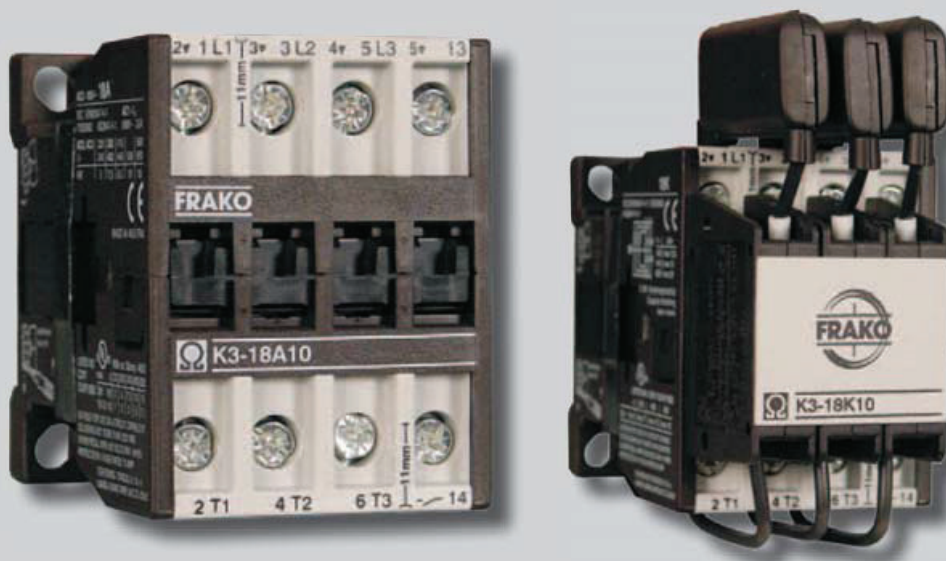


Components

Capacitor Switching Contactors



K3-...K... / K3-...A...

Capacitor Switching Contactors for Power Factor Correction Systems with or without reactors

- Safe switching of capacitor stages with or without reactors
- Bounce-free switching contacts
- Wear-free contact material
- Long service life and a high number of switching operations

// Application Recommendations

Depending on the application appropriate switching devices are needed for the switching of power factor correction capacitors.

During the switching of power capacitors a peak inrush current of 200 times of the rated current can occur. In order to limit the inrush current and to protect switching devices and capacitors, capacitor switching contactors type K3-...K with leading transition contacts are used. To limit the inrush current to $<70 \times I_N$, damping resistors are used.

In case of detuned power factor correction systems the high inrush current is damped by the inductance of the harmonic filter reactor. In those applications capacitor switching contactors type K3-...A are used. Those contactors are made of a special contact material.

// General Technical Data

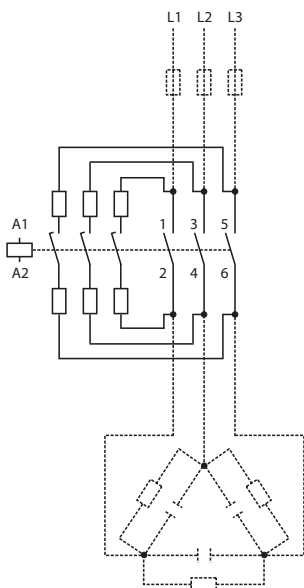
Main Contacts		Type	K3-18	K3-24	K3-32	K3-50	K3-62	K3-74	K3-90	K3-115
Max. ambient temperature										
Operation	open	[°C]	-40 to +60 (+90) ¹⁾							
	enclosed	[°C]	-40 to +40							
Storage		[°C]	-50 to +90							
Short circuit protection										
for contactors without thermal overload relay										
Coordination-type „1“ according to IEC 947-4-1										
Contact welding without hazard of persons										
Max. fuse size	gL (gG)	[A]	100	100	100	160	160	200	200	250
Mechanical life										
AC-operated	S x 10 ⁶		10	10	10	10	10	10	5	5
DC-operated	S x 10 ⁶		10	10	10	10	10	10	5	5
Short time current	10s-current	[A]	144	184	240	360	504	592	680	880
Power loss per pole	at I _g /AC3 400 V	[W]	0.5	0.7	1.3	2.2	3.9	5.5	4.3	6.0

¹⁾ With reduced control voltage range 0.9 up to 1.0 U_n and with reduced rated current I_g/AC1 according to I_g/AC3

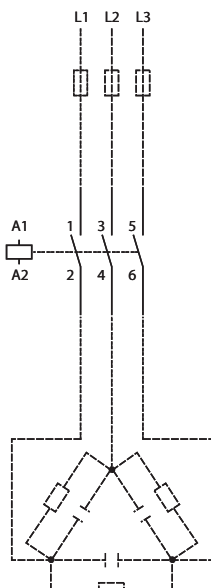
// Mounting Instructions

In the area of capacitor switching contactors only self-extinguishing material and material of low inflammability may be used, as abnormal temperatures in the area of the resistor spirals, in case of a fault, cannot be excluded.

