

RADE KONCAR CONTACTOR CNN60

60A/30kW (AC3, 400V/50Hz); 85A(AC1) In conformity with standard IEC 60947-4-1

Contactor type			CNN 60
lechanical endurance	make/brake operations	x10 ⁶	5
nsulation rating		V	1000
ermissible ambient ter		°C	from -25 to +55
	omagnet 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
oil voltage tolerances			0.85-1.1Un
uration of making and			
	voltages of electromagnet from		
.8 to 1.1 Un for each in o	7		
	dition of opening time and duration		
f electric arc.			
0	all a Cara Cara		101-04
C operated	closing time	ms	10 to 24
DC operated	opening time	ms	7 to 10
	duration of electric arc	ms	10 to 15
	closing time	ms	15 to 40
	opening time	ms	100 to 120
	duration of electric arc	ms	10 to 15
requency of switching	operations		
ithout thermal reley	operations		
	tion category AC1	s/h	1000
utiliza	AC2, AC3	s/h	750
	AC2, AC3	s/h	250
vith thermal relay		s/h	15
inter thornal rolay		0/11	9,2/5
esistivity to shocks	(square shock)	g/ms	and
		3	5,4/10
hort-circuit protection			-,
ontactors without overlo			
lain circuit	,		
Vith fuse links			
vitri luse iiriks			
cc. To IEC 60947-4-1	Type of coord. "1" ql/qG	A	100
cc. To IEC 60947-4-1	Type of coord. "1" gl/gG Type of coord. "2"	A	100 50
cc. To IEC 60947-4-1 IN VDE 0660 Part 102	Type of coord. "2"		
	Type of coord. "2" nductors		
cc. To IEC 60947-4-1 DIN VDE 0660 Part 102 Sizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay	Α	50
cc. To IEC 60947-4-1 DIN VDE 0660 Part 102 Sizes of connecting con	Type of coord. "2" nductors nal relay Rigid solid	A mm ²	50 1x6-50
cc. To IEC 60947-4-1 DIN VDE 0660 Part 102 Sizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed	A mm ² mm ²	50 1x6-50 2x6-25
cc. To IEC 60947-4-1 VIN VDE 0660 Part 102 Vizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe	A mm ² mm ² mm ²	50 1x6-50 2x6-25 1x6-35
cc. To IEC 60947-4-1 DIN VDE 0660 Part 102 Sizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed	A mm ² mm ²	50 1x6-50 2x6-25
cc. To IEC 60947-4-1 VIN VDE 0660 Part 102 Vizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug	A mm ² mm ² mm ² mm ²	50 1x6-50 2x6-25 1x6-35
cc. To IEC 60947-4-1 VIN VDE 0660 Part 102 Vizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe	A mm ² mm ² mm ²	50 1x6-50 2x6-25 1x6-35
cc. To IEC 60947-4-1 VIN VDE 0660 Part 102 Vizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug flatbar	A mm ² mm ² mm ² mm ² mm	50 1x6-50 2x6-25 1x6-35 2x6-16
cc. To IEC 60947-4-1 VIN VDE 0660 Part 102 Vizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug flatbar protective conductor with cable lug	A mm ² mm ² mm ² mm ²	50 1x6-50 2x6-25 1x6-35 2x6-16 -
cc. To IEC 60947-4-1 IN VDE 0660 Part 102 iizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug flatbar protective conductor with cable lug Screw	A mm ² mm ² mm ² mm ² mm	50 1x6-50 2x6-25 1x6-35 2x6-16 - - M6
cc. To IEC 60947-4-1 VIN VDE 0660 Part 102 Vizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug flatbar protective conductor with cable lug Screw Screw head	A mm ² mm ² mm ² mm mm	50 1x6-50 2x6-25 1x6-35 2x6-16 - - M6 PZ2
cc. To IEC 60947-4-1 IN VDE 0660 Part 102 izes of connecting cor or contact without therm nain circuit	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug flatbar protective conductor with cable lug Screw	A mm ² mm ² mm ² mm ² mm	50 1x6-50 2x6-25 1x6-35 2x6-16 - - M6
cc. To IEC 60947-4-1 IN VDE 0660 Part 102 izes of connecting cor or contact without therm nain circuit	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug flatbar protective conductor with cable lug Screw Screw head Tightening torque	A mm ² mm ² mm ² mm mm ² mm	50 1x6-50 2x6-25 1x6-35 2x6-16 - - M6 PZ2 3-4
cc. To IEC 60947-4-1 <u>N VDE 0660 Part 102</u> izes of connecting con or contact without therm hain circuit	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug flatbar protective conductor with cable lug Screw Screw head	A mm ² mm ² mm ² mm mm ² Mm mm ²	50 1x6-50 2x6-25 1x6-35 2x6-16 - - M6 PZ2
cc. To IEC 60947-4-1 VIN VDE 0660 Part 102 Vizes of connecting cor or contact without therm	Type of coord. "2" nductors nal relay Rigid solid standed multi-wire conductor with cable shoe standed with cable lug flatbar protective conductor with cable lug Screw Screw head Tightening torque	A mm ² mm ² mm ² mm mm ² mm	50 1x6-50 2x6-25 1x6-35 2x6-16 - - M6 PZ2 3-4

