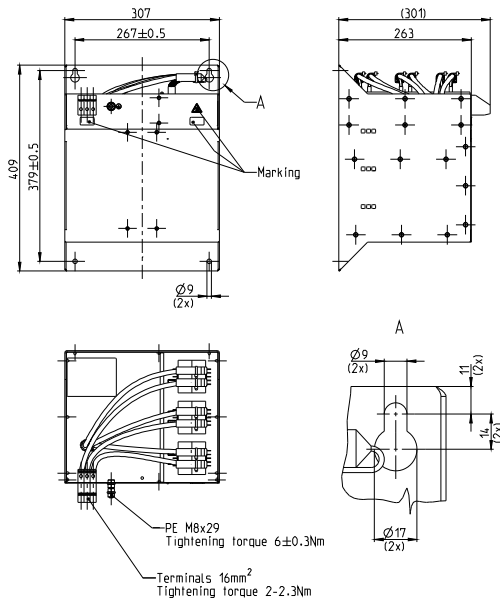


General tolerances according to ISO 2768-cl  
Dimensions in mm

# 3-line LCL-filters for converters and power electronics

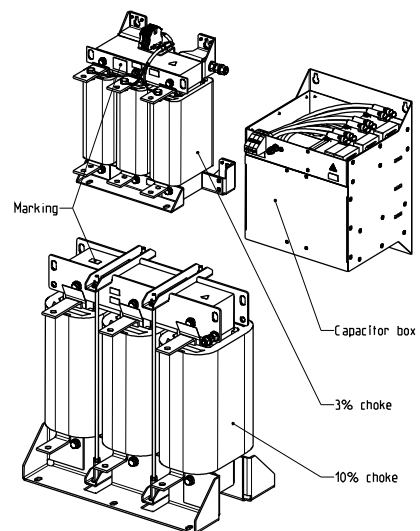
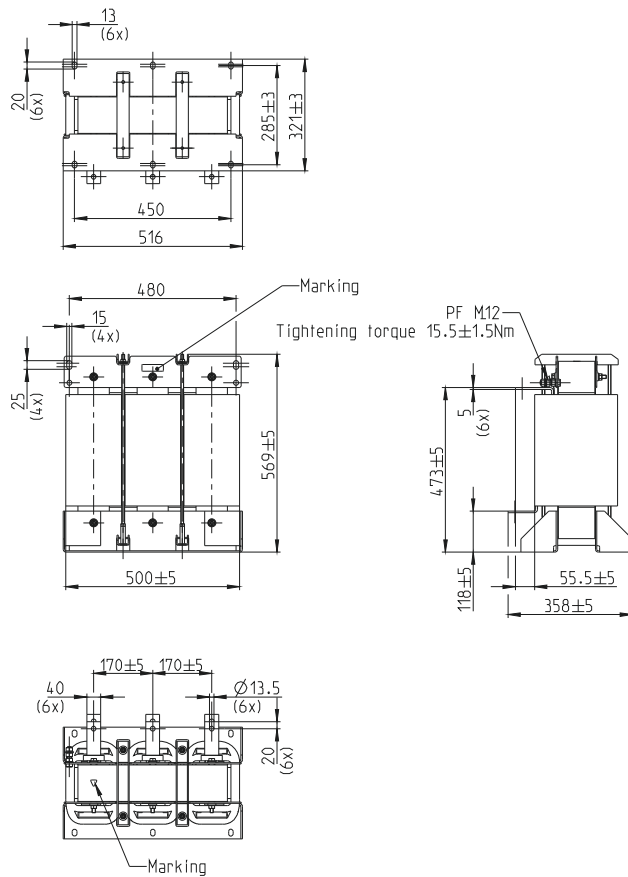
B84143G/Q\*R/S176

