

# Kraus & Naimer

BLUE LINE switchgear

www.krausnaimer.com

SINCE 1907

According to CE,  
IEC 947, EN 60947



## Contactor Catalogue



3 Pole & 4 Pole Contactors 4kW - 160kW



Thermal Overload



Mini-Contactors



DC Contactors



Mini-Relays 10A



Motor Starter



Capacitor Switching



Modular Contactors

# Mini Contactors

- Compact frame size up to AC3 5.5kW
- Screw connection terminals
- Din Rail or Screw Base Mount



AC3 380-415V kW	AC1 Rated Current A	Auxiliary NO	Contact NC	Type
3P-AC Operated				<b>* 230Vac coil voltage</b>
4.5	20	1	-	<b>9B-K1-09D10A230</b>
4.5	20	-	1	<b>9B-K1-09D01A230</b>
5.5	20	1	-	<b>9B-K1-12D10A230</b>
5.5	20	-	1	<b>9B-K1-12D01A230</b>
3P-DC Operated				<b>* 24Vdc coil voltage</b>
4.5	20	1	-	<b>9B-K1-09D10 D024</b>
4.5	20	-	1	<b>9B-K1-09D01 D024</b>
5.5	20	1	-	<b>9B-K1-12D10 D024</b>
5.5	20	-	1	<b>9B-K1-12D01 D024</b>
4P-AC Operated				<b>* 230Vac coil voltage</b>
4.5	20	-	-	<b>9B-K1-09 D00-40 A230</b>
4.5	20	1	-	<b>9B-K1-09 D00-40 A230 SIS0010</b>
4P-DC Operated				<b>* 24Vdc coil voltage</b>
4.5	20	-	-	<b>9B-K1-09 D00-40 D024</b>
4.5	20	1	-	<b>9B-K1-09 D00-40 D024 SIS0010</b>

\* **Coil Voltage Coding**

Code	Voltage
<b>A024</b>	24V 50Hz
<b>A042</b>	42V 50Hz
<b>A110</b>	110V 50Hz/120V 60Hz
<b>A230</b>	220V-240V 50Hz
<b>A400</b>	380-415V 50Hz
<b>D012</b>	12 Vdc
<b>D048</b>	48 Vdc
<b>D110</b>	110 Vdc

Other Coil Voltages, Please consult us.

# Mini Relays

- 10A thermal  $I_{th}$  rating
- Suitable for electronic circuit
- Din Rail or Screw Base Mounting
- Screw terminals
- Add Aux Contact Block - up to 8 contacts available



AC15 230V A	$I_{th}$ Thermal Current A	Contact		Type
		NO	NC	
Mini Relay AC Operated				* 230Vac coil voltage
3	10	4	-	<b>9B-K1-07D40 A230</b>
3	10	3	1	<b>9B-K1-07D31 A230</b>
3	10	2	2	<b>9B-K1-07D22 A230</b>
3	10	-	4	<b>9B-K1-07D04 A230</b>
Mini Relay DC Operated				* 24Vdc coil voltage
3	10	4	-	<b>9B-K1-07D40 D024</b>
3	10	3	1	<b>9B-K1-07D31 D024</b>
3	10	2	2	<b>9B-K1-07D22 D024</b>
3	10	-	4	<b>9B-K1-07D22 D024</b>

Auxiliary Add-ON Contacts Blocks for MINI Relays and MINI Contactors				
AC15 230V A	$I_{th}$ Thermal Current A			Type
		NO	NC	
3	10	1	1	<b>9B-HK11</b>
3	10	-	2	<b>9B-HK02</b>
3	10	2	-	<b>9B-HK20</b>
3	10	4	-	<b>9B-HK40</b>
3	10	2	2	<b>9B-HK22</b>
3	10	-	4	<b>9B-HK04</b>

Ordering Example: Required 4 NO + 4NC relay contacts (coil AC230) :-

Order : 1pc **9B-K1-07D40A230** ( 4 NO ) + 1pc **9B-HK04** ( 4 NC )



★




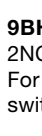
Coil Voltage Coding	
Code	Voltage
<b>A024</b>	24V 50Hz
<b>A042</b>	42V 50Hz
<b>A110</b>	110V 50Hz/120V 60Hz
<b>A230</b>	220V-240V 50Hz
<b>A400</b>	380-415V 50Hz
<b>D012</b>	12 Vdc
<b>D048</b>	48 Vdc
<b>D110</b>	110 Vdc

Other Coil Voltages, Please consult us.

