TECHNICAL INFORMATION

CAPACITOR CONTACTORS type
CNNK 10 - CNNK 30, CNKM 40 - CNKM 75
In confomity with: IEC 60947-1, IEC 60947-4

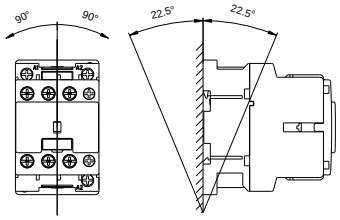
Special contactors for power factor correction

Main characteristics

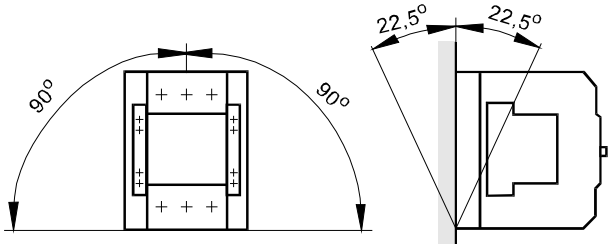
These contactors are equipment with early - make contacts. This special type of contact has the purpose of connecting for a very brief interval, 2-3 ms, during the contactor closing, resistances which limit the connecting current of the capacitors. These resistances are then excluded when the closing operation is complete and the current capacity is conveyed to the main contacts.

Type designation		CNNK 10 20 CNNK 10 11	CNNK 12 20 CNNK 12 11	CNNK 15 20 CNNK 15 11	CNNK 20 10	CNNK 25E 10	CNNK 25 10	CNNK 30 10	CNKM 40 00 CNKM 40 22	CNKM 50 00 CNKM 50 22	CNKM 60E 00 CNKM 60E 22	CNKM 60 22	CNKM 75 22
Capacitor rating at operating voltage 50/60Hz	230V kVAr	5	6.7	8.5	11	14	14	20	25	29	32	34	38
	400V kVAr	**10**	**12.5**	**15**	**20**	**25**	**25**	**30**	**40**	**50**	**60**	**60**	**75**
	440V kVAr	**11**	**14**	**17**	**22**	**27**	**27**	**30**	**44**	**55**	**60**	**66**	**77**
	500-550V kVAr	12.5	15	18	24	30	30	35	50	60	70	75	88
	660-690V kVAr	15	18	22	30	35	35	40	58	70	80	92	100
Rated operational current I_e/AC-6b et **400 V**	**A**	**14**	**18**	**22**	**29**	**36**	**36**	**44**	**58**	**72**	**87**	**87**	**108**
Insulation rating U_i	V	690							750			1000	
Permissible ambient temperature	^{0}C	- 25 to + 55											
Rated impuls wihtstand voltage U_{imp}	kV	8											
Consumption of electromagnet in cold state with U_n AC operated													
closing	VA	62				65			215			310	
p.f.		0,75				0,75			0,6			0,5	
closed	VA	7				8			26			26	
p.f.		0,3				0,3			0,29			0,24	
Coil voltage tolerances		0,85 - 1,1 Un											
Degree of protection		IP 20										IP 00 / IP 20	
Maximum permissible fuse ratings													
main circuit gL/gG	A	25	35	50	50	63	63	80	100	125	160	160	160
auxilliary circuit	A	16	16	16	16	16	16	16	16	16	16	16	16
Frequency of switching operations	s/h	240			120				100				
Electrical endurance	min.	200.000			150.000	100.000					85.000	120.000	75.000
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	16-35	16-35	16-50	35-50	50
multi-wire conductor with cable shoe	mm^2											(with IP 20) 50-70 (without IP 20)	
Terminal screw		M4	M4	M4	M4	M4	M5	M5	M8	M8	M8	M6 (with IP 20) M8 (without IP 20)	
Screw head		PZ2	PZ2	PZ2	PZ2	PZ2	Hexagon socket						
Tightening torque	Nm	1,2	1,2	1,2	1,4	1,6	2	2	4	4	4	3,5	
- 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		Pz1											
Tightening torque	Nm	0,8											
Loadability of auxiliary contacts rated continuous current I_{th}; 35^{0}C	A	10							16				
AC rated operational current I_e/AC15													
for 230V	A	6							10				
400V	A	4							6				
500V	A	2							4				
690V	A	1							2				
Weight	kg	0,32	0,32	0,32	0,34	0,45	0,52	0,52	1,51/1,60	1,53/1,62	1,61/1,70	2,42	2,47