## Capacitor box



General tolerances according to ISO 2768-cL  
Dimensions in mm

## 10%-choke



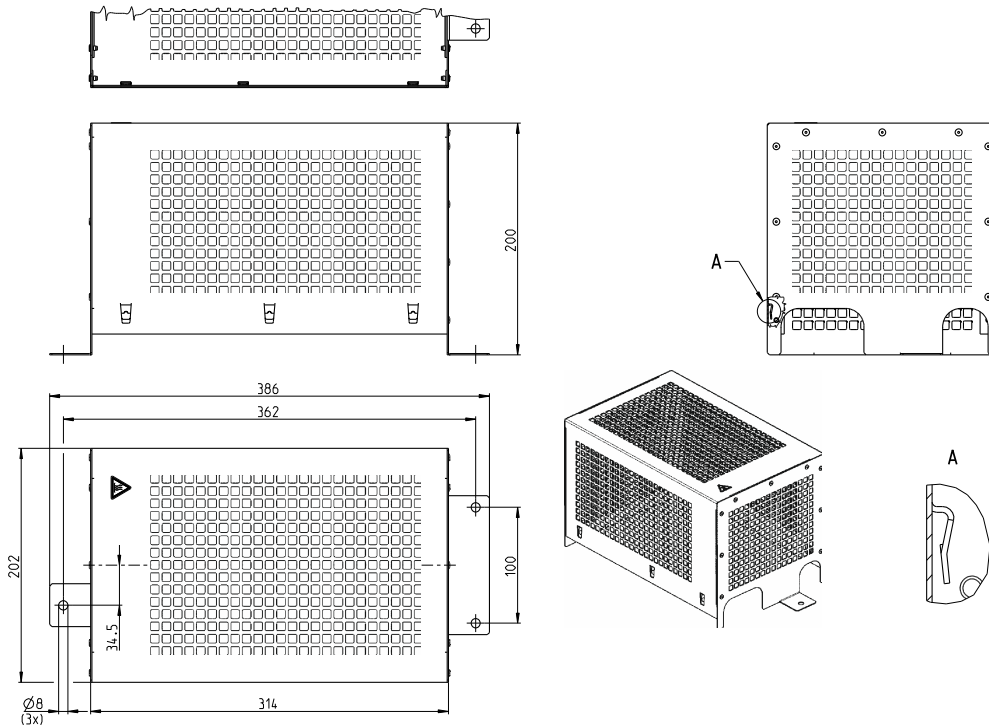
General tolerances according to ISO 2768-cL  
Dimensions in mm

Please read *Cautions and warnings* and *Important notes* at the end of this document.

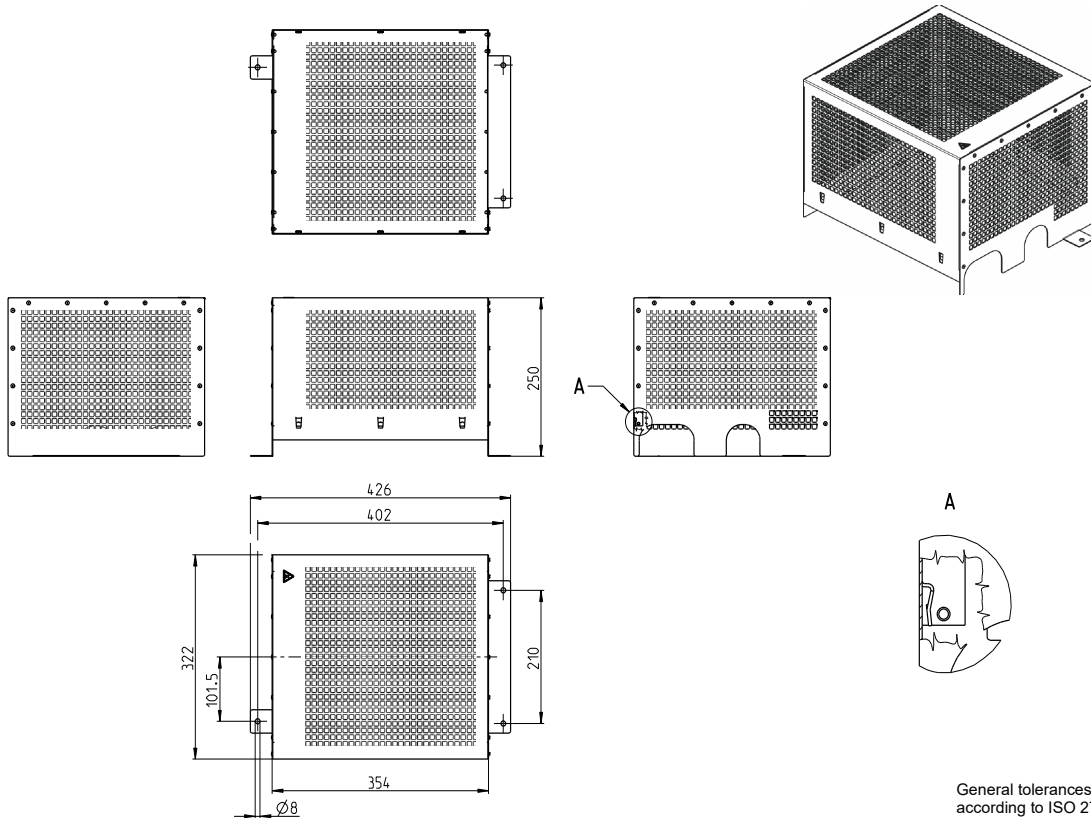
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**Dimensional drawings for optional covers**