// Typical Circuit Diagram



K3-...K...



K3-...A...

Components

Capacitor Switching Contactors



Technical Data

Article-No.	Type	Rated operational power at 50/60 Hz						Aux. contacts			Weight approx. [kg/pc.]
		Ambient temperature						built-in			
		50 °C			60 °C			NO	NC	add Pcs.	
Coil voltage 220-240 V, 50 Hz 230-264 V, 60 Hz	380 V	415 V	660 V	380 V	415 V	660 V					
	400 V	440 V	690 V	400 V	440 V	690 V					
	[kvar]	[kvar]	[kvar]	[kvar]	[kvar]	[kvar]					

Type K3-...A

89-00288	K3-18ND10 230	12.5	13	20	12.5	13	20	1	-	4 ²⁾	0.3
89-00289	K3-24A00 230	20	22	33	20	22	33	-	-	6 ³⁾	0.5
89-00290	K3-32A00 230	25	27	41	25	27	41	-	-	6 ³⁾	0.5
89-00291	K3-50A00 230	33.3	36	55	33.3	36	55	-	-	6 ³⁾	0.9
89-00292	K3-62A00 230	50	53	82	50	53	82	-	-	6 ³⁾	0.9
89-00293	K3-74A00 230	75 ⁴⁾	75 ⁴⁾	100 ⁴⁾	60	64	100	-	-	6 ³⁾	0.9
89-00358	K3-90A00 230	80	82	120	75	77	120	-	-	9 ⁵⁾	2.2
89-00359	K3-115A00 230	100 ⁶⁾	103 ⁶⁾	148 ⁶⁾	90 ⁶⁾	93 ⁶⁾	148 ⁶⁾	-	-	9 ⁵⁾	2.2

Type K3-...K

89-00280	K3-18NK10 230	0-12.5	0-13	0-20	0-12.5	0-13	0-20	1	-	1 ²⁾	0.4
89-00279	K3-24K00 230	10-20	10.5-22	17-33	10-20	10.5-22	17-33	-	-	3 ³⁾	0.7
89-00278	K3-32K00 230	10-25	10.5-27	17-41	10-25	10.5-27	17-41	-	-	3 ³⁾	0.7
89-00277	K3-50K00 230	20-33.3	23-36	36-55	20-33.3	23-36	36-55	-	-	3 ³⁾	1.0
89-00276	K3-62K00 230	20-50	23-53	36-82	20-50	23-53	36-82	-	-	3 ³⁾	1.0
89-00286	K3-74K00 230	20-75 ⁴⁾	23-75 ⁴⁾	36-120 ⁴⁾	20-60	23-64	36-100	-	-	3 ³⁾	1.0
89-00356	K3-90K00 230	33-80	36-82	57-120	33-75	36-77	57-120	-	-	6 ⁵⁾	2.3
89-00357	K3-115K00 230	33-100 ⁶⁾	36-103 ⁶⁾	57-148 ⁶⁾	33-90 ⁶⁾	36-93 ⁶⁾	57-148 ⁶⁾	-	-	6 ⁵⁾	2.3

²⁾ 1HN.. or HA.. snap-on

³⁾ 1HN.. or HA.. snap-on + 2HB.. for side mounting

⁴⁾ Consider the max. thermal current of the contactor K3-74: I_{th} 130 A

⁵⁾ 2HB.. on the left or right side and 4HN.. or HA.. snap-on

⁶⁾ Consider the min. cross-section of conductor at max. load

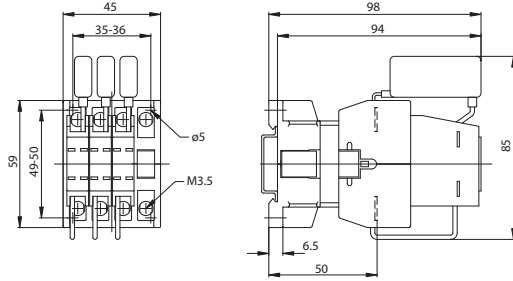
Specification: Contactors K3-..K are suitable for switching low-inductive and low-loss capacitors in capacitor banks (IEC70 and 831, VDE 0560) without and with reactors. Capacitor switching contactors are fitted with leading auxiliary contacts and damping resistors, to reduce the value of current peaks $< 70 \times I_N$.
Operating conditions: Capacitor switching contactors are protected against welding for a prospective peak inrush current of $200 \times I_N$.

