

# Power Factor Correction Capacitors Type LKT



**Heavy Duty Capacitors**

Overcurrent up to **2.7 times** rated current

Inrush current up to **450 times** rated current

Mean Life expectancy: **200,000 h.**

Up to **100,000** annual switching operations

**NEW**



## // Features that matter:

- Overcurrent up to 2.2 times rated current
- Inrush current up to 300 times rated current
- Self-healing type, segmented film technology plus overpressure disconnecter
- Environment-friendly, dry type
- CO<sub>2</sub> emission reduction
- Safes energy costs

**It's all about saving your money!**

# Power Factor Correction Capacitors

## Type LKT

### General Remarks

**FRAKO** Power Factor Correction Capacitors are produced in unique advanced technology and incorporate a triple safety feature. **FRAKO** is the first capacitor manufacturer who succeeded to combine self-healing capacitor film with segmented film and overpressure disconnection. This manufacturing technique guarantees significantly improved operational reliability of capacitors on power factor correction. We reserve the right to make alterations which are based on newly acquired knowledge or which contribute to an improvement in our products.

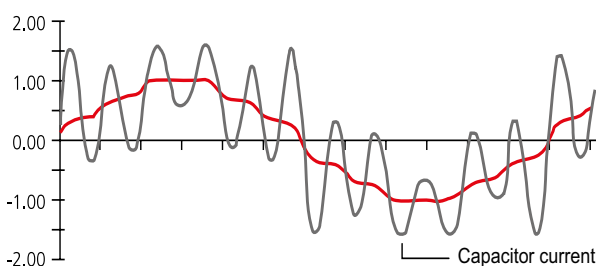
### Technical Remarks

For the operation of Power Factor Correction Capacitors three aspects are of utmost importance:

- High overload capacity
- Long life expectancy
- Safe reaction at overload

### Overload Capacity

In networks where the pollution with harmonics is permanently increasing, surplus loads in capacitors have to be reckoned with. Apart from the higher voltage load it is especially the higher effective current during network resonances, that can considerably further stress the capacitors:



If, for example, the 11th harmonic is present with 8% of the rated network voltage, the r.m.s. value of the rated voltage is only increased by some 0.3%, but the current in the capacitors will exceed its rated value by 33%. It becomes clear that the ability of a capacitor to withstand excessive current is significantly greater than the ability to withstand excessive voltage.

Therefore **FRAKO** designs its capacitors as follows:

- Max. overcurrent up to 2.2 times - for the Heavy Duty version: up to 2.7 times - rated current
- Max. inrush current up to 300 times - for the Heavy Duty version: up to 450 times - rated current

### Life Expectancy

The use of thoroughly tested material as well as careful processing ensures quality and a long life expectancy of the products. **FRAKO** produces its capacitors according to own specifications, which surpass by far the requirements of EN 60831-1/2. Quality tests following each single manufacturing step, verify an outstanding manufacturing quality. Combined with a unique capacitor manufacturing technology, **FRAKO** achieves a world-wide leading durability.

For example, the consistently low power loss over many years is achieved by using a special mineral filler and stabilizer which can avoid permanent partial discharges within the dielectric. Vacuum drying and temperature storage over several days avoid oxygen inclusion, which would accelerate the aging process of a capacitor. This means an extra effort in our production which, however, pays-off with a longer life expectancy.

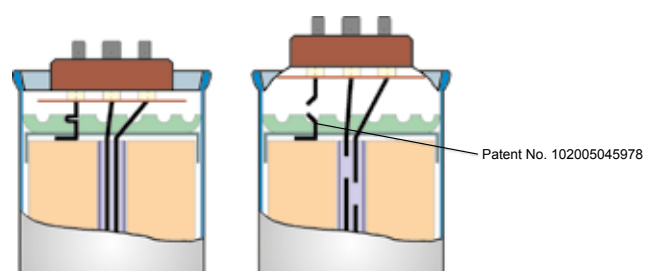
### Safety Features

**FRAKO** Power Factor Correction Capacitors operate with triple safety:

- Self-healing at over-voltage
- Reliable in operation because of segmented film
- An overpressure disconnector disconnects the capacitors from the mains at the end of their lifetime or at dangerous overload.



Self-healing segmented capacitor film



The principle of the overpressure disconnector

# Power Factor Correction Capacitors

## Type LKT



To verify the correct functioning of the integrated safety systems, **FRAKO** regularly draws sample capacitors from the production line. A constantly outstanding quality can be achieved and maintained only this way.

### Voltage Load Capacity

**FRAKO** Power Factor Correction Capacitors have a load capacity in accordance with EN 60831-1 and -2 as well as IEC 831-1 and -2:

Rated voltage [V] 50 Hz	300	400	440	480	525	615
<b>Over-voltage [V]</b>						
8 hours daily	330	440	484	528	578	677
30 min. daily	345	460	506	552	604	707
5 min. daily	360	480	528	576	630	738
1 min. daily	390	520	572	624	683	800

### Application

**FRAKO** manufactures four series of Power Factor Correction Capacitors: Basic, Standard, Premium and **NEW! Heavy Duty**.

