



Film capacitors – Power Electronic Capacitors

PEC-HP - Modular AC filter series

Series/Type:	MKK AC Modular
Ordering code:	B25615A*
Date:	October 2025
Version:	1.0

Rated capacitance: 35 ... 1435 μ F
Rated RMS Voltage: 250 ... 1000 V

Construction

- Dielectric: Polypropylene film
- 3 phases with delta internal connection
- Stainless steel case and cover
- Dry, resin filled, non PCB
- R22 HL1, R23 HL2 according to EN 45545-2

Features

- Modular design
- Self-healing technology
- High current capability
- Over-voltage capability
- Low ESR and low ESL
- Low losses

Typical applications

AC filtering applications, e.g.:

- Input/Output filter for renewable energy converters (solar, wind, ...)
- Input/Output filter for traction applications (metro, light train inverters, locos, auxiliary converters, ...)
- Input/Output filter for energy storage systems
- Input/Output filter for industrial motor drive

Reference Standards

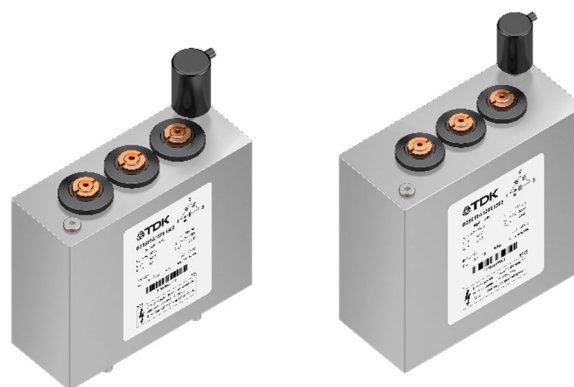
- IEC 61071:2017, International Standard Capacitors for power electronics
- IEC 61881-1:2010, International Standard Railway Applications-Rolling stock equipment-Capacitors for power electronics
- EN 45545-2:2020, Requirements for fire behavior of materials and components

Terminals

- Low inductance flat female terminals M6

Packing

- Construction A: 3 capacitors per box
- Construction B: 2 capacitors per box



Construction A

Construction B

Technical data and specifications

Characteristics	
Rated capacitance C_R	Up to 1435 μF (see table)
Tolerance	J ($\pm 5\%$)
Rated voltage range V_N	360 to 1420 V (see table)
Nominal RMS voltage range $V_{\text{Nom,RMS}}$	250 to 1000 V RMS (see table)
Rated line current $I_{\text{max,RMS}}$	Up to 211 A (see table)
Phase inductance ESL (typical value)	Construction A: 58 ... 83 nH Construction B: 62 ... 87 nH
Thermal Resistance $R_{\text{th}}^{1)}$ (typical value)	Construction A: 1.1 K/W Construction B: 0.8 K/W

1) Calculated from T_{amb} to T_{HS} considering natural convection and no transfer of heat through the terminals.

Maximum ratings

Maximum permissible voltage (V_{max})	$V_N + 10\%$ (30% of on-load daily duration) $V_N + 15\%$ (up to 30 min daily) $V_N + 20\%$ (up to 5 min daily) $V_N + 30\%$ (up to 1 min daily)
Maximum permissible peak voltage	$V_N + 50\%$ for 30 ms is permitted 1000 times during the lifetime of the capacitors

The average applied voltage shall not be higher than the specified voltage.

It shall be recognised that any significant period of operation at voltages above the rated one would reduce overall life.

Test data

Voltage test between terminals (V_{TT})	$2.15 \cdot V_N$, DC, 10s
Voltage test terminal to case (V_{TC})	3000 V RMS, 50 Hz, 10 s
Partial discharges to case (Extinction)	1100 V RMS, 50 Hz, 30 s ($< 40 \text{ pC}$)

Design data

Weight approx.	6 kg construction A, 10 kg construction B
Fixing	4 x M12

Terminals

Terminations	Female 3 x M6, contact area 149 mm^2
Max. torque	6 Nm

Climatic category 40/70/56	
Θ min	−40 °C
Θ max	+70 °C
Θ _{hotspot} max.	+85 °C
Storage temperature	−40 °C ... +85 °C
Humidity	av. rel. <95%.
Time test	56 days
Maximum altitude	2000 m, higher altitude to be requested

Life expectancy	
Lifetime	200 000 hours @ nominal conditions
End of life criteria	C-loss: 3%