# Contactors 3-pole

- Up to 315A AC3
- Up to 500A AC1
- DIN-rail mounting up to AC3 115A
- International Approvals
- Data according to IEC 947 / EN 60947

<b>Ratings</b>																																														
AC3	400V	Motor	<b>10A</b>	<b>14A</b>	<b>18A</b>	<b>22A</b>																																								
		380-400V	4kW	5.5kW	7.5kW	11kW																																								
		660-690V	5.5kW	7.5kW	10kW	10kW																																								
AC1	690V at 40°C		25A	25A	32A	32A																																								
<b>Auxiliary contacts</b>			<b>Type</b>																																											
			<b>*230AC Coil</b>																																											
NO	NC		<b>9BK310A10A230</b>	<b>9BK314A10A230</b>	<b>9BK318A10A230</b>	<b>9BK322A10A230</b>																																								
1	0		<b>9BK310A01A230</b>	<b>9BK314A01A230</b>	<b>9BK318A10A230</b>	<b>9BK322A10A230</b>																																								
0	1		-	-	-	-																																								
1	1		-	-	-	-																																								
0	0		-	-	-	-																																								
<b>Cable cross-section</b>																																														
Solid		mm <sup>2</sup>	0,75 - 6																																											
Flexible		mm <sup>2</sup>	1 - 4																																											
Cables per clamp			2																																											
<b>Auxiliary contact</b>																																														
I <sub>th</sub>	40°C	A	16																																											
AC15	230V	A	12																																											
	400V	A	4																																											
<b>Power consumption of coils</b>																																														
	Inrush VA		33 - 45																																											
	hold VA		7 - 10																																											
	Operation range of coils		0.85 - 1.1																																											
<b>Mounting</b>			35mm DIN-rail or base																																											
<b>Additional aux. contact blocks</b>																																														
Front mounting	Type			<b>9BHN10</b> 1NO For low level switching		<b>9BHN10</b> 1NC For low level switching	<b>Maximum 4 HN..</b>																																							
Side mounting	Type		-	-	-	-																																								
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<b>Ratings</b>																
AC3	400V	Motor	<b>24A</b>	<b>32A</b>												
		380-400V	11kW	15kW												
		660-690V	15kW	18.5kW												
AC1	690V at 40°C		50A	65A												
				80A												
<b>Auxiliary contacts</b>			<b>Type</b>													
			<b>*230AC Coil</b>													
NO	NC		<b>9BK324A00A230 SIS0010</b>	<b>9BK32A00A230 SIS0010</b>												
1	0		-	-												
0	1		-	-												
1	1		-	-												
0	0		<b>9BK324A00A230</b>	<b>9BK32A00A230</b>												
				<b>9BK340A00A230 SIS0010</b>												
				-												
				-												
				<b>9BK340A00A230</b>												
<b>Cable cross-section</b>																
Solid		mm <sup>2</sup>	1.5 - 25													
Flexible		mm <sup>2</sup>	2.5 - 16													
Cables per clamp			1 + 1													
<b>Auxiliary contact</b>																
I <sub>th</sub>	40°C	A	-													
AC15	230V	A	-													
	400V	A	-													
<b>Power consumption of coils</b>																
	Inrush VA		90 - 115													
	hold VA		9 - 13													
	Operation range of coils		0.85 - 1.1													
<b>Mounting</b>			35mm DIN-rail or base													
<b>Additional aux. contact blocks</b>																
Front mounting	Type			<b>9BHN10</b> 1NO For low level switching												
contacts				<b>9BHN10</b> 1NC For low level switching												
				<b>Maximum 4 HN..</b>												
<b>Additional aux. contact blocks</b>																
Side mounting	Type			<b>9BHB11</b> 1NO+1NC For low level switching												
contacts				<b>9BHB02</b> 2NC For low level switching												
				<b>Maximum 2HB..</b>												
<b>Overload Relay (thermal)</b>																
Single phase protection																
Temperature compensation																
Trip and alarm contacts																
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Setting Ranges	Type															
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28 - 42A	<b>9BU3/4242</b>															