We recommend Basic Capacitors for networks with low harmonic content and normal ambient temperature. Standard Capacitors are recommended for networks with higher harmonic levels and/or high ambient temperature. Premium Capacitors should be used for demanding networks (i.e. networks with very high harmonic levels and/or very high ambient temperature). Heavy Duty Capacitors are recommended for extreme demanding network- and ambient conditions. All four series of capacitors are of excellent **FRAKO** quality. **FRAKO** holds the Management System Certificate **ISO9001** and the Environmental Management System **ISO14001**.

### Mechanical Construction

Cylindrical aluminium case with mounting stud M12×12, low loss self-healing dielectric made from segmented metallized polypropylene film. Filled with a PCB-free, flame inhibiting, mineral filler with adhesive stabilizer and integrated mechanical overpressure disconnecter. Permanently connected external discharge resistors at the terminals. The connecting terminal, which is available as an accessory, protects against direct contact of the fast-on terminals and meets the protection class IP 20.

### Design

**FRAKO** Power Factor Correction Capacitors are available as three-phase capacitors in four versions: Basic, Standard, Premium and **NEW! Heavy Duty**. The single-

phase capacitors are available as Standard version.

### Rating

0.8-37.2 kvar; 230-800 V; 50 or 60 Hz (other Voltages on request!)

### Capacitance and Rating Tolerance

± 5%

### Power Loss

Approx. 0.5 Watt/kvar measured at the connecting terminal (including discharge resistors).

Aprox. 0.2 Watt/kvar dielectric power loss measured at the capacitor coils.

### Temperatur Class

up to - 40 °C; + 65 °C depending on design

### Discharging

According to EN 60831, every power capacitor must have a discharge device which guarantees a discharge to 75V within three minutes. **FRAKO** capacitors have integrated discharge resistors which guarantee a discharge to 50V within one minute.

### Accessories for FRAKO Power Factor Correction Capacitors

All capacitors can be equipped with a patented connecting terminal in tension spring method against surcharge. This connecting terminal ensures a fast, perfect and permanent electrical contact of the connecting wires. All capacitors up to diameter 70 mm can be equipped with a plastic cap and rubber sleeve to cover the connections.

Article-No.	Description	Type
31-08000	Plug-in type connecting terminal for capacitors with Ø60 and Ø70 mm, 3-phase	AKD 25/3
31-08002	Plug-in type connecting terminal for capacitors with Ø60 and Ø70 mm, single-phase	AKD 25/2
31-08003	Plug-in type connecting terminal for capacitors with Ø85 mm, 3-phase	AKD 30/3
69-00352	Plastic caps for LKT with Ø60 mm	LKT 60
69-00350	Plastic caps for LKT with Ø70 mm	LKT 70
69-00353	Rubber sleeve	LKT

# Power Factor Correction Capacitors

## Type LKT



### Technical Data

Technical Data	Basic Capacitor	Standard Capacitor	Premium Capacitor		Heavy Duty Capacitor
			operated with DL-specification	operated with DP-specification*	
Type	LKT...-DB	LKT...-DP/EP	LKT...-DL	LKT...-DL	LKT...-HD
Rated reactive power	1.66...36 kvar	0.8...37.2 kvar	1.4...24 kvar	1.4...29 kvar	3.3...21.6 kvar
Rated voltage	230...525V	230...800V	230...525V	230...615V	230...525V
Rated frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Max. overcurrent (permanently)	$1.5 \times I_N$ (at rated voltage, 50 Hz)	$1.8 \times I_N$ (at rated voltage, 50 Hz)	$2.2 \times I_N$ (at rated voltage, 50 Hz)	$2.0 \times I_N$ (at rated voltage, 50 Hz)	$2.7 \times I_N$ (at rated voltage, 50 Hz)
Max. inrush current	$200 \times I_N$ (at rated voltage, 50 Hz)	$250 \times I_N$ (at rated voltage, 50 Hz)	$300 \times I_N$ (at rated voltage, 50 Hz)	$300 \times I_N$ (at rated voltage, 50 Hz)	$450 \times I_N$ (at rated voltage, 50 Hz)
Temperature class	-25°C / D	-40 / +60°C continuous	-40 / +65°C continuous	-40 / +60°C continuous	-40 / +65°C continuous
Min. / max. temperature	-25°C / +55°C	-40°C / +60°C	-40°C / +65°C	-40°C / +60°C	-40°C / +65°C
Max. case temperature	70°C	75°C	78°C	75°C	78°C
Dielectric power loss	0.2 W/kvar	0.2 W/kvar	0.2 W/kvar	0.2 W/kvar	0.2 W/kvar
Test voltage terminal / terminal	$2.15 \times U_N$ for 2s $1.85 \times U_N$ for 18s	$2.15 \times U_N$ for 2s $1.85 \times U_N$ for 18s	$2.15 \times U_N$ for 2s $1.85 \times U_N$ for 18s	$2.15 \times U_N$ for 2s $1.85 \times U_N$ for 18s	$2.15 \times U_N$ for 2sec. $1.85 \times U_N$ for 18sec.
Test voltage terminal / case	3,900 V, 2s	3,900 V, 2s	3,900 V, 2s	3,900 V, 2s	3,900 V, 2s
Isolation level	3/8 kV	3/8 kV	3/8 kV	3/8 kV	3/8 kV
Mean life expectancy	100,000 h.	130,000 h.	170,000 h.	130,000 h.	200,000 h.
Max. humidity	95%	95%	95%	95%	95%
Max. altitude	4,000 m	4,000 m	4,000 m	4,000 m	4,000 m
Number of annual switching operations	20,000	40,000	60,000	60,000	100,000
Discharging level in 60 s	≤ 50 V	≤ 50 V	≤ 50 V	≤ 50 V	≤ 50 V
Recommended for	Networks with low harmonic content and normal ambient temperature	Networks with higher harmonic levels and/or high ambient temperature	Demanding networks (i.e. networks with very high harmonic levels and/or very high ambient temperature)	Networks with higher harmonic levels and/or high ambient temperature	Extreme demanding network- and ambient conditions

