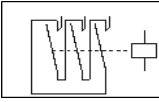




RADE KONCAR CONTACTOR **CNN90**
 90A/45kW (AC3, 400V/50Hz); 105A(AC1)

Contactor type		CNN 90	
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	204
	P.F. closed	VA	0,54
DC operated	closing	W	16
	closed	W	0,26
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 zrc.			
AC operated	closing time	ms	9 to 35
	opening time	ms	9 to 15
	duration of electric arc	ms	10 to 15
DC operated	closing time	ms	20 to 50
	opening time	ms	120 to 150
	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	600
	AC4	s/h	200
		s/h	15
with thermal relay			
Resistivity to shocks (square shock)			9,6/5 and 5,2/10
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	160
DIN VDE 0660 Part 102	Type of coord. "2"	A	80
Sizes of connection conductors			
for contact without thermal relay			
main circuit	Rigid solid	mm ²	
	standed	mm ²	25-70
	multi-wire conductor with cable shoe	mm ²	-
	standed with cable lug	mm ²	25-50
	flatbar	mm	-
	protective conductor with cable lug	mm ²	-
	Screw		M8
	Screw head		⬡
auxiliary circuit	Tightening torque	Nm	4-4.5
	single-wire conductor	mm ²	1-2.5
	multi-wire conductor with cable shoe	mm ²	0.75-1.5
	Screw		M3.5

Screw head Tightening torque		Nm	PZ2 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 ≤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	135
AC1 utilization category			
rated current I _e /AC1		A	105
AC2 and AC3 utilization categories			
	for 230V	kW	26
(slip-ring and cage motors at 50Hz)	400V	kW	45
	690V	kW	67
AC4 utilization category			
(electrical endurance of contacts:120.000)			
rated current	I _e /AC4	A	34
ratings of squirrel-cage motors at 50Hz for			
	230V	kW	8.7/10.4
	400V	kW	17/18
	500V	kW	21/24
	690V	kW	20/30
Load carrying capacity of contactors at swiyching on and off of a.c. capacitors			
(electrical endurance amounts to 0.1 milion switching operations)		I _e	A
ratings of individual capacitors at 50 Hz	for	230V	kvar
through one pole		400V	kvar
		500V	kvar
		690V	kvar
ratings of capacitor banks			
(minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;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	135
	40%	A	110
	60%	A	100
	80%	A	90
Application in rotor circuit of motor			
intermittent operation			
rotor current at duty factor in intermittent periodic duty			
	10%	A	193
	20%	A	193
	40%	A	173
	60%	A	158
	80%	A	138
continuous operation		A	138
permissible voltage of motionless rotor			
	starting	V	1800
	regulation	V	880
	counter current breaking	V	750
Loadability by direct current			
DC1 utilization category,non-inductive loads LR≤1 ms			
rated operational current I _e			
through one pole	for 24 V	A	90
	60 V	A	75
	110 V	A	12
	220 V	A	2,5
	440 V	A	0,6
	600 V	A	0,48

through three poles connected in series	for 24 V	A	100
	60 V	A	100
	110 V	A	100
	220 V	A	100
	440 V	A	6
	600 V	A	3,4
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	6
	60 V	A	3
	110 V	A	1,25
	220 V	A	0,35
	440 V	A	0,15
	600 V	A	0,1
through three poles connected in series	for 24 V	A	90
	60 V	A	90
	110 V	A	90
	220 V	A	3,8
	440 V	A	0,7
	600 V	A	0,4