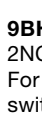
Standard Coil Voltage	
<b>Code</b>	<b>Voltage</b>
<b>A024</b>	24V AC
<b>A042</b>	42V AC
<b>A110</b>	110V 50Hz/120V 60Hz
<b>A200</b>	220V 60Hz
<b>A230</b>	230V 50Hz
<b>A400</b>	380-415V 50Hz/ 400-440V 60Hz
<b>D024</b>	24V DC
<b>D048</b>	48V DC
<b>D110</b>	110V DC
<b>D220</b>	220V DC

\* Other coil voltage, please consult us.

# Contactors 3-pole

- Up to 315A AC3
- Up to 500A AC1
- DIN-rail mounting up to AC3 115A
- International Approvals
- Data according to IEC 947 / EN 60947

<b>Ratings</b>																		
AC3	400V	Motor	<b>50A</b>	<b>62A</b>														
		380-400V	22kW	30kW														
		660-690V	30kW	37kW														
AC1	690V at 40°C		110A	120A														
				130A														
<b>Auxiliary contacts</b>			<b>Type</b>															
			<b>*230AC Coil</b>															
NO	NC		<b>9BK350A00A230 SIS0010</b>	<b>9BK362A00A230 SIS0010</b>														
1	0		-	-														
0	1		-	-														
1	1		-	-														
0	0		<b>9BK350A00A230</b>	<b>9BK362A00A230</b>														
				<b>9BK374A00A230 SIS0010</b>														
				-														
				-														
				<b>9BK374A00A230</b>														
<b>Cable cross-section</b>																		
Solid		mm <sup>2</sup>	4 - 50															
Flexible		mm <sup>2</sup>	10 - 35															
Cables per clamp			1 + 1															
<b>Auxiliary contact</b>																		
I <sub>th</sub>	40°C	A	-															
AC15	230V	A	-															
	400V	A	-															
<b>Power consumption of coils</b>																		
	Inrush VA		140 - 165															
	hold VA		13 - 18															
Operation range of coils			0.85 - 1.1															
<b>Mounting</b>			35mm DIN-rail or base															
<b>Additional aux. contact blocks</b>																		
Front mounting	Type																	
contacts			<b>9BHN10</b> 1NO For low level switching	<b>9BHN10</b> 1NC For low level switching														
			<b>Maximum 4 HN..</b>															
<b>Additional aux. contact blocks</b>																		
Side mounting	Type																	
contacts			<b>9BHB11</b> 1NO+1NC For low level switching	<b>9BHB02</b> 2NC For low level switching														
			<b>Maximum 2HB..</b>															
<b>Overload Relay (thermal)</b>																		
Single phase protection																		
Temperature compensation																		
Trip and alarm contacts																		
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TOR FOR K3-50 TO K3-74																		
Setting Ranges	Type																	
20 - 28A	<b>9BU3/7428</b>																	
28 - 42A	<b>9BU3/7442</b>																	
40 - 52A	<b>9BU3/7452</b>																	
52 - 65A	<b>9BU3/7465</b>																	
60 - 74A	<b>9BU3/7474</b>																	