Generally, DL-type capacitors can also be operated at higher voltages with the DP-type specification.

Please note that the DP values in the chart are marked with \*.

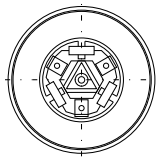
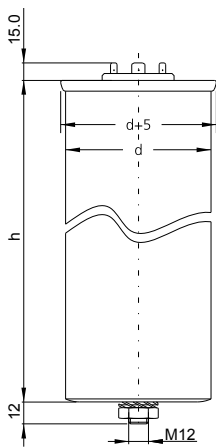
Temperature class	admissible ambient temperature		
	maximum	mean over 24 h	highest mean over 1 year
D	55°C	45°C	35°C

# Power Factor Correction Capacitors

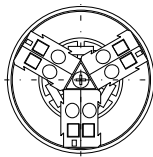
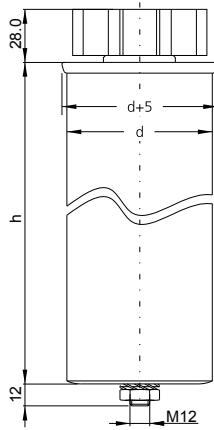
## Type LKT



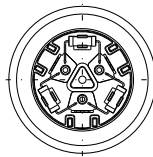
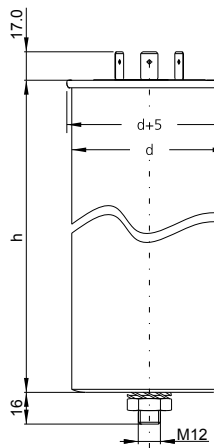
### Dimensions



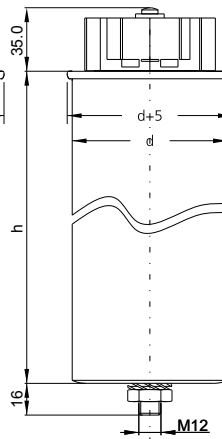
Capacitors with  
d = 60/70 mm  
for connection with  
flat cable plug  
6.3×0.8 mm



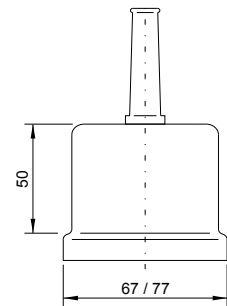
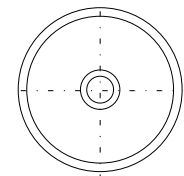
Capacitors with  
d = 60/70 mm  
Spring tension  
terminal  
AKD 25/3  
2×6 mm<sup>2</sup>  
Art.-No. 31-08000



Capacitors with  
d = 85 mm  
for connection with  
flat cable plug  
9.5×1.2 mm



Capacitors with  
d = 85 mm  
Spring tension terminal  
AKD 30/3  
16 mm<sup>2</sup>  
Art.-No. 31-08003



Plastic cap and rubber sleeve  
LKK 60/70 for capacitors with:  
d = 60 mm (Art.No. 69-00352) /  
d = 70 mm (Art.No. 69-00350)  
(not available for capacitors with  
d = 85 mm)  
rubber sleeve  
Art.-No. 69-00353

