



RADE KONČAR
KONTAKTORI I RELEI D.O.O.

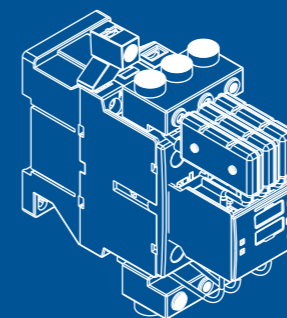
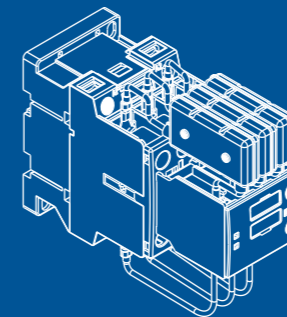
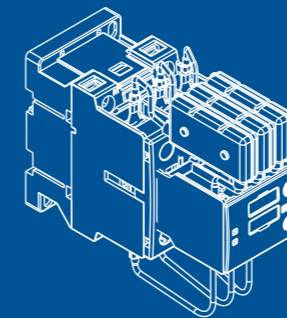
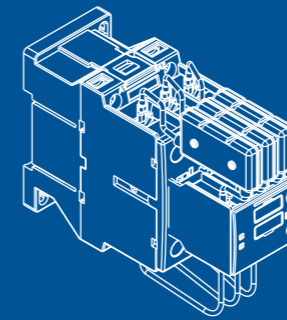
Simple, safe and affordable for everyone



CONTACTORS
FOR CAPACITOR SWITCHING

INDEX

- 3 CNNK 2,5 – CNNK 7,5
- 4 CNNK 10...N – CNNK 30...N – New Series
- 5 CNNK 40...N – CNNK 75...N – New Series
- 6 Technical Information
- 9 Dimensional Drawings
- 10 Order form






CONTACTORS FOR CAPACITOR SWITCHING

CNNK 2,5 - CNNK 7,5

Features

- In conformity with: IEC 60947-4-1, EN 60947-4-1
- Switching of 3 phase capacitors
- Ambient temperature of 55 °C
- Available in other AC voltages on request
- Maximum permissible peak current $I \leq 100 I_e$

Selection and ordering data

	AC-6b utilization category For switching three-phase capacitors			Auxiliary contacts	Type	Weights kg		
	Capacitor rating at operating voltage 50 Hz		I _e (A) 400 V/50 Hz				NO	NC
	230 V kVAr	400/440V kVAr						
	1,4	2,5	3,7	3,6	0 0 1 0 0 1	CNNK 2,5 00 0.24 CNNK 2,5 10 0.25 CNNK 2,5 01		
	2,8	5	7,5	7,2	0 0 1 0 0 1	CNNK 5 00 0.25 CNNK 5 10 0.26 CNNK 5 01		
	4	7,5	11	11	0 0 1 1	CNNK 7,5 00 0.27 CNNK 7,5 11* 0.29		

Note:

Maximum permissible peak current $I \leq 100$ times the nominal rms current of the switched capacitor

* With BP3 11.





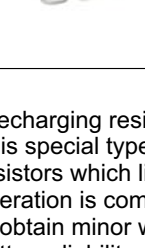
CONTACTORS FOR CAPACITOR SWITCHING

CNNK 10..N - CNNK 30..N - *New Series*

Features

- In conformity with: IEC 60947-4-1, EN 60947-4-1
 - Switching of 3 phase capacitors
 - Ambient temperature of 55 °C
 - Available in other AC voltages on request
 - Maximum permissible peak current $I \leq 200 I_e$
- New series*
- 5 sizes: 15kVAr; 20kVAr; 30kVAr; 60kVAr; 75kVAr
 - New precharging resistors for increased service life