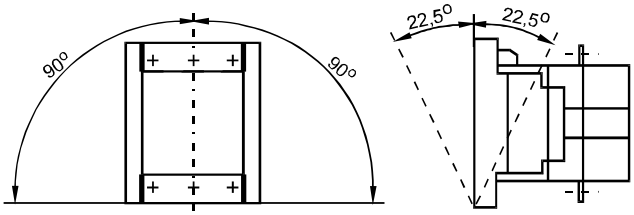
POSSIBLE INSTALLATION POSITION



CNNK 10, CNNK 12, CNNK 15,
CNNK 20, CNNK 25, CNNK 25E, CNNK 30

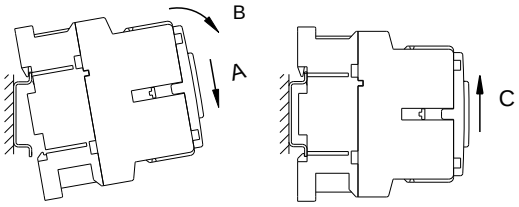


CNKM 40; CNKM 50, CNKM 60E

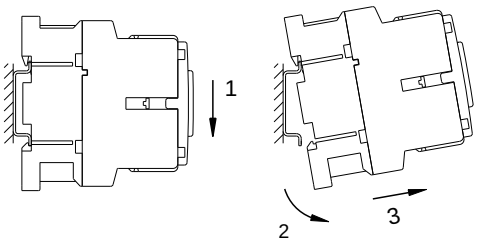


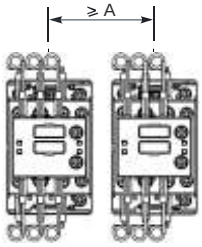
CNKM 60, CNKM 75

Mounting, of a contactor, steps: A,B and C.



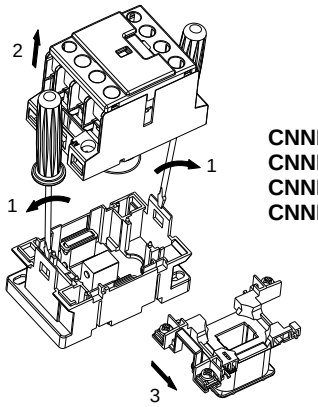
Unmounting, of a contactor, steps: 1, 2 and 3.



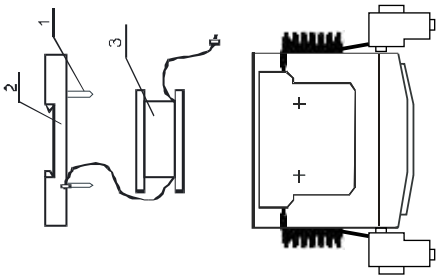


A= 60 - CNNK 10, CNNK 12,
CNNK 15, CNNK 20,
CNNK 25E, CNNK 25,CNNK 30
A=100 - CNKM 40 00, CNKM 50 00, CNKM 60E 00
A=124 - CNKM 40 22, CNKM 50 22, CNKM 60E 22
A=145 - CNKM 60, CNKM 75