# Power Factor Correction Capacitors

Type LKT...-DB for 50Hz



## Basic Capacitors

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 50Hz								
			230V	250V	300V	400V	415V	440V	460V	480V	525V
Three-phase capacitors											
LKT 5-400-DB	60 × 150	31-10414	1.66	2.0	2.8	5.0					
LKT 6.25-400-DB	60 × 150	31-10400	2.1	2.4	3.5	6.25					
LKT 7.5-400-DB	60 × 150	31-10415	2.5	2.9	4.2	7.5					
LKT 10-400-DB	60 × 225	31-10416	3.33	3.9	5.6	10.0					
LKT 12.5-400-DB	60 × 225	31-10401	4.17	4.9	7.0	12.5					
LKT 15-400-DB	70 × 225	31-10417	5.0	5.9	8.4	15.0					
LKT 20-400-DB	85 × 215	31-10418	6.66	7.8	11.3	20.0					
LKT 25-400-DB	85 × 278	31-10402	8.33	9.8	14.1	25.0					
LKT 30-400-DB	85 × 320	31-10403	9.9	11.7	16.9	30.0					
LKT 6.25-440-DB	60 × 150	31-10404	1.7	2.0	2.9	5.2	5.6	6.25			
LKT 10-440-DB	60 × 225	31-10412	2.7	3.2	4.7	8.33	8.9	10.0			
LKT 12.5-440-DB	60 × 225	31-10405	3.4	4.0	5.8	10.3	11.1	12.5			
LKT 15-440-DB	70 × 225	31-10406	4.1	4.8	7.0	12.4	13.3	15.0			
LKT 20-440-DB	85 × 278	31-10413	5.5	6.5	9.3	16.5	17.8	20.0			
LKT 25-440-DB	85 × 278	31-10407	6.8	8.1	11.6	20.7	22.2	25.0			
LKT 30-440-DB	85 × 278	31-10408	8.2	9.7	14.0	24.8	26.7	30.0			
LKT 6.25-525-DB	60 × 225	31-10409				3.6	3.9	4.4	4.8	5.2	6.25
LKT 12.5-525-DB	70 × 225	31-10410				7.3	7.8	8.8	9.6	10.4	12.5
LKT 15-525-DB	70 × 225	31-10419				8.7	9.4	10.5	11.5	12.5	15.0
LKT 17.2-525-DB	70 × 225	31-10434				10.0	10.8	12.1	13.2	14.4	17.2
LKT 20-525-DB	70 × 265	31-10420				11.6	12.5	14.1	15.4	16.7	20.0
LKT 25-525-DB	85 × 278	31-10411				14.5	15.6	17.6	19.2	20.9	25.0

# Power Factor Correction Capacitors

Type LKT...-DB for 60 Hz



## Basic Capacitors

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 60 Hz								
			230 V	250 V	300 V	400 V	415 V	440 V	460 V	480 V	525 V
Three-phase capacitors											
LKT 5-400-DB	60 × 150	31-10414	2.0	2.3	3.33	6.0					
LKT 6.25-400-DB	60 × 150	31-10400	2.5	2.9	4.2	7.5					
LKT 7.5-400-DB	60 × 150	31-10415	3.0	3.5	5.1	9.0					
LKT 10-400-DB	60 × 225	31-10416	4.0	4.7	6.8	12.0					
LKT 12.5-400-DB	60 × 225	31-10401	5.0	5.9	8.4	15.0					
LKT 15-400-DB	70 × 225	31-10417	6.0	7.0	10.1	18.0					
LKT 20-400-DB	85 × 215	31-10418	7.9	9.4	13.5	24.0					
LKT 25-400-DB	85 × 278	31-10402	9.9	11.7	16.9	30.0					
LKT 30-400-DB	85 × 320	31-10403	11.9	14.1	20.3	36.0					
LKT 6.25-440-DB	60 × 150	31-10404	2.0	2.4	3.5	6.2	6.7	7.5			
LKT 10-440-DB	60 × 225	31-10412	3.33	3.9	5.6	9.9	10.7	12.0			
LKT 12.5-440-DB	60 × 225	31-10405	4.1	4.8	7.0	12.4	13.3	15.0			
LKT 15-440-DB	70 × 225	31-10406	4.9	5.8	8.4	14.9	16.0	18.0			
LKT 20-440-DB	85 × 278	31-10413	6.66	7.8	11.2	19.8	21.4	24.0			
LKT 25-440-DB	85 × 278	31-10407	8.2	9.7	14.0	24.8	26.7	30.0			
LKT 30-440-DB	85 × 278	31-10408	9.8	11.6	16.7	29.8	32.0	36.0			
LKT 6.25-525-DB	60 × 225	31-10409				4.4	4.7	5.3	5.8	6.3	7.5
LKT 12.5-525-DB	70 × 225	31-10410				8.7	9.4	10.5	11.5	12.5	15.0
LKT 15-525-DB	70 × 225	31-10419				10.5	11.3	12.6	13.8	15.1	18.0
LKT 17.2-525-DB	70 × 225	31-10434				12.0	12.9	14.5	15.9	17.3	20.6
LKT 20-525-DB	70 × 265	31-10420				13.9	15.0	16.9	18.4	20.1	24.0
LKT 25-525-DB	85 × 278	31-10411				17.4	18.8	21.1	23.0	25.1	30.0