Screw head Tightening torque		Nm	PZ2 0.8
Loadability of auxiliary contacts Reated continuous current lth ; 40 °C		А	16
AC rated operational current le/AC15	230V	А	6
aled operational current le/ACTS	400V	A	4
	500V	A	2.5
	690V	А	2.5
	0.01		10
ated operational current le/DC1; L/R ≤1ms	24V	A	10
	110V 220V	A	3.2 0.9
	440V	A	0.33
	600V	А	0.22
rated operational current le/DC13 f	or 24V	А	10
	110V	А	1.8
	220V	A	0.9
	440V	A A	0.27
oad carrying capacity of the main contacts	600V	A	0.18
ated continuus current ith ; 35C AC1 utilization category		A	85
ated current le/AC1		А	85
	r 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) ated current	le/AC4	А	28
atings of squirrel-cage motors at 50Hz for	230V 400V	kW kW	7.3 14
	400V 500V	kW	14
	690V	kW	21.8
Load carrying capacity of contactors at switching on and off of a.c. capacitors felectrical endurance amounts to 0.1 milion switching ope	le	А	
atings of individual capacitors at 50 Hz for	rations) 230V 400V 500V 690V	kvar kvar kvar kvar	- - -
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6µH;50 Hz for	230V 400V 500V 690V 230V 400V 500V	kvar kvar kvar kvar kvar kvar	-
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for	230V 400V 500V 690V 230V 400V	kvar kvar kvar kvar kvar	-
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2	230V 400V 500V 690V 230V 400V 500V	kvar kvar kvar kvar kvar kvar	-
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2	230V 400V 500V 690V 230V 400V 500V 690V	kvar kvar kvar kvar kvar kvar kvar	- - - - - - -
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2	230V 400V 500V 690V 230V 400V 500V	kvar kvar kvar kvar kvar kvar	- - - - - - - - - - - - - - - - - - -
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μ H;50 Hz	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60%	kvar kvar kvar kvar kvar kvar kvar kvar	98 87
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor intermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor intermittent operation	230V 400V 500V 690V 230V 400V 500V 690V 20% 40%	kvar kvar kvar kvar kvar kvar kvar kvar	98
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor intermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80%	kvar kvar kvar kvar kvar kvar kvar A A A A	98 87 80
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor ntermittent operation	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80%	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor ntermittent operation	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80%	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor ntermittent operation	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40%	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor ntermittent operation	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80%	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor ntermittent operation rotor current at duty factor in intermittent periodic duty intermittent operation continuous operation	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80%	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138
ratings of individual capacitors at 50 Hz for ratings of capacitor banks minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty for Application in rotor circuit of motor ntermittent operation corr current at duty factor in intermittent periodic duty for Application in rotor circuit of motor ntermittent operation corr current at duty factor in intermittent periodic duty for Application in rotor circuit of motor ntermittent operation corr current at duty factor in intermittent periodic duty for Application in rotor circuit of motor ntermittent operation corr current at duty factor in intermittent periodic duty for Application in rotor circuit of motor ntermittent operation corrent at duty factor in intermittent periodic duty for Application in rotor circuit of motor for for for <	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40% 60% 80%	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127 127
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor ntermittent operation rotor current at duty factor in intermittent periodic duty () () () () () () () () () ()	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80%	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor intermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor intermittent operation rotor current at duty factor in intermittent periodic duty IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40% 60% 80% starting ulation	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127 127 127 1500
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor intermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor intermittent operation rotor current at duty factor in intermittent periodic duty Implication in comparison for continuous operation permissible voltage of motionless rotor sreg	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40% 60% 80% starting ulation	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127 127 127 1500 750
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor intermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor intermittent operation rotor current at duty factor in intermittent periodic duty I I I I I I I I I I I I I I I I I I I	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40% 60% 80% starting ulation eaking	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127 127 127 1500 750 660
ratings of individual capacitors at 50 Hz for ratings of capacitor banks minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor ntermittent operation otor current at duty factor in intermittent periodic duty	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40% 60% 80% starting ulation eaking	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127 127 127 1500 750 660 750 660
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor ntermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor ntermittent operation rotor current at duty factor in intermittent periodic duty	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40% 60% 80% starting ulation eaking pr 24 V 60 V	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127 127 127 1500 750 660 750 660
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor intermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor intermittent operation rotor current at duty factor in intermittent periodic duty I I I I I I I I I I I I I I I I I I I	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40% 60% 80% starting ulation eaking pr 24 V 60 V 110 V	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127 127 127 1500 750 660 70 30 6
ratings of individual capacitors at 50 Hz for ratings of capacitor banks (minimum inductive reactance between two capacitors switched on in parallel amounts to 6μH;50 Hz for Application in stator circuit of motor intermittent operation AC2 stator current at duty factor in intermittent periodic duty Application in rotor circuit of motor intermittent operation rotor current at duty factor in intermittent periodic duty I I I I I I I I I I I I I I I I I I I	230V 400V 500V 690V 230V 400V 500V 690V 20% 40% 60% 80% 10% 20% 40% 60% 80% starting ulation eaking pr 24 V 60 V	kvar kvar kvar kvar kvar kvar kvar kvar	98 87 80 163 163 155 138 127 127 127 1500 750 660 750 660

CNN 60	CNN 60 + BP 2 (BP 4)	CNN 60 + 2xBP3		Drilling plan (mm)
		440 V 600 V	A A	0.6 0.35
		220 V	A	3.5
		110 V	A	70
		60 V	A	70
through three poles connected in series		for 24 V	A	70
		600 V	A	0.08
		440 V	A	0.1
		220 V	A	0.2
		110 V	A	0.75
0 1		60 V	А	2
through one pole		for 24 V	А	5
rated operationa	al current le			
series and shunt	t motors (L/R \leq 15 ms)			
0	ories DC3 to DC5			
		600 V	A	1
		440 V	A	3
		220 V	A	70
		110 V	A	70
		60 V	A	70
through three po	ples connected in series	for 24 V	A	70