<b>Ratings</b> AC3 400V Motor 380-400V 660-690V AC1 690V at 40°C	<b>90A</b> 45kW 55kW 160A	<b>115A</b> 55kW 55kW 200A								
<b>Auxiliary contacts</b> NO NC 1 0 0 1 1 1 0 0	<b>Type</b> *230AC Coil									
	<b>9BK390A00A230 SIS0010</b> - - <b>9BK390A00A230</b>	<b>9BK3115A00A230 SIS0010</b> - - <b>9BK3115A00A230</b>								
<b>Cable cross-section</b> Solid mm <sup>2</sup> Flexible mm <sup>2</sup> Cables per clamp	120 + 95 95 + 70 1 + 1									
<b>Auxiliary contact</b> I <sub>th</sub> 40°C A AC15 230V A 400V A	- - -									
<b>Power consumption of coils</b> Inrush VA hold VA Operation range of coils	280 5 0.85 - 1.1									
<b>Mounting</b>	2x DIN-rail or base									
<b>Additional aux. contact blocks</b> Front mounting Type contacts	 <b>9BHN10</b> 1NO For low level switching	 <b>9BHN10</b> 1NC For low level switching  <b>Maximum 7 HN..</b>								
<b>Additional aux. contact blocks</b> Side mounting Type contacts	 <b>9BHB11</b> 1NO+1NC For low level switching	 <b>9BHB02</b> 2NC For low level switching  <b>Maximum 2HB..</b>								
<b>Overload Relay (thermal)</b> Single phase protection Temperature compensation Trip and alarm contacts	<table border="1" style="margin: auto;"> <thead> <tr> <th colspan="2"><b>TOR FOR K3-90 TO K3-115</b></th> </tr> <tr> <th>Setting Ranges</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>60 - 90A</td> <td><b>9BU8590</b></td> </tr> <tr> <td>80 - 120A</td> <td><b>9BU85120</b></td> </tr> </tbody> </table>		<b>TOR FOR K3-90 TO K3-115</b>		Setting Ranges	Type	60 - 90A	<b>9BU8590</b>	80 - 120A	<b>9BU85120</b>
<b>TOR FOR K3-90 TO K3-115</b>										
Setting Ranges	Type									
60 - 90A	<b>9BU8590</b>									
80 - 120A	<b>9BU85120</b>									

<b>Standard Coil Voltage</b>	
Code	Voltage
<b>A024</b>	24V AC 50Hz
<b>A042</b>	42V AC 50Hz
<b>A110</b>	110V 50Hz/120V 60Hz
<b>A200</b>	220V 60Hz
<b>A230</b>	230V 50Hz
<b>A400</b>	380-415V 50Hz/ 400-440V 60Hz
<b>D024</b>	24V DC
<b>D048</b>	48V DC
<b>D110</b>	110V DC
<b>D220</b>	220V DC



Other coil voltage, please consult us.

# Contactors 3-pole

- Up to 315A AC3
- Up to 500A AC1
- DIN-rail mounting up to AC3 115A
- International Approvals
- Data according to IEC 947 / EN 60947

<b>Ratings</b> AC3 400V Motor 380-400V 660-690V AC1 690V at 40°C	<b>150A</b> 75kW 90kW 230A	<b>175A</b> 90kW 110kW 250A								
<b>Auxiliary contacts</b> NO NC 1 0 0 1 1 1 0 0	<b>Type</b> <b>*230AC Coil</b> - - <b>9BK3151A00A230 SIS0011</b> <b>9BK3151A00A230</b>									
<b>Cable cross-section</b> Solid mm <sup>2</sup> Flexible mm <sup>2</sup> Cables per clamp	2 x 16 - 120 2 x 16 - 120 1 + 1									
<b>Auxiliary contact</b> I <sub>th</sub> 40°C A AC15 230V A 400V A	- - -									
<b>Power consumption of coils</b> Inrush VA hold VA Operation range of coils	350 5 0.85 - 1.1									
<b>Mounting</b>	Base									
<b>Additional aux. contact blocks</b> Front mounting Type contacts	 <b>9BHKT11</b> 1NO + 1NC	<b>9BHKT22</b> 2NO + 2NC <b>Maximum 1 pc.</b>								
<b>Additional aux. contact blocks</b> Side mounting Type contacts	 <b>9BHKA11</b> 1NO + 1NC	<b>Maximum 2 pcs.</b>								
<b>Overload Relay (thermal)</b> Single phase protection Temperature compensation Trip and alarm contacts	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;">TOR FOR K3-151 TO K3-176</th> </tr> <tr> <th style="text-align: center;">Setting Ranges</th> <th style="text-align: center;">Type</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">120 -180A</td> <td style="text-align: center;"><b>9BU180180</b></td> </tr> <tr> <td style="text-align: center;">Links for independent mounting (Basbar set)</td> <td style="text-align: center;"><b>9BSU180/176</b></td> </tr> </tbody> </table>		TOR FOR K3-151 TO K3-176		Setting Ranges	Type	120 -180A	<b>9BU180180</b>	Links for independent mounting (Basbar set)	<b>9BSU180/176</b>
TOR FOR K3-151 TO K3-176										
Setting Ranges	Type									
120 -180A	<b>9BU180180</b>									
Links for independent mounting (Basbar set)	<b>9BSU180/176</b>									