# Power Factor Correction Capacitors

Type LKT...-DP for 50Hz



## Standard Capacitors (three-phase)

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 50Hz								
			230V	250V	300V	400V	415V	440V	460V	480V	525V
Three-phase capacitors											
LKT 7.1-300-DP	60 × 225	31-10523	4.17	4.9	7.1						
LKT 14.2-300-DP	70 × 265	31-10524	8.33	9.9	14.2						
LKT 21.3-300-DP	85 × 278	31-10525	12.5	14.8	21.3						
LKT 5-400-DP	60 × 150	31-10500	1.66	2.0	2.8	5.0					
LKT 10-400-DP	60 × 225	31-10501	3.33	3.9	5.6	10.0					
LKT 12.5-400-DP	70 × 225	31-10502	4.17	4.9	7.0	12.5					
LKT 15-400-DP	70 × 265	31-10503	5.0	5.9	8.4	15.0					
LKT 20-400-DP	85 × 278	31-10504	6.66	7.8	11.3	20.0					
LKT 25-400-DP	85 × 278	31-10505	8.33	9.8	14.1	25.0					
LKT 3.8-440-DP	60 × 150	31-10534	1.0	1.22	1.8	3.1	3.4	3.8			
LKT 10-440-DP	60 × 225	31-10508	2.7	3.2	4.7	8.33	8.9	10.0			
LKT 12.5-440-DP	70 × 225	31-10507	3.4	4.0	5.8	10.3	11.1	12.5			
LKT 15-440-DP	70 × 225	31-10506	4.1	4.8	7.0	12.4	13.3	15.0			
LKT 20-440-DP	85 × 278	31-10512	5.5	6.5	9.3	16.5	17.8	20.0			
LKT 25-440-DP	85 × 278	31-10510	6.8	8.1	11.6	20.7	22.2	25.0			
LKT 28.2-440-DP	85 × 320	31-10535	7.7	9.1	13.1	23.3	25.0	28.2			
LKT 30-440-DP	85 × 320	31-10509	8.2	9.7	14.0	24.8	26.7	30.0			
LKT 15.5-480-DP	70 × 225	31-10513	3.6	4.3	6.1	10.8	11.6	13.1	14.2	15.5	
LKT 18-480-DP	70 × 265	31-10522	4.17	4.9	7.0	12.5	13.5	15.1	16.5	18.0	
LKT 31.0-480-DP	85 × 320	31-10559	7.1	8.4	12.1	21.5	23.2	26.1	28.5	31.0	
LKT 10-525-DP	70 × 225	31-10517				5.8	6.3	7.0	7.7	8.33	10.0
LKT 12.5-525-DP	70 × 225	31-10516				7.3	7.8	8.8	9.6	10.4	12.5
LKT 15-525-DP	70 × 265	31-10520				8.7	9.4	10.5	11.5	12.5	15.0
LKT 20-525-DP	85 × 278	31-10521				11.6	12.5	14.1	15.4	16.7	20.0
LKT 25-525-DP	85 × 278	31-10519				14.5	15.6	17.6	19.2	20.9	25.0



# Power Factor Correction Capacitors

Type LKT...-DP for 60Hz



## Standard Capacitors (three-phase)

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 60Hz								
			230V	250V	300V	400V	415V	440V	460V	480V	525V
Three-phase capacitors											
LKT 7.1-300-DP	60 × 225	31-10523	5.0	5.9	8.5						
LKT 14.2-300-DP	70 × 265	31-10524	10.0	11.8	17.0						
LKT 21.3-300-DP	85 × 278	31-10525	15.0	17.7	25.5						
LKT 5-400-DP	60 × 150	31-10500	2.0	2.3	3.33	6.0					
LKT 10-400-DP	60 × 225	31-10501	4.0	4.7	6.8	12.0					
LKT 12.5-400-DP	70 × 225	31-10502	5.0	5.9	8.4	15.0					
LKT 15-400-DP	70 × 265	31-10503	6.0	7.0	10.1	18.0					
LKT 20-400-DP	85 × 278	31-10504	8.0	9.4	13.5	24.0					
LKT 25-400-DP	85 × 278	31-10505	9.9	11.7	16.9	30.0					
LKT 3.8-440-DP	60 × 150	31-10534	1.25	1.5	2.1	3.8	4.1	4.6			
LKT 10-440-DP	60 × 225	31-10508	3.33	3.9	5.6	9.9	10.7	12.0			
LKT 12.5-440-DP	70 × 225	31-10507	4.1	4.8	7.0	12.4	13.3	15.0			
LKT 15-440-DP	70 × 225	31-10506	4.9	5.8	8.33	14.9	16.0	18.0			
LKT 20-440-DP	85 × 278	31-10512	6.66	7.8	11.2	19.8	21.4	24.0			
LKT 25-440-DP	85 × 278	31-10510	8.2	9.7	14.0	24.8	26.7	30.0			
LKT 28.2-440-DP	85 × 320	31-10535	9.2	10.9	15.7	27.9	30.0	33.8			
LKT 30-440-DP	85 × 320	31-10509	9.8	11.6	16.7	29.8	32.0	36.0			
LKT 15.5-480-DP	70 × 225	31-10513	4.3	5.1	7.3	13.0	13.9	15.7	17.1	18.6	
LKT 18-480-DP	70 × 265	31-10522	5.0	5.9	8.4	15.0	16.2	18.2	19.8	21.6	
LKT 31.0-480-DP	85 × 320	31-10559	8.5	10.1	14.5	25.8	27.8	31.3	34.2	37.2	
LKT 10-525-DP	70 × 225	31-10517				7.0	7.5	8.33	9.2	10.0	12.0
LKT 12.5-525-DP	70 × 225	31-10516				8.7	9.4	10.5	11.5	12.5	15.0
LKT 15-525-DP	70 × 265	31-10520				10.4	11.3	12.6	13.8	15.0	18.0
LKT 20-525-DP	85 × 278	31-10521				13.9	15.0	16.9	18.4	20.1	24.0
LKT 25-525-DP	85 × 278	31-10519				17.4	18.8	21.1	23.0	25.1	30.0