Electrical characteristics and ordering codes

V_{Nom,RMS} V	V_N V	C_R μF¹⁾	I_{max,RMS} A²⁾	I_s kA	$\hat{I}$ kA	Dimensions l x w x h mm	Construction / Packing Unit	Ordering code⁴⁾
250	360	660	128	25	1.7	240 x 92 x 200	A / 3 pcs	B25615A2667J101
330	470	370	124	19	1.2	240 x 92 x 200	A / 3 pcs	B25615A3377J101
440	630	190	130	27	1.8	240 x 92 x 200	A / 3 pcs	B25615A4197J101
480	680	155	127	25	1.6	240 x 92 x 200	A / 3 pcs	B25615A4157J101
530	750	130	128	23	1.5	240 x 92 x 200	A / 3 pcs	B25615A5137J101
600	850	95	124	19	1.3	240 x 92 x 200	A / 3 pcs	B25615A6956J101
660	940	85	120	18	1.2	240 x 92 x 200	A / 3 pcs	B25615A6856J101
720	1020	70	118	16	1.1	240 x 92 x 200	A / 3 pcs	B25615A7706J101
780	1110	65	115	16	1.1	240 x 92 x 200	A / 3 pcs	B25615A7656J101
850	1210	50	116	21	1.4	240 x 92 x 200	A / 3 pcs	B25615A8506J101
1000	1420	35	109	17	1.2	240 x 92 x 200	A / 3 pcs	B25615A1356J101

V_{Nom,RMS} V	V_N V	C_R μF¹⁾	I_{max,RMS} A²⁾	I_s kA	$\hat{I}$ kA	Dimensions l x w x h mm	Construction / Packing Unit	Ordering code⁴⁾
250	360	1435	211 ³⁾	40	2.7	262 x 116 x 255	B / 2 pcs	B25615A2148J301
330	470	800	200 ³⁾	30	2.0	262 x 116 x 255	B / 2 pcs	B25615A3807J301
440	630	420	141	44	3.0	262 x 116 x 255	B / 2 pcs	B25615A4427J301
480	680	345	138	40	2.7	262 x 116 x 255	B / 2 pcs	B25615A4347J301
530	750	285	135	36	2.4	262 x 116 x 255	B / 2 pcs	B25615A5287J301
600	850	210	132	31	2.1	262 x 116 x 255	B / 2 pcs	B25615A6217J301
660	940	190	128	29	2.0	262 x 116 x 255	B / 2 pcs	B25615A6197J301
720	1020	155	126	27	1.8	262 x 116 x 255	B / 2 pcs	B25615A7157J301
780	1110	140	122	25	1.7	262 x 116 x 255	B / 2 pcs	B25615A7147J301
850	1210	120	123	36	2.4	262 x 116 x 255	B / 2 pcs	B25615A8127J301
1000	1420	80	119	29	1.9	262 x 116 x 255	B / 2 pcs	B25615A1806J301