REPLACEMENT OF THE COIL

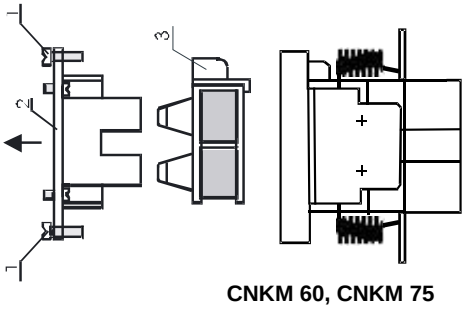


CNNK 10; CNNK 12;
CNNK 15; CNNK 20;
CNNK 25E
CNNK 25; CNNK 30



Unscrew pos.1
Lift the upper part pos.2
Replace the coil pos.3

CNKM 40; CNKM 50, CNKM 60E

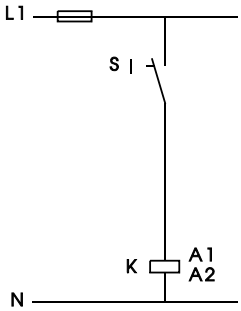


Undo the screws pos.1:
lift the plate pos.2;
replace the coil pos.3

CNKM 60, CNKM 75

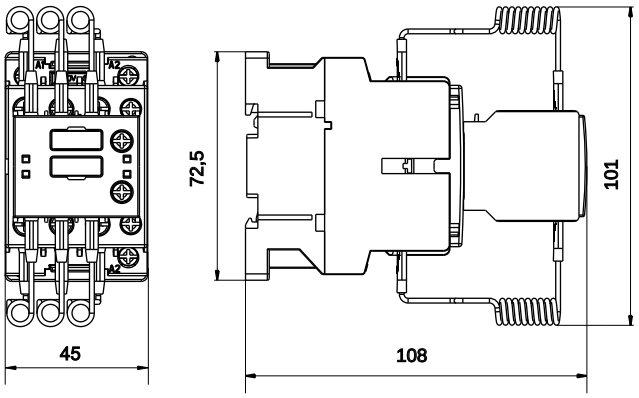
CONTROL DIAGRAM

With permanent button "TK"

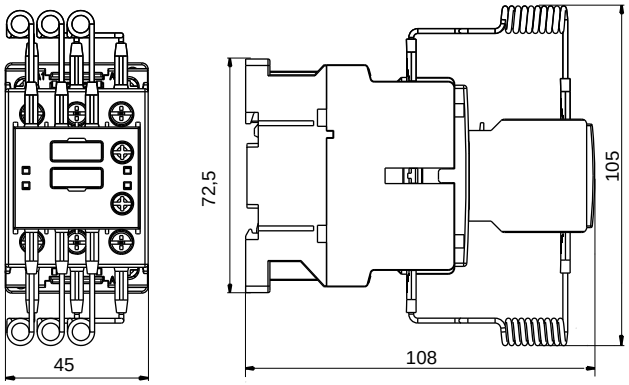


DIMENSION DRAWINGS (mm)