<b>Ratings</b>										
AC3	400V	Motor	<b>210A</b>	<b>260A</b>						
		380-400V	110kW	132kW						
		660-690V	160kW	210kW						
AC1	690V at 40°C		350A	450A						
<b>Auxiliary contacts</b>			<b>Type</b>							
			<b>*230AC Coil</b>							
NO	NC									
1	0	-	-	-						
0	1	-	-	-						
1	1	<b>9BK3210A00A230 SIS0011</b>	<b>9BK3260A00A230 SIS0011</b>	<b>9BK3316A00A230 SIS0011</b>						
0	0	<b>9BK3210A00A230</b>	<b>9BK3260A00A230</b>	<b>9BK3316A00A230</b>						
<b>Cable cross-section</b>										
Solid	mm <sup>2</sup>		busbar							
Flexible	mm <sup>2</sup>		30 x 6							
Cables per clamp										
<b>Auxiliary contact</b>										
I <sub>th</sub>	40°C	A	-							
AC15	230V	A	-							
	400V	A	-							
<b>Power consumption of coils</b>										
	Inrush VA		360							
	hold VA		5							
Operation range of coils			0.85 - 1.1							
<b>Mounting</b>			Base							
<b>Additional aux. contact blocks</b>										
Front mounting	Type		<b>9BHKT11</b> 1NO + 1NC	<b>9BHKT22</b> 2NO + 2NC						
contacts				<b>Maximum 1 pc.</b>						
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<b>Overload Relay (thermal)</b>										
Single phase protection										
Temperature compensation										
Trip and alarm contacts										
			<table border="1"> <tr> <th colspan="2">TOR FOR K3-210 TO K3-316</th> </tr> <tr> <th>Setting Ranges</th> <th>Type</th> </tr> <tr> <td>144 - 320A</td> <td><b>9BU320320</b></td> </tr> </table>		TOR FOR K3-210 TO K3-316		Setting Ranges	Type	144 - 320A	<b>9BU320320</b>
TOR FOR K3-210 TO K3-316										
Setting Ranges	Type									
144 - 320A	<b>9BU320320</b>									

Standard Coil Voltage	
Code	Voltage
<b>A024</b>	24V AC 50Hz
<b>A042</b>	42V AC 50Hz
<b>A110</b>	110V 50Hz/120V 60Hz
<b>A200</b>	220V 60Hz
<b>A230</b>	230V 50Hz
<b>A400</b>	380-415V 50Hz/ 400-440V 60Hz
<b>D024</b>	24V DC
<b>D048</b>	48V DC
<b>D110</b>	110V DC
<b>D220</b>	220V DC

Other coil voltage, please consult us.

## 4 Poles Contactor

- AC1 rated 25A to 500A
- AC3 rated 4KW to 160KW
- Compact and space saving design
- Suitable for applications such as switching heating circuits, as generator, as bypass or changeover contactor.



AC3 (Motor) 380-415V kW	AC1 (Resistive) 400V kW	AC1 690V Rated Current A	Auxiliary NO	Contact NC	Type
* 230Vac coil voltage					
4	17.5	25	1	-	<b>9B-K3-10A00-40 A230 SIS0010</b>
17.5	22	32	1	-	<b>9B-K3-18A00-40 A230 SIS0010</b>
11	31	45	1	-	<b>9B-K2-23A00-40 A230 SIS0010</b>
15	34.5	50	1	-	<b>9B-K2-30A00-40 A230 SIS0010</b>
22	55	80	1	-	<b>9B-K2-45A00-40 A230 SIS0010</b>
30	69	100	1	-	<b>9B-K2-60A00-40 A230 SIS0010</b>
55	139	200	1	1	<b>9B-K3-116A00-40 A230 SIS0011</b>
75	159	230	1	1	<b>9B-K3-151A00-40 A230 SIS0011</b>
90	173	250	1	1	<b>9B-K3-176A00-40 A230 SIS0011</b>
110	242	350	1	1	<b>9B-K3-210A00-40 A230 SIS0011</b>
132	310	450	1	1	<b>9B-K3-260A00-40 A230 SIS0011</b>
160	346	500	1	1	<b>9B-K3-316A00-40 A230 SIS0011</b>

\* 

Coil Voltage Coding	
Code	Voltage
<b>A024</b>	24V 50Hz
<b>A042</b>	42V 50Hz
<b>A110</b>	110V 50Hz/120V 60Hz
<b>A230</b>	220V-240V 50Hz
<b>A400</b>	380-415V 50Hz
<b>D012</b>	12 Vdc
<b>D048</b>	48 Vdc
<b>D110</b>	110 Vdc

-Other Coil Voltages, Please consult us.