# Power Factor Correction Capacitors

Type LKT...-DP for 50Hz and 60Hz



## Standard Capacitors (three-phase)

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 50 Hz							
			525 V	570 V	600 V	615 V	690 V	750 V	760 V	800 V
Three-phase capacitors										
LKT 5-690-DP	60 × 225	31-10560	2.9	3.4	3.8	4.0	5.0			
LKT 10-690-DP	70 × 225	31-10561	5.8	6.8	7.6	7.9	10.0			
LKT 12.5-690-DP	70 × 265	31-10562	7.2	8.5	9.5	9.9	12.5			
LKT 15-690-DP	70 × 265	31-10563	8.7	10.2	11.3	11.9	15.0			
LKT 20-690-DP	85 × 278	31-10564	11.6	13.7	15.1	15.9	20.0			
LKT 25-690-DP	85 × 278	31-10565	14.5	17.1	18.9	19.9	25.0			
LKT 28.2-760-DP	85 × 320	31-10569			17.6	18.5	23.2	27.5	28.2	
LKT 6.7-800-DP	60 × 225	31-10570			3.8	4.0	5.0	5.9		6.7
LKT 10.5-800-DP	70 × 225	31-10571			5.9	6.2	7.8	9.2		10.5
LKT 13.3-800-DP	85 × 215	31-10572			7.5	7.9	9.9	11.7		13.3
LKT 21.0-800-DP	85 × 278	31-10573			11.8	12.4	15.6	18.5		21.0
LKT 26.7-800-DP	85 × 320	31-10574			15.0	15.8	19.9	23.5		26.7

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 60 Hz							
			525 V	570 V	600 V	615 V	690 V	750 V	760 V	800 V
Three-phase capacitors										
LKT 5-690-DP	60 × 225	31-10560	3.5	4.1	4.5	4.8	6.0			
LKT 10-690-DP	70 × 225	31-10561	7.0	8.2	9.1	9.5	12.0			
LKT 12.5-690-DP	70 × 265	31-10562	8.7	10.2	11.3	11.9	15.0			
LKT 15-690-DP	70 × 265	31-10563	10.4	12.3	13.6	14.3	18.0			
LKT 20-690-DP	85 × 278	31-10564	13.9	16.4	18.2	19.1	24.0			
LKT 25-690-DP	85 × 278	31-10565	17.4	20.5	22.7	23.8	30.0			
LKT 28.2-760-DP	85 × 320	31-10569			21.1	22.2	27.9	33.0	33.8	
LKT 6.7-800-DP	60 × 225	31-10570			4.5	4.8	6.0	7.1		8.0
LKT 10.5-800-DP	70 × 225	31-10571			7.1	7.5	9.4	11.1		12.6
LKT 13.3-800-DP	85 × 215	31-10572			9.0	9.4	11.9	14.0		16.0
LKT 21.0-800-DP	85 × 278	31-10573			14.2	14.9	18.8	22.2		25.2
LKT 26.7-800-DP	85 × 320	31-10574			18.0	18.9	23.8	28.2		32.0

# Power Factor Correction Capacitors

## Type LKT...-EP for 50 Hz and 60 Hz



### Standard Capacitors (single-phase)

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 50 Hz								
			230 V	250 V	300 V	400 V	415 V	440 V	460 V	480 V	525 V
Single-phase capacitors											
LKT 3.3-440-EP	60 × 90	31-10526	0.9			2.8	3.0	3.33			
LKT 4.17-440-EP	60 × 138	31-10527	1.1			3.4	3.7	4.17			
LKT 5-440-EP	60 × 138	31-10528	1.4			4.1	4.4	5.0			
LKT 9.4-440-EP	70 × 138	31-10511	2.6			7.8	8.4	9.4			
LKT 2.4-480-EP	60 × 90	31-10529				1.70	1.80	2.0		2.4	
LKT 3.33-480-EP	60 × 90	31-10530				2.3	2.5	2.8		3.33	
LKT 3.6-480-EP	60 × 138	31-10531	0.8			2.5	2.7	3.0		3.6	
LKT 4.8-480-EP	60 × 138	31-10515	1.1			3.33	3.6	4.0		4.8	
LKT 6-480-EP	60 × 138	31-10514	1.4			4.17	4.5	5.0		6.0	
LKT 2.8-525-EP	60 × 90	31-10532				1.6		2.0		2.3	2.8
LKT 3.33-525-EP	60 × 138	31-10533				1.9	2.1	2.3	2.6	2.8	3.33
LKT 8.33-525-EP	70 × 138	31-10518				4.8	5.2	5.9	6.4	7.0	8.33