Other coil voltages on request

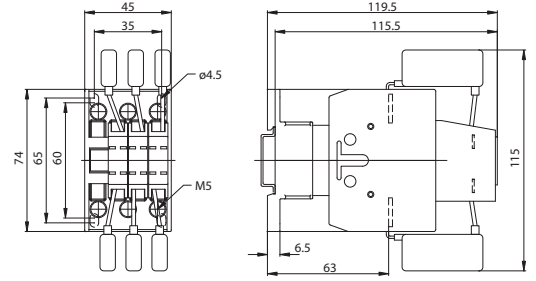
Auxiliary Contact Blocks

Article-No.	Type	Rated operational current			For contactors	Contacts		Weight approx. [kg/pc.]
		AC15 230 V	400 V	AC1 690 V		NO	NC	
		[A]	[A]	[A]				
89-00294	HB11	3	2	10	K3-24... bis K3-115...	1	1	0.02
89-00281	HN10	3	2	10	K3-18... bis K3-115...	1	-	0.02

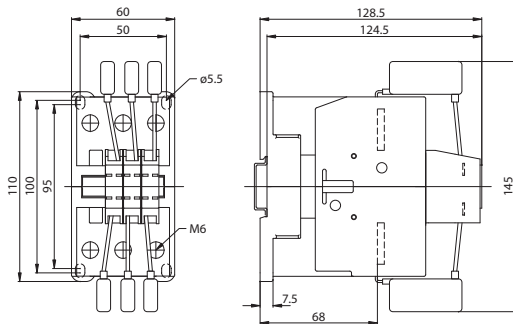
/ Dimensions



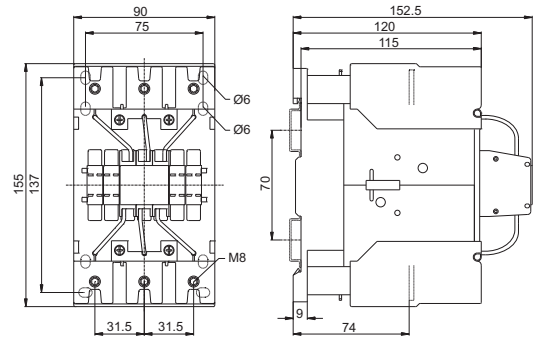
K3-18NK



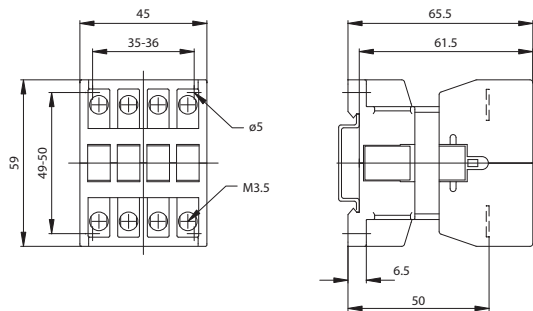
K3-24K00
K3-32K00



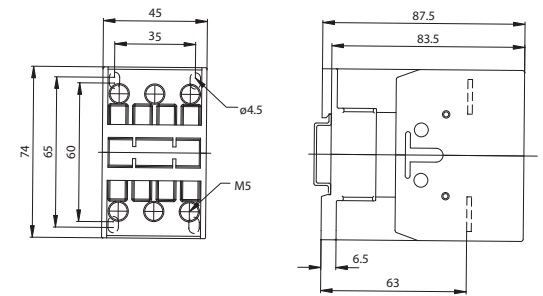
K3-50K00
K3-62K00
K3-74K00



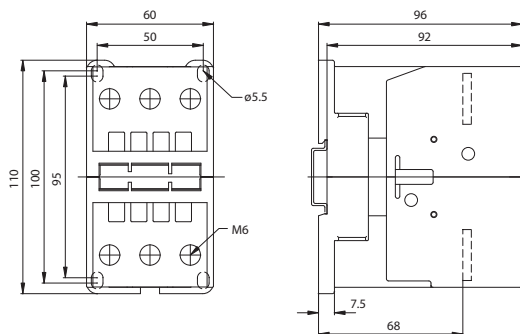
K3-90K00
K3-115K00



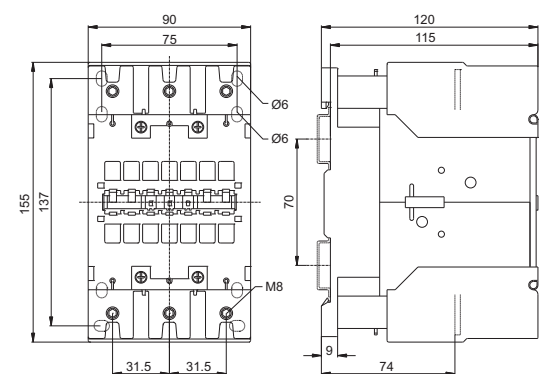
K3-18NDK10



K3-24A00
K3-32A00



K3-50A00
K3-62A00
K3-74A00



K3-90A00
K3-115A00

All dimensions in mm