Selection and ordering data

	AC-6b utilization category For switching three-phase capacitors				Auxiliary contacts		Type	Weights kg
	Capacitor rating at operating voltage 50 Hz			I _e (A) 400 V/50 Hz	NO	NC		
	230 V kVAr	400/440V kVAr	690 V kVAr					
	5	10	15	14	2 0 1 1 0 2	CNNK 10 20N 0.320 CNNK 10 11N CNNK 10 02N		
	6,7	12.5	18	18	2 0 1 1 0 2	CNNK 12 20N 0.320 CNNK 12 11N CNNK 12 02N		
	8.5	15	22	22	2 0 1 1 0 2	CNNK 15 20N 0.325 CNNK 15 11N CNNK 15 02N		
	11	20	30	29	1 0 0 1	CNNK 20 10N 0.333 CNNK 20 01N		
	14	25	35	36	1 0 1 0 0 1	CNNK 25E 10N* 0.450 CNNK 25 10N 0.520 CNNK 25 01N		
	20	30	40	44	1 0 0 1	CNNK 30 10N 0.525 CNNK 30 01N		

Precharging resistors are an integral component of the CNNK..N contactors, equipped with early-make contacts. This special type of contact has the purpose of connecting for a very brief interval, 2-3ms, during the contactor closing, resistors which limit the connecting current of the capacitors. These resistors are then excluded when the closing operation is complete and the current capacity is conveyed to the main contacts. With this type of circuit, it is possible to obtain minor wear of all the components of the system especially fuses and capacitors ensuring a longer life and better reliability. Suitable for capacitors with and without reactor protection.

CONTACTORS FOR CAPACITOR SWITCHING

CNNK 40..N - CNNK 75..N - *New Series*



Features

- In conformity with: IEC 60947-4-1, EN 60947-4-1
- Switching of 3 phase capacitors
- Ambient temperature of 55 °C
- Available in other AC voltages on request
- Maximum permissible peak current $I \leq 200 I_e$

New series

- 5 sizes: 15kVAr; 20kVAr; 30kVAr; 60kVAr; 75kVAr
- New precharging resistors for increased service life

Selection and ordering data

AC-6b utilization category For switching three-phase capacitors	Capacitor rating at operating voltage 50 Hz			le (A) 400 V/50 Hz	Auxiliary contacts		Type	Weights kg
	230 V kVAr	400/440V kVAr	690 V kVAr		NO	NC		
	230 V	400/440V	690 V		NO	NC		
	25	40	58	58	1	0	CNNK 40 10N CNNK 40 01N	0.943
	29	50	70	72	1	0	CNNK 50 10N CNNK 50 01N	0.945
	32	60	80	87	1	0	CNNK 60 10N CNNK 60 01N	0.97
	32	60	85	87	1	0	CNNK 60N 10N CNNK 60N 01N	1.35
	35	70	90	101	1	0	CNNK 70 10N CNNK 70 01N	1.40
	38	75	105	108	1	0	CNNK 75 10N CNNK 75 01N	1.50

Precharging resistors are an integral component of the CNNK..N contactors, equipped with early-make contacts. This special type of contact has the purpose of connecting for a very brief interval, 2-3ms, during the contactor closing, resistors which limit the connecting current of the capacitors. These resistors are then excluded when the closing operation is complete and the current capacity is conveyed to the main contacts. With this type of circuit, it is possible to obtain minor wear of all the components of the system especially fuses and capacitors ensuring a longer life and better reliability. Suitable for capacitors with and without reactor protection.

TECHNICAL INFORMATION




CONTACTORS type CNNK 2,5 - CNNK 7,5

In conformity with: IEC 60947-4-1, EN 60947-4-1

Special contactors for power factor correction

Choice criteria

The contactor during the closing transition is influenced by electrical currents with high frequencies and high amplitudes. The frequencies of these currents have ranges between 1 and 10kHz and the amplitudes must have values lower than the maximum permissible peak current $I \leq 100$ times the nominal rms current of the switched capacitor.