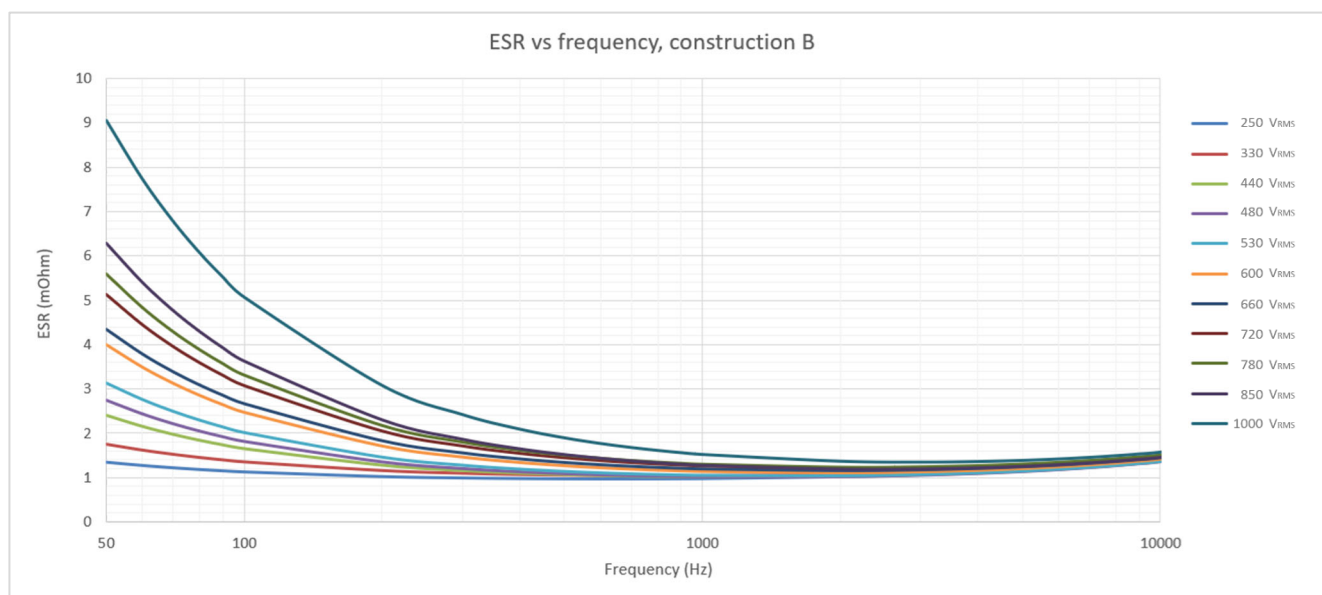
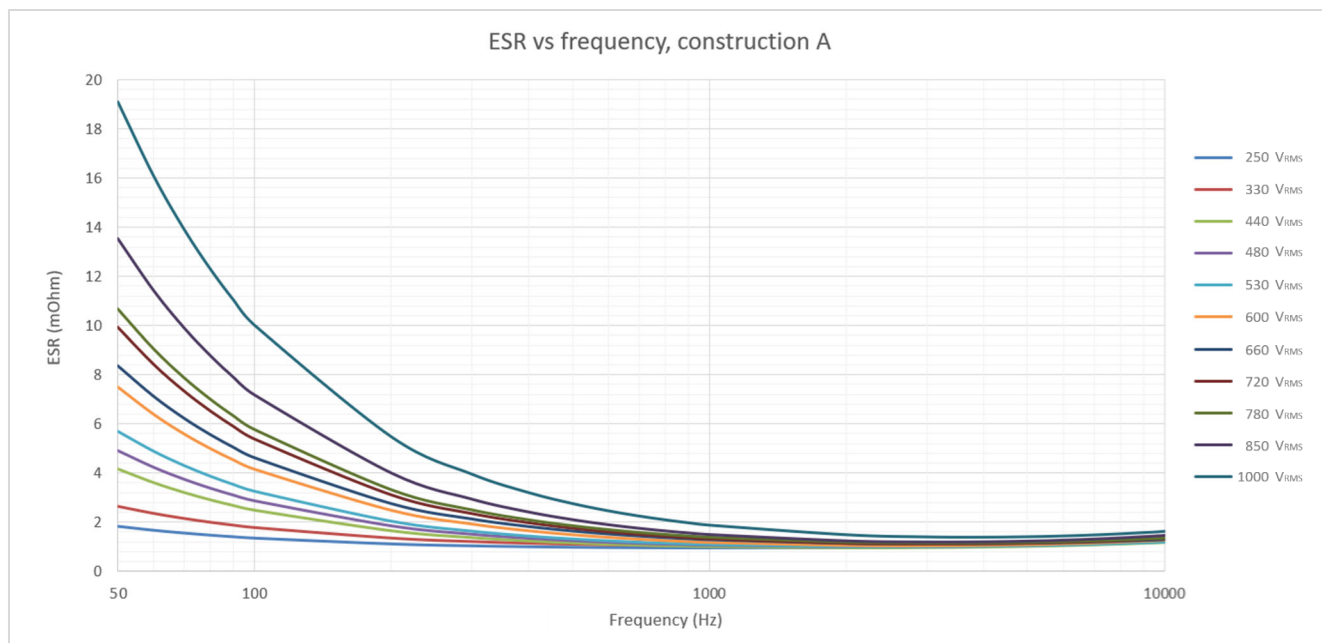
1) Phase capacitance. Manufacturing tolerance of capacitance $\pm 5\%$. Intermediate values available upon request.

2) Maximum line current at 65 °C ambient temperature for 85 °C hot spot with natural convection, no transfer of heat through the terminals, and current spectrum with fundamental frequency 50 Hz and harmonics up to 10 kHz.

3) Maximum line current at 50 °C ambient temperature for 85 °C hot spot with natural convection, no transfer of heat through the terminals, and current spectrum with fundamental frequency 50 Hz and harmonics up to 10 kHz.