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 60 Hz								
			230 V	250 V	300 V	400 V	415 V	440 V	460 V	480 V	525 V
Single-phase capacitors											
LKT 3.3-440-EP	60 × 90	31-10526	1.1			3.3	3.6	4.0			
LKT 4.17-440-EP	60 × 138	31-10527	1.4			4.1	4.5	5.0			
LKT 5-440-EP	60 × 138	31-10528	1.6			5.0	5.33	6.0			
LKT 9.4-440-EP	70 × 138	31-10511	3.1			9.3	10.0	11.3			
LKT 2.4-480-EP	60 × 90	31-10529				2.0	2.15	2.4		2.9	
LKT 3.33-480-EP	60 × 90	31-10530				2.8	3.0	3.4		4.0	
LKT 3.6-480-EP	60 × 138	31-10531	1.0			3.0	3.2	3.6		4.3	
LKT 4.8-480-EP	60 × 138	31-10515	1.3			4.0	4.3	4.8		5.8	
LKT 6-480-EP	60 × 138	31-10514	1.66			5.0	5.4	6.0		7.2	
LKT 2.8-525-EP	60 × 90	31-10532				1.9		2.4		2.8	3.4
LKT 3.33-525-EP	60 × 138	31-10533				2.3	2.5	2.8	3.1	3.3	4.0
LKT 8.33-525-EP	70 × 138	31-10518				5.8	6.3	7.0	7.7	8.33	10.0

# Power Factor Correction Capacitors

## Type LKT...-DL for 50Hz



### Premium Capacitors

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 50Hz										
			230V	250V	300V	400V	415V	440V	460V	480V	525V	570V	615V
Three-phase capacitors													
LKT 5-400-DL	60 × 225	31-10600	1.66	2.0	2.8	5.0	5.4*	6.1*					
LKT 6.25-400-DL	60 × 225	31-10601	2.1	2.4	3.5	6.25	6.7*	7.6*					
LKT 9.3-400-DL	70 × 225	31-10602	3.0	3.6	5.2	9.3	10.0*	11.3*					
LKT 10-400-DL	70 × 225	31-10603	3.33	3.9	5.6	10.0	10.8*	12.1*					
LKT 11.7-400-DL	70 × 225	31-10604	3.9	4.6	6.66	11.7	12.6*	14.2*					
LKT 12.5-400-DL	70 × 225	31-10605	4.17	4.9	7.0	12.5	13.5*	15.1*					
LKT 20-400-DL	85 × 278	31-10606	6.66	7.8	11.3	20.0	21.5*	24.2*					
LKT 5-440-DL	60 × 225	31-10607	1.4	1.6	2.3	4.17	4.5	5.0	5.5*	6.0*			
LKT 7.6-440-DL	60 × 225	31-10608	2.1	2.5	3.5	6.25	6.8	7.6	8.33*	9.0*			
LKT 9.1-440-DL	60 × 225	31-10609	2.5	2.9	4.2	7.5	8.1	9.1	10.0*	10.8*			
LKT 12.1-440-DL	70 × 225	31-10610	3.33	3.9	5.6	10.0	10.8	12.1	13.2*	14.4*			
LKT 17.6-440-DL	85 × 278	31-10612	4.8	5.7	8.2	14.5	15.6	17.6	19.2*	21.0*			
LKT 3.6-480-DL	60 × 150	31-10613				2.5	2.7	3.0	3.33	3.6	4.3*		
LKT 4.5-480-DL	60 × 150	31-10614				3.1	3.4	3.8	4.1	4.5	5.4*		
LKT 7.2-480-DL	60 × 225	31-10615				5.0	5.4	6.0	6.66	7.2	8.6*		
LKT 7.8-480-DL	60 × 225	31-10616				5.4	5.8	6.5	7.2	7.8	9.3*		
LKT 10.4-480-DL	70 × 225	31-10617				7.3	7.8	8.8	9.6	10.4	12.4*		
LKT 12.5-480-DL	70 × 265	31-10618				8.7	9.4	10.5	11.5	12.5	15.0*		
LKT 15.5-480-DL	85 × 215	31-10627				10.8	11.6	13.0	14.2	15.5	18.5*		
LKT 4.17-525-DL	60 × 225	31-10619						2.9	3.2	3.5	4.17	4.9*	5.7*
LKT 5.9-525-DL	60 × 225	31-10620						4.17	4.5	5.0	5.9	7.0*	8.1*
LKT 7.7-525-DL	70 × 225	31-10621						5.4	5.91	6.5	7.7	9.1*	10.6*
LKT 8.33-525-DL	70 × 225	31-10622						5.8	6.40	7.0	8.33	9.8*	11.4*

Generally, DL-type capacitors can also be operated at higher voltages with the DP-type specification.

Please note that the DP values in the chart are marked with \*.