-Latch and Mechanical Interlock option available as accessories

## D.O.L Starters in Thermoplastic Enclosure

- Starter for motor control
- 0.25 to 15KW with 3 -phase thermal overload relay with 3 protected phases
- Enclosures IP 65 rated up to 7.5Kw
- Enclosures IP 55 rated 11 to 15Kw
- Include Start/Stop pushbutton
- Include Thermal Overload Relay

Motor 3- phase Power Rating 50/60Hz AC3 400V kW	Setting Range of Thermal Overload Relay  A	Type   *Coil =400Vac
0.25	0.8-1.2	<b>9B-P1T09 A400 SIS0012</b>
0.37	1.2-1.8	<b>9B-P1T09 A400 SIS0018</b>
0.55	1.2-1.8	<b>9B-P1T09 A400 SIS0018</b>
0.75	1.8-2.7	<b>9B-P1T09 A400 SIS0027</b>
1.1	2.7-4	<b>9B-P1T09 A400 SIS0040</b>
1.5	2.7-4	<b>9B-P1T09 A400 SIS0040</b>
2.2	4-6	<b>9B-P1T09 A400 SIS0060</b>
3.0	6-9	<b>9B-P1T09 A400 SIS0090</b>
3.7	8-11	<b>9B-P1T09 A400 SIS0110</b>
4.0	8-11	<b>9B-P1T09 A400 SIS0110</b>
5.5	10-14	<b>9B-P1T16 A400 SIS0140</b>
7.5	13-18	<b>9B-P1T16 A400 SIS0180</b>
11	17-23	<b>9B-K2U23PT A400 SIS0230</b>
15	22-30	<b>9B-K2U30PT A400 SIS0300</b>



## Star-Delta Starters in Steel Enclosure

- Starter for motor control
- 5.5 to 55KW with 3 -phase thermal overload relay with 3 protected phases
- Include 1 green Start and 1 red Stop pushbutton
- Terminal blocks provided for easy wiring
- Include 1 Green Indicating Run Light and 1 Red Indicating Trip Light
- Star Delta Timer and Mechanical Interlock fitted
- Include Thermal Overload Relay
- Weather-proof enclosure

Motor 3- phase Power Rating 50/60Hz AC3 400V kW	Setting Range of Thermal Overload Relay  A	Type   *Coil =400Vac
5.5	6-9	<b>9B-K3 Y18 BT A400 SIS0090</b>
7.5	8-11	<b>9B-K3 Y18 BT A400 SIS0110</b>
11	10-14	<b>9B-K3 Y18 BT A400 SIS0140</b>
15	17-23	<b>9B-K3 Y18 BT A400 SIS0230</b>
18.5	17-23	<b>9B-K3 Y18 BT A400 SIS0230</b>
22	20-28	<b>9B-K3 Y18 BT A400 SIS0280</b>
30	28-42	<b>9B-K3 Y18 BT A400 SIS0420</b>
37	40-52	<b>9B-K3 Y18 BT A400 SIS0520</b>
45	40-52	<b>9B-K3 Y18 BT A400 SIS0520</b>
55	52-63	<b>9B-K3 Y18 BT A400 SIS0630</b>



