

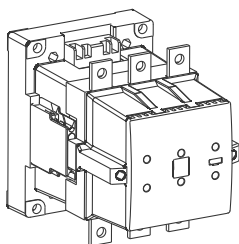


# RADE KONČAR KONTAKTORI I RELEI D.O.O.

## INSTRUCTIONS FOR USE AND MAINTENANCE FOR CONTACTORS

**CNM 110; CNM 140; CNM 170; CNM 200  
CNM 250; CNM 315; CNM 400**

### MOUNTING OF THE CONTACTOR, MAINTAENANCE AND CORRECT USE



CNM 250

IEC/EN 60947-4-1  
VDE 0660

#### TECHNICAL DATA:

Contactors are designed, tested and they are fully in accordance with CSA standards, also contactors are conformed with the international standard IEC/EN 60947-4-1 and national standards VDE 0660. For the rated data see the rating plate on the contactor upper side.

#### COIL CIRCUIT:

The rated coil voltage is marked on the coil. The excitation voltage should not deviate from the value of rated voltage more than +10% or -15%. A voltage drop on more than 15% during the closing action is not permissible.

#### INSTALLATION:

The contactor should be mounted in dry and clean rooms. Otherwise contactors should be built a cubicle or enclosed type should be used. Mount the contactor on a vertical plane surface by using M5 screws for CNM 110, M6 for CNM 140/170/200 and M10 for CNM 250/315/400, so that the terminal markings are in normal position for reading.

#### MAINTENANCE

Remove dust with compressed air. Foreign matter on the magnetic pole faces causes humming. If necessary clean the pole faces carefully. Do not use a chemical substances or sharp object for cleaning. If there is still a hum, replace the contactor (it has worn out). Replace the main contacts when they are worn down. They are worn down when the contacts resilience (see dist. "a" in Fig. A) is less than 0,5mm. Check the main contacts after a short-circuit and separate them, if necessary.

#### REPLACEMENT OF THE ARC CHUTE

Push in two pins with a screw-driver and turn them through 90: The arc chute can now be detached and replaced.

#### REPLACEMENT OF THE MAIN CONTACTS

Replacement of the moving contacts: lift the contact on one side, then pull it out together with the flexible spring on the same place as previous was. Replacement of the fixed contacts: undo the screws for fastening then fast on the new contact.

#### CONDUCTOR CROSS SECTIONS (mm<sup>2</sup>)

CONTACTOR		CNM 110	CNM 140	CNM 170	CNM 200	CNM 250	CNM 315	CNM 400
<b>MAIN CIRCUIT</b>								
Circular conductor with cable lug	mm <sup>2</sup>	25-50	25-70	50-120	50-120	70-150	70-240	2x150
Flat bat	mm	15x3	15x3	20x3	20x3	25x3	25x3	2x25x3
Protective conductor with cable lug	mm <sup>2</sup>	-	25-70	25-70	25-70	35-70	50-120	50-120
<b>AUXILIARY CIRCUIT</b>								
Single-wire conductor	mm <sup>2</sup>				1-2,5			
Multi-wire conductor with cable	mm <sup>2</sup>				0,75-1,5			

#### REPLACEMENT OF THE AUXILIARY CONTACT BLOCKS

If necessary replace the complete auxiliary contact block. The auxiliary contact block 1NO + 1NC can be replaced with double contact block 2NO + 2NC.

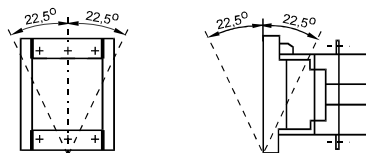
#### REPLACEMENT OF THE COIL

Undo the screws pos.1; lift the plate pos.2; replace the coil pos.3 (Fig.B).

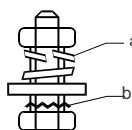
#### SPARE PARTS

When ordering, please quote the name of the part, the part number and quantity.