Type designation	CNNK 2,5 10 CNNK 2,5 01	CNNK 5 10 CNNK 5 01	CNNK 7,5 00 CNNK 7,5 11
Capacitor rating at operating voltage 230V kVAr	1,4	2,8	4
400-440V kVAr	2,5	5	7,5
50/60Hz 500-550V kVAr	3	5,5	9
660-690V kVAr	3,7	7,5	11
Rated operational current I _e /AC-6b et 400 V A	3,6	7,2	11
Insulation rating U _i V	690		
Permissible ambient temperature °C	- 25 to + 55		
Rated impuls withstand voltage U _{imp} kV	8		
Consumption of electromagnet in cold state with U _n AC operated			
closing p.f. VA	62		
closed p.f. VA	0,75		
	7		
	0,3		
Voltage tolerances	0,85 - 1,1 U _n		
Coil Tightening torque Nm	0,8		
Terminal screw/Screw head	M3,5/PZ2		
Degree of protection	IP 20		
Maximum permissible fuse ratings main circuit gL/gG A	20	25	40
auxilliary circuit A	16	16	16
Frequency of switching operations s/h	240		
Electrical endurance min.	150.000	120.000	100.000
Sizes of connecting conductors - main circuit			
multi-wire conductor mm ²	1.5-6		
multi-wire conductor with cable shoe mm ²	1.5-6		
Terminal screw	M4	M4	M4
Screw head	PZ2 	PZ2 	PZ2 
Tightening torque Nm	1,2	1,2	1,4
- auxiliary circuit			
multi-wire conductor mm ²	1-2,5		
multi-wire conductor with cable shoe mm ²	0,75-1,5		
Terminal screw	M3,5		
Screw head	PZ2		
Tightening torque Nm	0,8		
Loadability of auxiliary contacts rated continuous current I _{th} ; 35°C A	10		
AC rated operational current I _e /AC15			
for 230V A	6		
400V A	4		
500V A	2		
690V A	1		

TECHNICAL INFORMATION

CONTACTORS type CNNK 10..N - CNNK 30..N

In conformity with: IEC 60947-4-1, EN 60947-4-1

Special contactors for power factor correction

Main characteristics

These contactors are equipped with early - make contacts. This special type of contact has the purpose of connecting for a very brief interval, 2-3 ms, during the contactor closing, resistors which limit the connecting current of the capacitors. These resistors are then excluded when the closing operation is complete and the current capacity is conveyed to the main contacts. Maximum permissible peak current $I \leq 200$ times the nominal rms current of the switched capacitor.

Type designation	CNNK 10 20N CNNK 10 11N CNNK 10 02N	CNNK 12 20N CNNK 12 11N CNNK 12 02N	CNNK 15 20N CNNK 15 11N CNNK 15 02N	CNNK 20 10N CNNK 20 01N	CNNK 25E 10N CNNK 25E 01N	CNNK 25 10N CNNK 25 01N	CNNK 30 10N CNNK 30 01N
Capacitor rating at operating voltage 230V kVAr	5	6.7	8.5	11	14	14	20
400-440V kVAr	10	12.5	15	20	25	25	30
500-550V kVAr	12.5	15	18	24	30	30	35
50/60Hz							
660-690V kVAr	15	18	22	30	35	35	40
Rated operational current $I_{e/AC-6b}$ at 400V A	14	18	22	29	36	36	44
Rated operational current I_{th} at 400V A	25	25	30	40	50	60	60
Insulation rating U_i V	690						
Permissible ambient temperature °C	- 25 to + 55						
Rated impuls withstand voltage U_{imp} kV	8						
Consumption of electromagnet in cold state with Un AC operated							
closing VA	62			65			
p.f.	0,75			0,75			
closed VA	7			8			
p.f.	0,3			0,3			
Voltage tolerances	0,85 - 1,1 Un						
Coil Tightening torque Nm	0,8						
Terminal screw/Screw head	M3,5/PZ2						
Degree of protection	IP 20						
Maximum permissible fuse ratings main circuit gL/gG A	25	35	50	50	63	63	80
auxiliary circuit A	16	16	16	16	16	16	16
Frequency of switching operations s/h	240			120			
Electrical endurance min.	250.000			175.000	125.000		
Sizes of connecting conductors - main circuit							
multi-wire conductor mm ²	1.5-6	1.5-6	1.5-6	2.5-10	2.5-10	6-25	6-25
multi-wire conductor with cable shoe mm ²							
Terminal screw	M4	M4	M4	M4	M4	M5	
Screw head	PZ2	PZ2	PZ2	PZ2	PZ2	M5	
Tightening torque Nm	1,2	1,2	1,2	1,4	1,6	2	
- auxiliary circuit multi-wire conductor mm ²	1-2,5						
multi-wire conductor with cable shoe mm ²	0,75-1,5						
Terminal screw	M3,5						
Screw head	PZ2						
Tightening torque Nm	0,8						
Loadability of auxiliary contacts rated continuous current I_{th} ; 35°C A	10						
AC rated operational current $I_{e/AC15}$							
for 230V A	6						
400V A	4						
500V A	2						
690V A	1						