Coil voltage 230Vac **Code A230**

\* Other coil voltages please consult us

# Capacitor Switching Contactors

for use with reactive or non-reactive capacitor banks

Rated Operational Power at 50/60Hz						Aux. Contacts			Type	Coil voltage <sup>1)</sup> 220-240V 50Hz
Ambient Temperature						Built-in Add.				
50°C			60°C			NO	NC	pcs.		
380V	415V	660V	380V	415V	660V					
400V	440V	690V	400V	440V	690V					
kVAr	kVAr	kVAr	kVAr	kVAr	kVAr					
0-12,5	0-13	0-20	0-12,5	0-13	0-20	1	-	1 <sup>2)</sup>	9BK3-18K10	A230
0-12,5	0-13	0-20	0-12,5	0-13	0-20	-	1	1 <sup>2)</sup>	9BK3-18K01	
10-20	10,5-22	17-33	10-20	10,5-22	17-33	-	-	3 <sup>3)</sup>	9BK3-24K00	
10-25	10,5-27	17-41	10-25	10,5-27	17-41				9BK3-32K00	
20-33,3	23-36	36-55	20-33,3	23-36	36-55				9BK3-50K00	
20-50	23-53	36-82	20-50	23-53	36-82				9BK3-62K00	
20-75 <sup>4)</sup>	23-75 <sup>4)</sup>	36-120 <sup>4)</sup>	20-60	23-64	36-100				9BK3-74K00	
33-80	36-82	57-120	33-75	36-77	57-120			6 <sup>5)</sup>	9BK3-90K00	A230
33-100 <sup>6)</sup>	36-103 <sup>6)</sup>	57-148 <sup>6)</sup>	33-90 <sup>6)</sup>	36-93 <sup>6)</sup>	57-148 <sup>6)</sup>				9BK3-115K00	



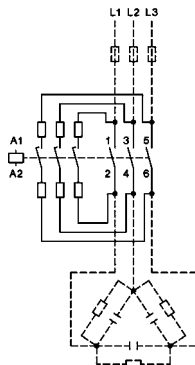
**Specification:** Contactors K3...K are suitable for switching low-inductive and low loss capacitors in capacitor banks (IEC70 and 831, VDE 0560) without and with reactors. Capacitor switching contactors are fitted with early make contacts and damping resistors, to reduce the value of make current  $<70 \times I_e$ .

**Operating Conditions:** Capacitor switching contactors are protected against contact welding for a prospective making current of  $200 \times I_e$ .

## Technical Data acc. to IEC 947-4-1, IEC 947-5-1, EN 60947-4-1, EN 60947-5-1, VDE 0660

Type		ZBK3-18K	ZBK3-24K	ZBK3-32K	ZBK3-50K	ZBK3-62K	ZBK3-74K	ZBK3-90K	ZBK3-115K
Max. frequency of operations z	1/h	120	120	120	120	120	80	80	80
Contact life	non reactive capacitor banks	S x 103	250	150	150	150	120	120	120
	reactive capacitor banks	S x 103	400	300	300	300	200	200	200
Rated operational current $I_e$ AC6b	at 50°C	A	0-18	14-28	14-36	30-48	30-72	30-108	50-115
	at 60°C	A	0-18	14-28	14-36	30-48	30-72	30-87	50-108
Rated operational current $I_{th}$ AC1	at 50°C	A	32	45	60	100	110	120	155
	at 60°C	A	32	40	55	90	100	110	145
Overload factor acc. to EN 61921: 30% min.	at 50°C	%	78	60	67	108	53	11	35
	at 60°C	%	78	43	53	88	39	26	34
Fuses gL (gG)	from / to	A	35 / 63	50 / 80	63 / 100	80 / 160	125 / 160	160 / 200	160 / 250

### Typical Circuit Diagram

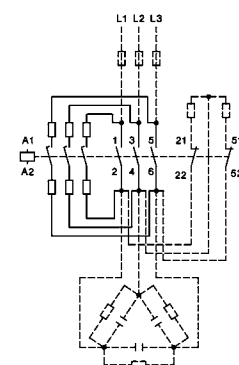


### Wiring Diagram for Quick Discharge Resistors

Make sure that the current of the discharge resistors is not higher than the rated current (AC1) of the auxiliary contacts.

### Mounting instructions:

In the area of capacitor switching contactors, difficulty inflammable and self-extinguishing materials shall be used only, because abnormal temperatures within the area of the resistor spirals cannot be excluded.



- 1) Other coil voltages, please contact us
- 2) 1 HN.. or HA.. snap-on
- 3) 2HB.. for side mounting and 1 HN.. or HA.. snap-on

- 4) Consider the max. thermal current of the contactor K3-74A:  $I_{th}$  130A
- 5) 2 HB.. on the left or right side and 4 HN.. or HA.. snap-on
- 6) Consider the min. cross-section of conductor at max. load



**Kraus & Naimer Pte. Ltd.**

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