#### POSSIBLE INSTALLATION POSITIONS



#### CONNECTION OF THE MAIN CONDUCTORS



a - Spring washer  
b - Tooth lock washer

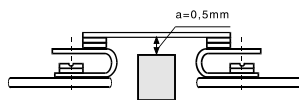


Fig.A

#### REPLACEMENT OF THE COIL

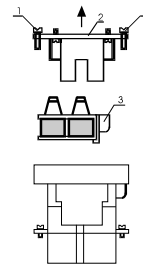
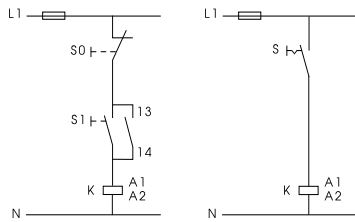


Fig.B

## CONTROL DIAGRAMS

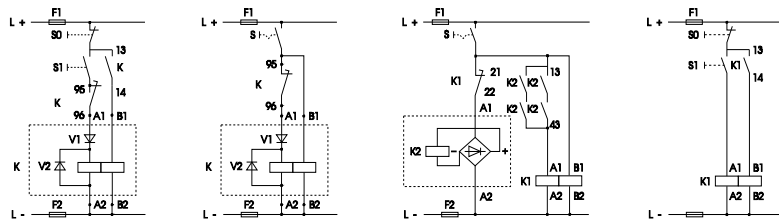
AC operation

DC operation



CNM 110

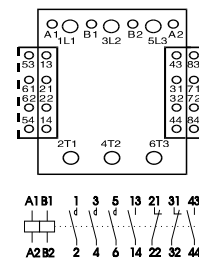
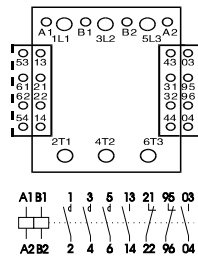
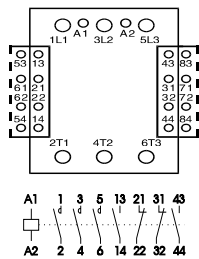
CNM 140 - CNM 200, CNM 250 - CNM 400



## CONNECTION DIAGRAMS AND TERMINAL MARKINGS

AC operation

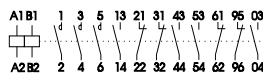
DC operation



CNM 110 22,  
CNM 140 22, CNM 170 22, CNM 200 22,  
CNM 250 22, CNM 315 22, CNM 400 22

CNM 110 22

CNM 140 22, CNM 170 22, CNM 200 22,  
CNM 250 22, CNM 315 22, CNM 400 22

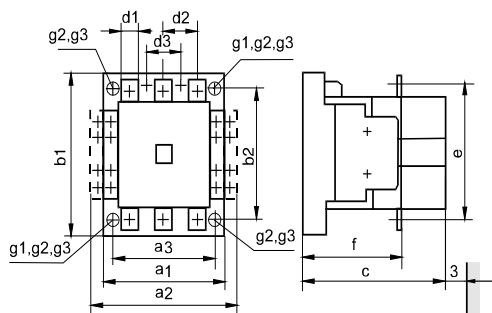


CNM 110 44,  
CNM 140 44, CNM 170 44, CNM 200 44,  
CNM 250 44, CNM 315 44, CNM 400 44

CNM 110 44

CNM 140 44, CNM 170 44, CNM 200 44,  
CNM 250 44, CNM 315 44, CNM 400 44

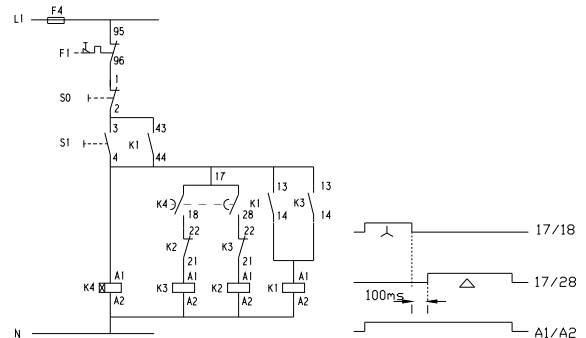
### MEASURING SKETCHES All dimensions are in (mm)



TYPE	a 1	a 2	a 3	b 1	b 2	c	d 1	d 2	d 3	e	f	g 1	g 2	g 3
CNM 110	100	125	80	132	110	142	15	30	24	113	86.5	∅6		
CNM 140	135	162	110	180	160	189	20	42	24	162	116	∅7		
CNM 170	135	162	110	180	160	189	20	42	24	162	116	∅7		
CNM 200	135	162	110	180	160	189	20	42	24	162	116		∅7	
CNM 250	160	187	130	200	180	226	25	48	24	178	141		∅10.5	
CNM 315	160	187	130	200	180	226	25	48	24	178	141		∅10.5	
CNM 400	160	187	130	200	180	226	25	48	24	178	141		∅10.5	

### IMPORTANT:

When used in star-delta starts the time between change over connection from star to delta must be bigger than 100ms which is achieved with electronic time relays.



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