# Power Factor Correction Capacitors

## Type LKT...-DL for 60 Hz



### Premium Capacitors

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 60 Hz										
			230 V	250 V	300 V	400 V	415 V	440 V	460 V	480 V	525 V	570 V	615 V
Three-phase capacitors													
LKT 5-400-DL	60 × 225	31-10600	2.0	2.3	3.4	6.0	6.5*	7.3*					
LKT 6.25-400-DL	60 × 225	31-10601	2.5	2.9	4.2	7.5	8.1*	9.1*					
LKT 9.3-400-DL	70 × 225	31-10602	3.7	4.4	6.3	11.1	12.0*	13.5*					
LKT 10-400-DL	70 × 225	31-10603	4.0	4.7	6.8	12.0	12.9*	14.5*					
LKT 11.7-400-DL	70 × 225	31-10604	4.6	5.5	7.9	14.0	15.1*	17.0*					
LKT 12.5-400-DL	70 × 225	31-10605	5.0	5.9	8.4	15.0	16.2*	18.2*					
LKT 20-400-DL	85 × 278	31-10606	7.9	9.4	13.5	24.0	25.8*	29.0*					
LKT 5-440-DL	60 × 225	31-10607	1.66	1.9	2.8	5.0	5.4	6.0	6.6*	7.1*			
LKT 7.6-440-DL	60 × 225	31-10608	2.5	2.9	4.2	7.5	8.1	9.1	10.0*	10.9*			
LKT 9.1-440-DL	60 × 225	31-10609	3.0	3.5	5.1	9.0	9.7	10.9	11.9*	13.0*			
LKT 12.1-440-DL	70 × 225	31-10610	4.0	4.7	6.8	12.0	12.9	14.5	15.9*	17.3*			
LKT 17.6-440-DL	85 × 278	31-10612	5.8	6.8	9.8	17.4	18.8	21.1	23.1*	25.1*			
LKT 3.6-480-DL	60 × 150	31-10613				3.0	3.2	3.6	4.0	4.3	5.2*		
LKT 4.5-480-DL	60 × 150	31-10614				3.8	4.0	4.6	5.0	5.4	6.5*		
LKT 7.2-480-DL	60 × 225	31-10615				6.0	6.5	7.2	7.9	8.6	10.3*		
LKT 7.8-480-DL	60 × 225	31-10616				6.5	7.0	7.9	8.6	9.3	11.2*		
LKT 10.4-480-DL	70 × 225	31-10617				8.7	9.3	10.5	11.5	12.5	14.9*		
LKT 12.5-480-DL	70 × 265	31-10618				10.4	11.2	12.6	13.8	15.0	17.9*		
LKT 15.5-480-DL	85 × 215	31-10627				12.9	13.9	15.6	17.1	18.6	22.3*		
LKT 4.17-525-DL	60 × 225	31-10619						3.5	3.8	4.2	5.0	5.9*	6.9*
LKT 5.9-525-DL	60 × 225	31-10620						4.97	5.5	5.9	7.1	8.4*	9.7*
LKT 7.7-525-DL	70 × 225	31-10621						6.5	7.1	7.8	9.3	10.9*	12.7*
LKT 8.33-525-DL	70 × 225	31-10622						7.0	7.6	8.33	10.0	11.8*	13.7*

Generally, DL-type capacitors can also be operated at higher voltages with the DP-type specification.

Please note that the DP values in the chart are marked with \*.

# Power Factor Correction Capacitors

Type LKT...-HD for 50Hz and 60Hz



## Heavy Duty Capacitors

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 50 Hz									
			230V	250V	300V	400V	415V	440V	460V	480V	500V	525V
Three-phase capacitors												
LKT 16.8-480-HD	85 × 215	31-10580	3.9	4.6	6.6	11.7	12.6	14.1	15.4	16.8		
LKT 18-480-HD	85 × 215	31-10581	4.1	4.9	7.0	12.5	13.5	15.1	16.5	18.0		
LKT 15.6-500-HD	85 × 215	31-10582	3.3	3.9	5.6	10.0	10.8	12.1	13.2	14.4	15.6	
LKT 16.1-500-HD	85 × 215	31-10583	3.4	4.0	5.8	10.3	11.1	12.5	13.6	14.8	16.1	
LKT 16.8-500-HD	85 × 215	31-10584	3.6	4.2	6.1	10.8	11.6	13.0	14.2	15.5	16.8	
LKT 18-525-HD	85 × 215	31-10585				10.5	11.3	12.6	13.8	15.1		18.0

Capacitor Type	Dimensions mm	Article-No.	Rated Reactive Power in kvar at Rated Voltage 60 Hz									
			230V	250V	300V	400V	415V	440V	460V	480V	500V	525V
Three-phase capacitors												
LKT 16.8-480-HD	85 × 215	31-10580	4.6	5.5	7.9	14.0	15.1	16.9	18.5	20.2		
LKT 18-480-HD	85 × 215	31-10581	5.0	5.9	8.4	15.0	16.2	18.2	19.8	21.6		
LKT 15.6-500-HD	85 × 215	31-10582	4.0	4.7	6.7	12.0	12.9	14.5	15.8	17.3	18.7	
LKT 16.1-500-HD	85 × 215	31-10583	4.1	4.8	7.0	12.4	13.3	15.0	16.4	17.8	19.3	
LKT 16.8-500-HD	85 × 215	31-10584	4.3	5.0	7.3	12.9	13.9	15.6	17.1	18.6	20.2	
LKT 18-525-HD	85 × 215	31-10585				12.5	13.5	15.2	16.6	18.1		21.6

## Heavy Duty Capacitors

- Overcurrent up to **2.7 times** rated current
- Inrush current up to **450 times** rated current
- Mean Life expectancy: **200,000 h.**
- Up to **100,000** annual switching operations





# Power Factor Correction Capacitors



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