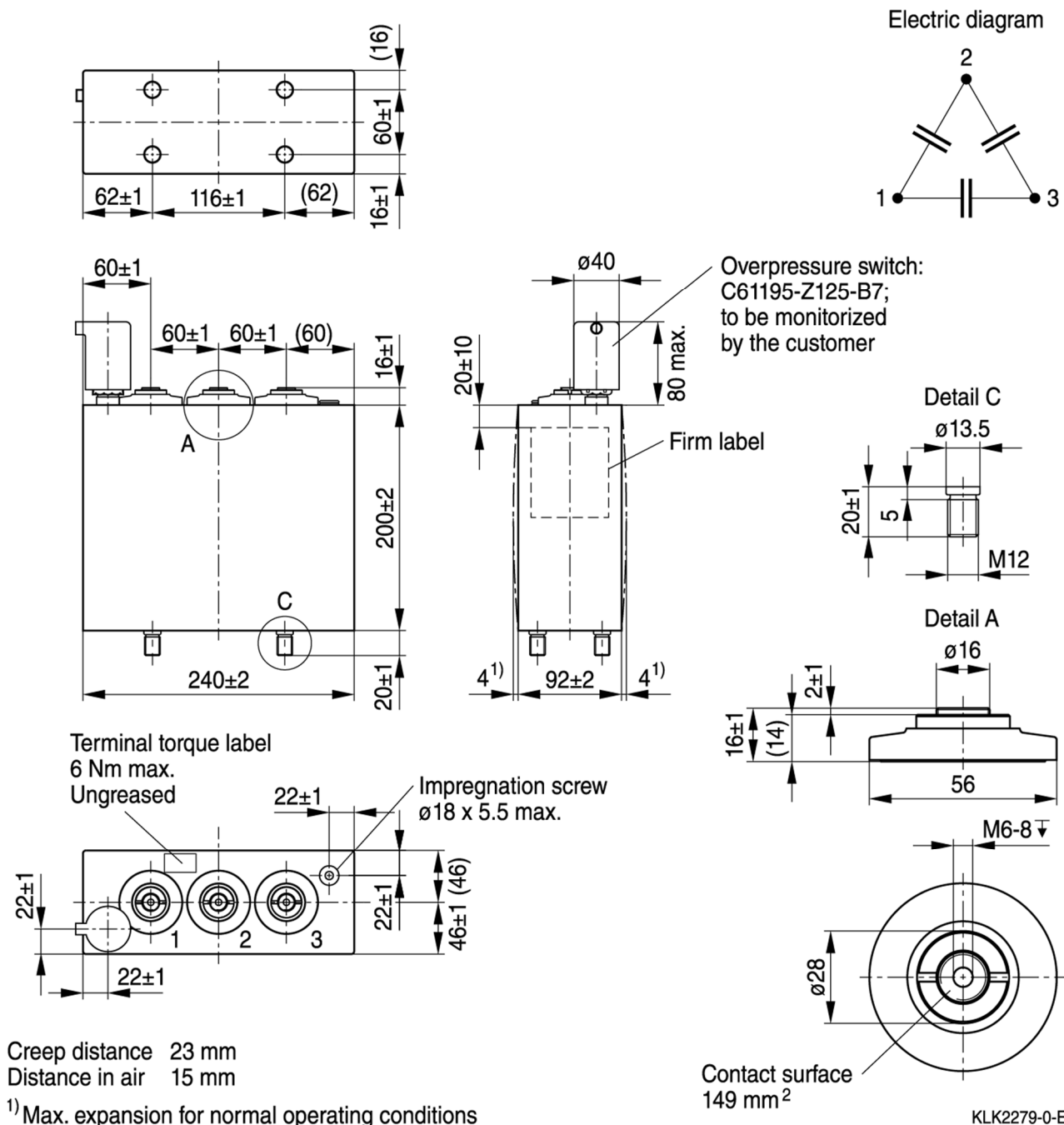
4) Ordering code for capacitor equipped with overpressure switch. For other configurations please contact your TDK representative.