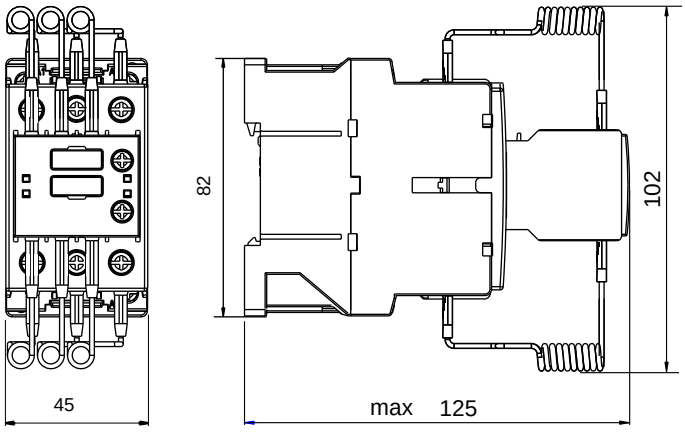
CNNK 10; CNNK 12; CNNK 15



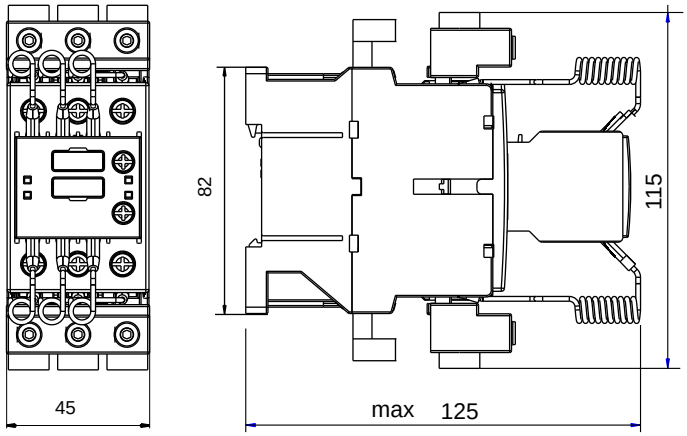
CNNK 20



CNNK 25E

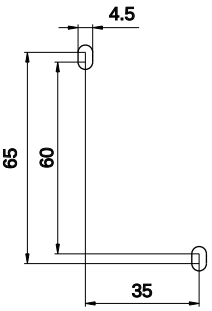


CNNK 25; CNNK 30

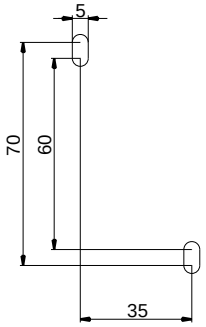


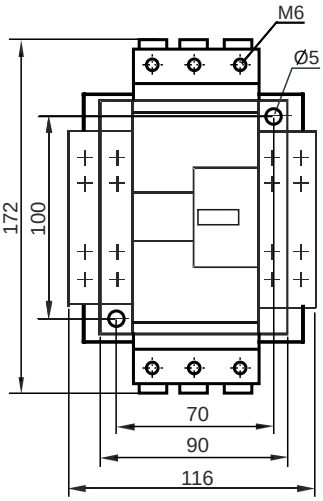
Driling plan (mm)

