



RADE KONCAR CONTACTOR **CNN60**
60A/30kW (AC3, 400V/50Hz); 85A(AC1)

Contactor type			CNN 60		
Mechanical endurance	make/brake operations		x10 ⁶	5	
Insulation rating			V	1000	
Permissible ambient temperature			°C	from -25 to +55	
Consumption of electromagnet in cold state with Un					
AC operated	closing		VA	155	
		P.F.		0,6	
	closed		VA	12	
		P.F.		0,29	
DC operated	closing		W	90	
	closed		W	3,5	
Coil voltage tolerances				0.85-1.1Un	
Duration of making and breaking					
(values are also valid for voltages of electromagnet from 0.8 to 1.1 Un for each in cold and warm state).					
Total breaking time is addition of opening time and duration of electric arc.					
AC operated	closing time		ms	10 to 24	
		opening time	ms	7 to 10	
	duration of electric arc	ms	10 to 15		
DC operated	closing time		ms	15 to 40	
	opening time		ms	100 to 120	
	duration of electric arc		ms	10 to 15	
Frequency of switching operations					
without thermal relay					
	utilization category	AC1	s/h	1000	
		AC2, AC3	s/h	750	
		AC4	s/h	250	
with thermal relay					
			s/h	15	
Resistivity to shocks (square shock)				9,2/5 and 5,4/10	
Short-circuit protection					
contactors without overload relays					
Main circuit					
With fuse links					
acc. To IEC 60947-4-1	Type of coord. "1"	gl/gG	A	100	
DIN VDE 0660 Part 102	Type of coord. "2"		A	50	
Sizes of connecting conductors					
for contact without thermal relay					
main circuit	Rigid solid		mm ²	1x6-50	
		standed	mm ²	2x6-25	
		multi-wire conductor with cable shoe	mm ²	1x6-35	
		standed with cable lug	mm ²	2x6-16	
		flatbar	mm	-	
	protective conductor with cable lug		mm ²		-
		Screw			M6
		Screw head			PZ2
		Tightening torque	Nm		3-4
		auxiliary circuit	single-wire conductor		mm ²
multi-wire conductor with cable shoe			mm ²	0.75-1.5	
Screw				M3.5	
Screw head				PZ2	
Tightening torque	Nm			0,8	

Loadability of auxiliary contacts

Rated continuous current I_{th} ; 35C		A	16
AC			
rated operational current $I_e/AC15$	230V	A	6
	400V	A	4
	500V	A	2,5
	690V	A	2,5
DC			
rated operational current $I_e/DC1$; L/R $\leq 1ms$	24V	A	10
	110V	A	3,2
	220V	A	0,9
	440V	A	0,33
	600V	A	0,22
rated operational current $I_e/DC13$	for 24V	A	10
	110V	A	1,8
	220V	A	0,9
	440V	A	0,27
	600V	A	0,18

Load carrying capacity of the main contacts

rated continuous current I_{th} ; 35C		A	85
AC1 utilization category			
rated current $I_e/AC1$		A	85
AC2 and AC3 utilization categories	for 230V	kW	18,5
(slip-ring and cage motors at 50Hz)	400V	kW	30
	690V	kW	37

AC4 utilization category

(electrical endurance of contacts:120.000)			
rated current	$I_e/AC4$	A	28
ratings of squirrel-cage motors at 50Hz for	230V	kW	7,3
	400V	kW	14
	500V	kW	16,2
	690V	kW	21,8

Load carrying capacity of contactors at switching on and off of a.c. capacitors

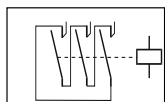
(electrical endurance amounts to 0.1 million switching operations)	I_e	A	
ratings of individual capacitors at 50 Hz for	230V	kvar	-
	400V	kvar	-
	500V	kvar	-
	690V	kvar	-
ratings of capacitor banks			
(minimum inductive reactance between two capacitors switched on in parallel amounts to $6\mu H$; 50 Hz)	for		
	230V	kvar	-
	400V	kvar	-
	500V	kvar	-
	690V	kvar	-

Application in stator circuit of motor

intermittent operation AC2			
stator current at duty factor in intermittent periodic duty	20%	A	103
	40%	A	98
	60%	A	87
	80%	A	80

Application in rotor circuit of motor

intermittent operation			
rotor current at duty factor in intermittent periodic duty	10%	A	163
	20%	A	163
	40%	A	155
	60%	A	138
	80%	A	127
continuous operation		A	127
permissible voltage of motionless rotor			
	starting	V	1500
	regulation	V	750
	counter current breaking	V	660

**Loadability by direct current**

DC1 utilization category, non-inductive loads $LR \leq 1 ms$			
rated operational current I_e			
through one pole	for 24 V	A	70
	60 V	A	30
	110 V	A	6
	220 V	A	1,2
	440 V	A	0,48
	600 V	A	0,35
through three poles connected in series	for 24 V	A	70
	60 V	A	70

	110 V	A	70
	220 V	A	70
	440 V	A	3
	600 V	A	1
utilization categories DC3 to DC5 series and shunt motors ($L/R \leq 15$ ms)			
rated operational current I_e through one pole	for 24 V	A	5
	60 V	A	2
	110 V	A	0,75
	220 V	A	0,2
	440 V	A	0,1
	600 V	A	0,08
through three poles connected in series	for 24 V	A	70
	60 V	A	70
	110 V	A	70
	220 V	A	3,5
	440 V	A	0,6
	600 V	A	0,35