ESR vs frequency



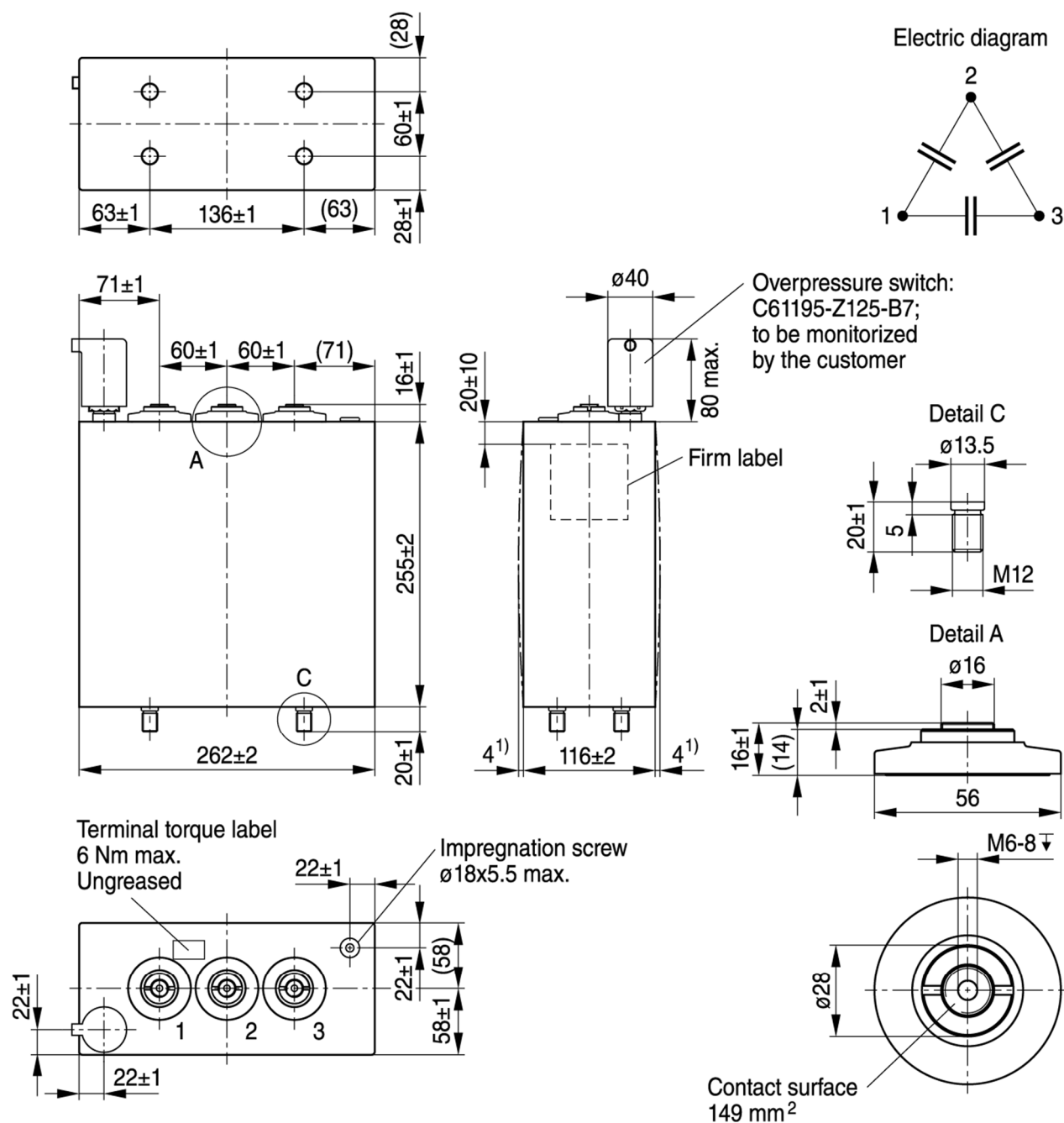
Dimensional drawings

Construction A



Dimensional drawings

Construction B



Creep distance 23 mm
Distance in air 15 mm

¹⁾ Max. expansion for normal operating conditions

KLK2280-U-E

Cautions and warnings

General safety recommendations

When employed in power electronics applications, the capacitors run with high energy and high currents.

The energy stored in capacitors may be lethal. To prevent any risks of shocks, the capacitor should be discharged with adequate means by qualified people and short-circuited between terminals before handling.

The capacitor can contain dangerous residual charges even after long time without operation. For this reason, the electrical terminals must remain short-circuited until the capacitors are connected in the operating circuit.

TDK Electronics cannot predict all possible stresses that a power electronic capacitor can be subjected to. There is a remaining probability of power electronic capacitors showing malfunction due to excess temperature, overvoltage, wrong application, wrong installation, faulty maintenance, mechanical damage, operation at the limits of the specification or other reasons.

Transportation and handling

- The electrical terminals must not be used for grabbing or suspending the capacitor during transportation and handling.
- Do not handle the capacitor before it is discharged.
- Handle capacitors carefully, because they may still be charged even after disconnection due to faulty discharging devices.
- Protect the capacitor properly against over current and short circuit.
- Failure to follow cautions may result, worst case, in premature failures, bursting and fire.

Fixing

- The threaded screws 4xM12 in the bottom of the capacitor must be used for fixing.

Storage and operating conditions

Capacitors must never be stored outside the specified temperature and humidity ranges.

Capacitors may not be stored in corrosive atmospheres, particularly not when chlorides, sulfides, acids, alkalis, salts, organic solvents, or similar substances are present.

Please read the [Operating and safety instructions](#) before use.

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Important notes

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