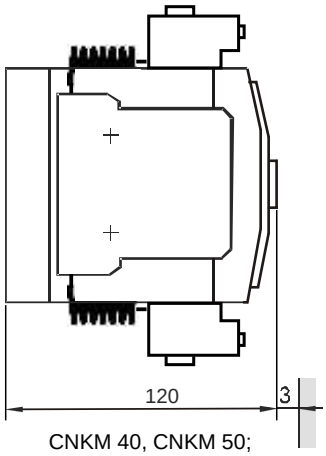
CNNK 10; CNNK 12; CNNK 15; CNNK 20



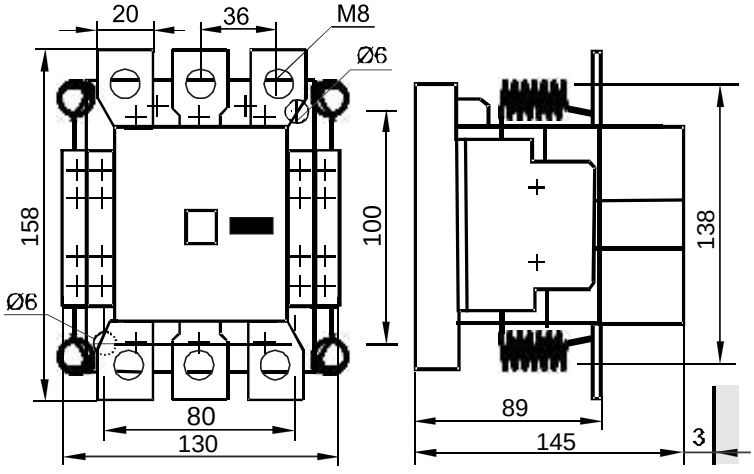
CNNK 25E; CNNK 25, CNNK 30



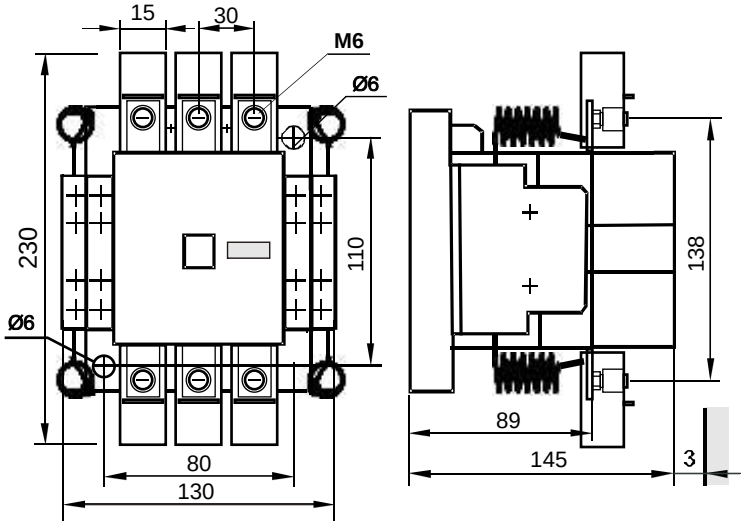




CNKM 40, CNKM 50; CNKM 60E

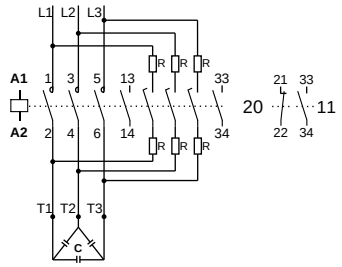


CNKM 60 and CNKM 75 without IP 20

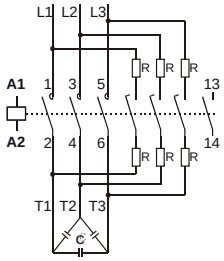


CNKM 60 and CNKM 75 with IP 20

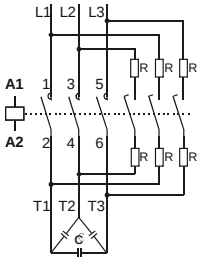
CONNECTION DIAGRAMS AND TERMINAL MARKINGS FOR SINGLE COMPENSATION



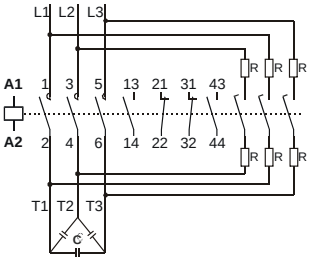
CNNK 10; CNNK 12
CNNK 15



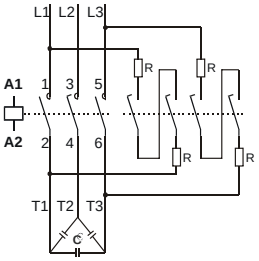
CNNK 20 10; CNNK 25E 10
CNNK 25 10, CNNK 30 10



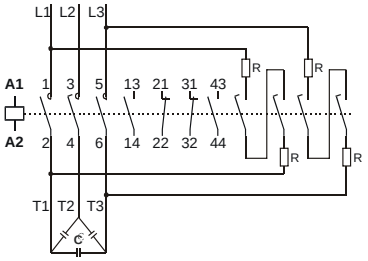
CNKM 40 00
CNKM 50 00



CNKM 40 22
CNKM 50 22



CNKM 60E 00



CNKM 60E 22, CNKM 60 22
CNKM 75 22

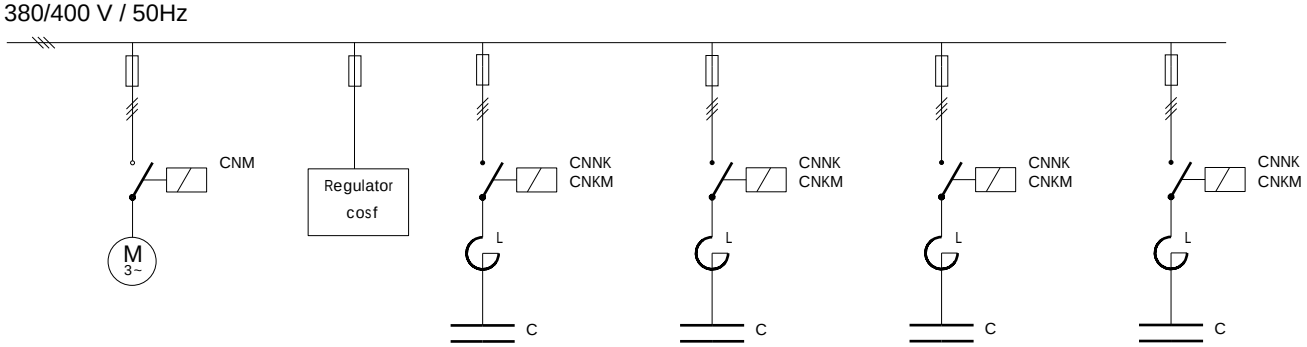
VERY IMPORTANT NOTE:

For single compensattion air coils or 3 - phase reactors (coils with magnetic core and air gap) are not necessary.
When the contactor is used for group compensation it's recommendable to use appropriate 3-phase filter circuit reactors (coils with magnetic core and air gap).
This will reduce the value of higher harmonics and will prevent resonant current to prevail.
At single compensation the power of selected contactor is according to capacitor rated power.
At group and central compensation, when reactors are not in use, one step higher rating of the contactor is recommendable.

Before switch the contactor in the circuit, capacitor must be discharged (the voltage at the terminals must be < 50 V).

During exploitation, current value must not exceed the declared values.

CONECTION DIAGRAM FOR GROUP (CENTRAL) COMPENSATION



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