TECHNICAL INFORMATION

CONTACTORS type CNNK 40N - CNNK75N

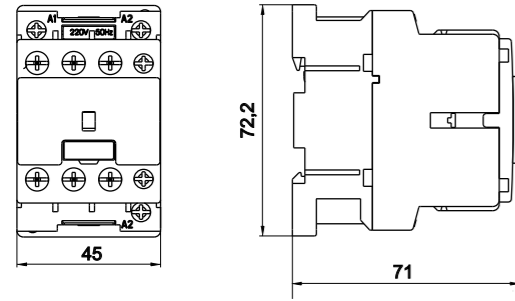
In conformity with: IEC 60947-4-1, EN 60947-4-1

Special contactors for power factor correction

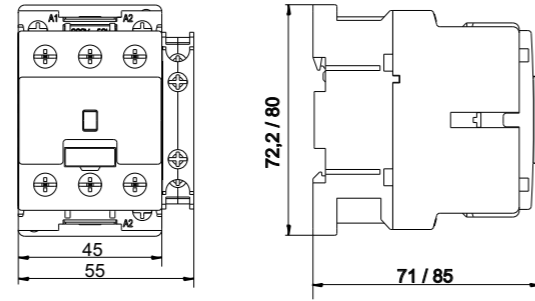
Type designation	CNNK 40 10N CNNK 40 01N	CNNK 50 10N CNNK 50 01N	CNNK 60 10N CNNK 60 01N	CNNK 60N 10N CNNK 60N 01N	CNNK 70 10N CNNK 70 01N	CNNK 75 10N CNNK 75 01N
Capacitor rating at operating voltage 230V kVAr	25	29	32	32	35	38
400-440V kVAr	40	50	60	60	70	75
500-550V kVAr	50	60	70	70	75	80
50/60Hz						
660-690V kVAr	58	70	80	85	90	105
Rated operational current $I_{e/AC-6b}$ et 400 V A	58	72	87	87	101	108
Rated operational current I_{th} at 400V A	85	100	125	135	137	150
Insulation rating U_i V	1000					
Permissible ambient temperature °C	- 25 to + 55					
Rated impuls withstand voltage U_{imp} kV	8					
Consumption of electromagnet in cold state with Un AC operated						
closing VA	155			204		
p.f.	0,6			0,54		
closed VA	12			16		
p.f.	0,29			0,26		
Voltage tolerances	0,85 - 1,1 Un					
Coil Tightening torque Nm	0,8					
Terminal screw/Screw head	M3,5/PZ2					
Degree of protection	IP 20					
Maximum permissible fuse ratings main circuit gL/gG A	100	125	160			
auxiliary circuit A	16	16	16			
Frequency of switching operations s/h	100					
Electrical endurance min.	125.000			100.000		
Sizes of connecting conductors - main circuit						
multi-wire conductor mm ²	16-35	16-35	16-35	25-50		
multi-wire conductor with cable shoe mm ²						
Terminal screw	M6			M8		
Screw head	PZ2			M8		
Tightening torque Nm	3 - 4			4 - 4.5		5 - 6
- auxiliary circuit multi-wire conductor mm ²	1-2,5					
multi-wire conductor with cable shoe mm ²	0,75-1,5					
Terminal screw	M3,5					
Screw head	PZ2					
Tightening torque Nm	0,8					
Loadability of auxiliary contacts rated continuous current I_{th} ; 35°C A	16					
AC rated operational current $I_{e/AC15}$						
I_{th} ; for 230V A	10					
400V A	6					
500V A	4					
690V A	2					