**B84143Q0008R176**

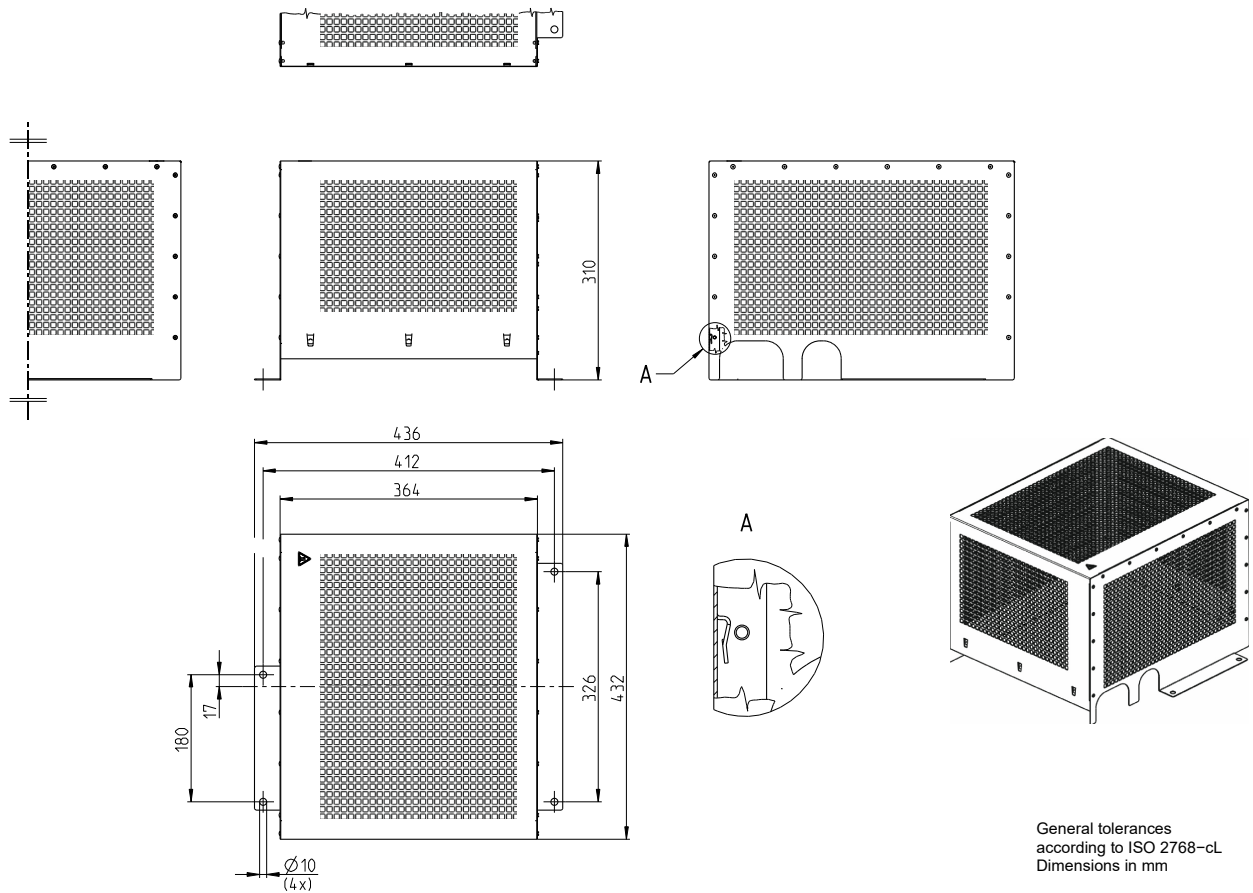


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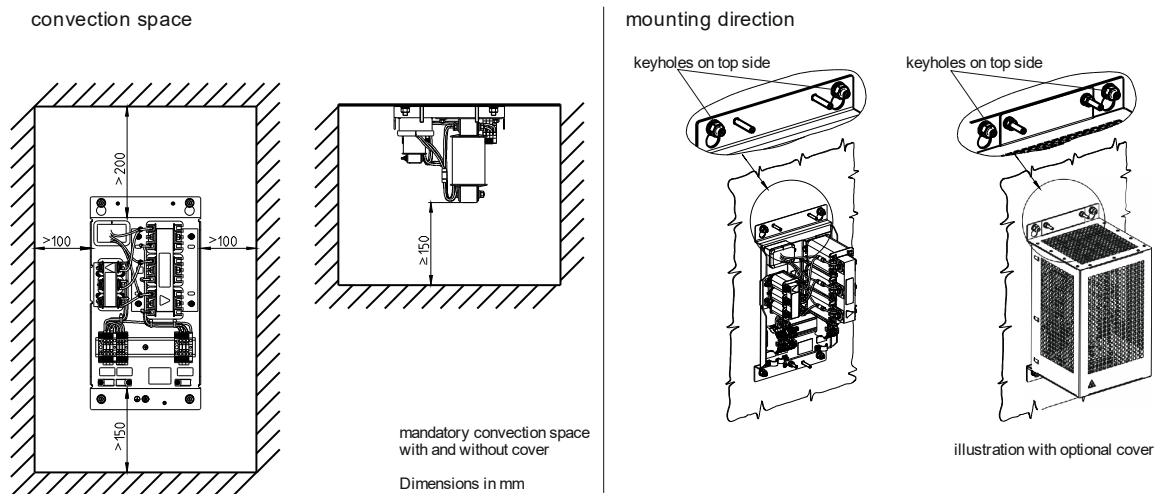


General tolerances according to ISO 2768-cL  
Dimensions in mm

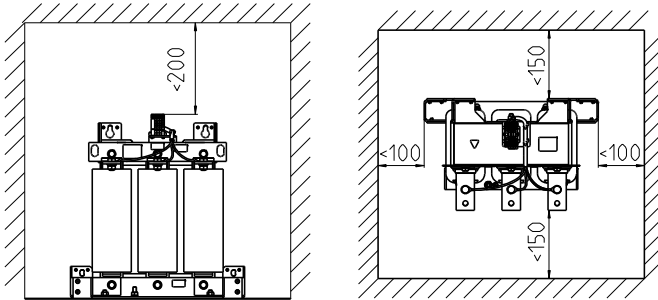
B84143Q0043R176



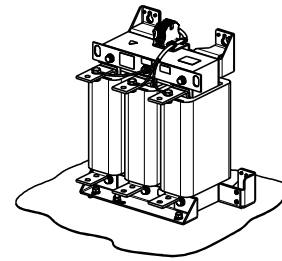
**Mounting and convection space**



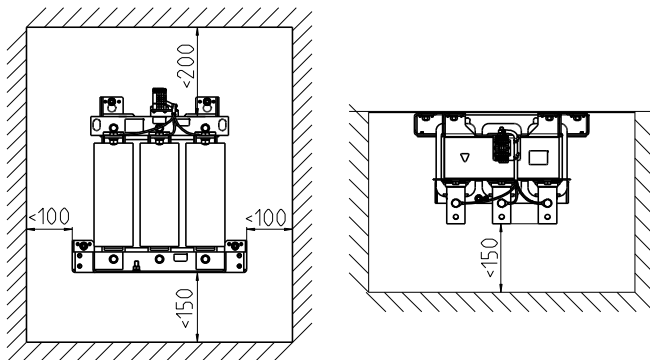
convection space for floor mounted design



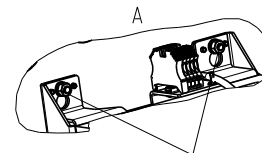
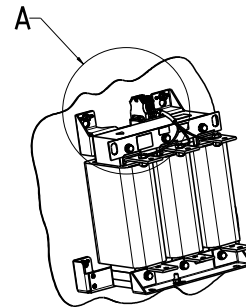
mounting direction for floor mounted design



convection space for wall mounted design



mounting direction for wall mounted design



Keyholes on top side

Dimensions in mm

### Cautions and warnings

- Please note further advice in our website [www.tdk-electronics.tdk.com/pemc\\_filters\\_qti](http://www.tdk-electronics.tdk.com/pemc_filters_qti)
- 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 minimum cross-section of  $10 \text{ mm}^2$  Cu or  $16 \text{ mm}^2$  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  $3.5 \text{ mA} < I_{LK}^{a)} \leq 10 \text{ mA}$ , 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  $\geq 2.5 \text{ mm}^2$
  - 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.

<sup>a)</sup>  $I_{LK}$  = 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](http://www.tdk-electronics.tdk.com/orderingcodes).

### 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](http://www.tdk-electronics.tdk.com/material)). Should you have any more detailed questions, please contact our sales offices.
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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](http://www.tdk-electronics.tdk.com/trademarks).

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