DIMENSION DRAWINGS (mm)

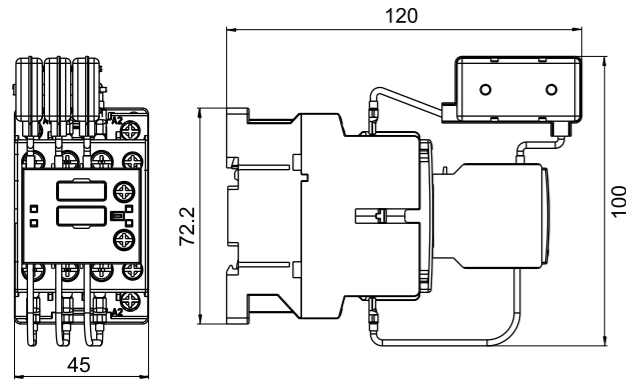
CNNK 2,5; CNNK 5



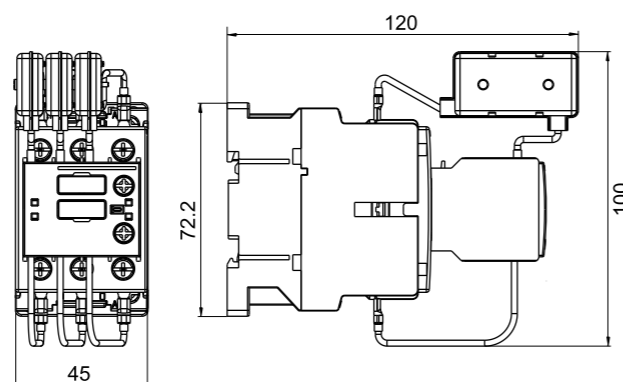
CNNK 7,5



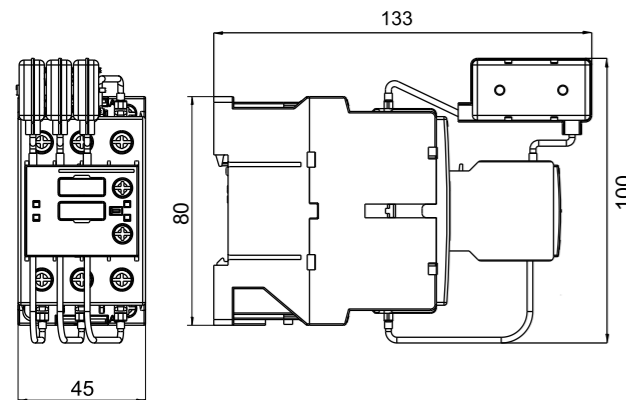
CNNK 10..N; CNNK 12..N; CNNK 15..N



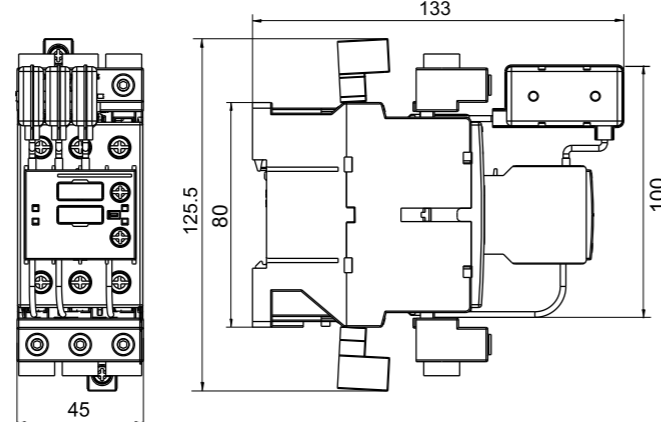
CNNK 20..N



CNNK 25E..N

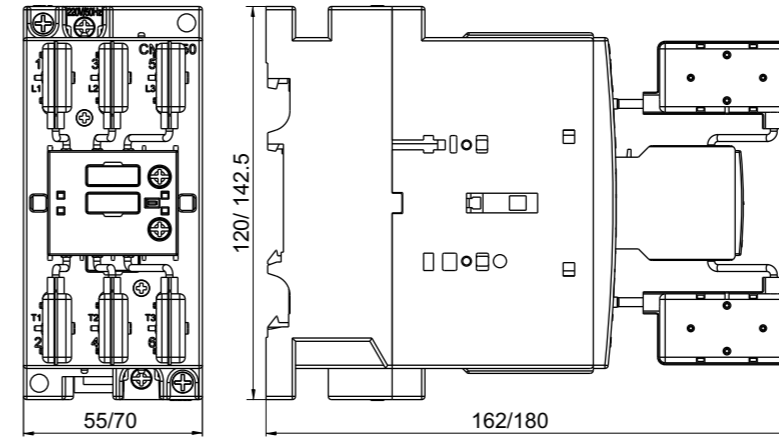


CNNK 25..N; CNNK 30..N



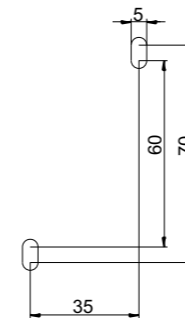
DIMENSION DRAWINGS (mm)

CNNK 40..N, CNNK 50..N, CNNK 60..N / CNNK 60N..N, CNNK 70..N, CNNK 75..N

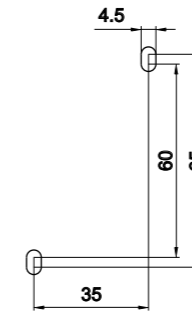


Drilling plan (mm)

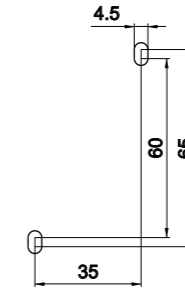
CNNK 25E..N; CNNK 25..N,
CNNK 30..N



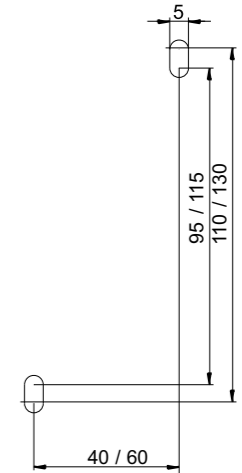
CNNK 2,5; CNNK 5
CNNK 7,5



CNNK 10..N; CNNK 12..N
CNNK 15..N; CNNK 20..N



CNNK 40..N, CNNK 50..N,
CNNK 60..N / CNNK 60N..N,
CNNK 70..N, CNNK 75..N



ORDER FORM

Type

Control voltages

(Note - standard control voltages 230V/50Hz, 400V/50Hz)

Example: Contactor for capacitor switching CNNK60, with one NO and zero NC auxiliary contacts, with control voltage 230V, 50Hz

CNNK 60 10N 230V/50Hz