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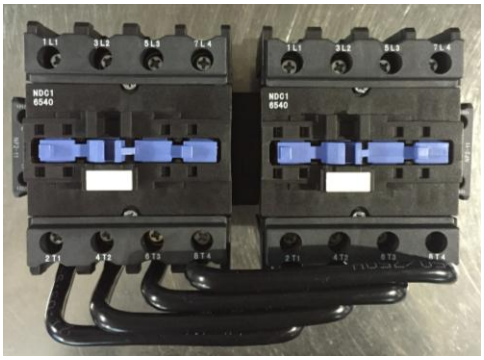
1、Application

NDC1N-09~95 series of directional contactor have the AC 50Hz (or 60Hz) and the rated insulation voltage of 690V, and are mainly used for the electric circuit with the rated working voltage of 415A and the rated working current of 44A as well as the motor and dual power control for controlling reversible operation or reverse braking. They can be used as magnetic starters with the appropriate thermal overload relays to protect the circuit in which overload may occur.

Outline sketch of the contactor (only for reference)

(Add two sets of NF1)



(Add two sets of NF2)

3、Model implications of the contactor

ND C 1 N — □ □ □ □ □

- Special place of use: "blank" stands for conventional products; "TH" stands for hot and humid model
- Voltage specifications
- Coil type code: AC、DC
- Number of contacts: the number of auxiliary contacts of three-pole contactor is represented by two digits and the tens digit is the logarithm of normally open contacts. The ones digit is the logarithm of nomally closed contacts. Number of main contacts of four-pole contactor: "40" four normally open main contacts.
- Basic specification code: by the AC-3 Ie value of the amperage in 415V
- Directional Contactor
- Design code
- AC contactor code
- "Nader" brand low-voltage electrical appliance

4、Technical Parameter

4.1 Technical parameters of main products

Model			NDC1(N)-09	NDC1(N)-12	NDC1(N)-18	NDC1(N)-25	NDC1(N)-32	NDC1(N)-38	NDC1(N)-40	NDC1(N)-50	NDC1(N)-65	NDC1(N)-80	NDC1(N)-95
Rated operating current Ie /A	AC-3	415V	9	12	18	25	32	38	40	50	65	80	95
		690V	6.6	8.9	12	18	21	21.5	34	39	42	49	49
	AC-4	415V	3.5	5	7.7	8.5	12	13.9	18.5	24	28	37	44
		690V	1.5	2	3.8	4.4	7.5	8	9	12	14	17.3	21.3
Conventional thermal current Ith A			25	25	32	40	50	50	60	80	80	125	125
Nominal insulation voltage Ui V			1000										
Rated operational voltage Ue V			380/415 660/690										
AC-3 (6Ie、Ie)	Electrical life		100×10^4	100×10^4	100×10^4	100×10^4	80×10^4	80×10^4	80×10^4	60×10^4	60×10^4	60×10^4	60×10^4
	Operating frequency h^{-1}		1200	1200	1200	1200	600	600	600	600	600	600	600
AC-4 (6Ie、6Ie)	Electrical life		20×10^4	20×10^4	20×10^4	20×10^4	20×10^4	15×10^4	15×10^4	15×10^4	15×10^4	10×10^4	10×10^4
	Operating frequency h^{-1}		300										
Auxiliary contact	Agreed thermal current of the free air Ith A		10										
	Electrical life	AC-15 (360VA)	100×10^4				80×10^4			60×10^4			
		DC-13 (33W)											
	Minimum connected load		17V 5mA										
Coil	Rated control voltage Us V		AC(50/60Hz):24、36、48、110、220/230、240、380/400、415、440										
	Pull-in voltage V		65%Us～120%Us						75%Us～110%Us				
	Discharge voltage V		20%Us～60%Us										
	50Hz AC	Starting	65	65	65	100	100	100	200	200	200	200	200

	Coil power VA	Caging	8	8	8	11	11	11	20	20	20	20	20
Electrical life			1000×10^4				800×10^4					600×10^4	
Amphenol connector Wireability mm^2 (min/max)	Non-prefabricated terminal soft cord	1	1/4		1.5/6	1.5/10	2.5/10		2.5/25			4/50	
		2	--		--	--	--		2.5/16			4/25	
	Prefabricated terminal soft cord	1	1/4		1/6	1/6	1/10		2.5/25			4/16	
		2	--		--	--	--		2.5/10			4/16	
	Prefabricated terminal hard cord	1	1/4		1.5/6	1.5/6	1.5/10		2.5/16			4/50	
		2	--		--	--	--		2.5/16			4/25	

Table 1: Control power meter

Model of directional contactor	Agreed thermal current of the free air Ith/A	AC-4 usage type			
		Rated operating current Ie/A		The maximum power of the controllable three-phase squirrel-cage motor /kW	
		415V	690V	415V	690V
NDC1N-09	25	3.5	1.5	1.5	1.1
NDC1N-12	25	5	2	2.2	1.5
NDC1N-18	32	7.7	3.8	3.7	3
NDC1N-25	40	8.5	4.4	4	3.7
NDC1N-32	50	12	7.5	5.5	5.5
NDC1N-38	50	13.9	8	5.5	5.5
NDC1N-40	60	18.5	9	7.5	7.5
NDC1N-50	80	24	12	11	10
NDC1N-65	80	28	14	15	11
NDC1N-80	125	37	17.3	18.5	15
NDC1N-95	125	44	21.3	22	18.5

4.2 Appendix technical parameters

4.2.1 Auxiliary contactor block

Parameter / Model	NF1/NF2
Up to standard	IEC60947-5-1 GB/T 14048.5
Rated insulation voltage Ui V	1000V
Rated operating voltage Ue V	AC 380/415、660/690 DC:220
Agreed thermal current of the free air Ith A	10A

Rated operating current Ie A	AC-15	380V	0.95
		415V	0.95
		480V	0.5
	DC-13(33W)		0.15
Minimum connected load			17V 5mA
Operating frequency h^{-1}			2400
Life	Mechanical life Ten thousand		1000
	Electrical life Ten thousand		120
Insulation resistance MΩ			10
Power frequency withstand voltage (V)			1890 1min
Wiring capacity of terminal mm2 (min/max)	Soft cord	1 or 2	2.5
	Hard cord	1 or 2	4
Torque of connection screw N:m			0.8~1.2

4.2.2 Delay auxiliary contact module (air type)

Parameter / Model			NS1
Up to standard			IEC60947-5 GB/T 14048.5
Rated insulation voltage Ui V			690V
Rated operating voltage Ue V			AC 380 DC:220
Agreed thermal current of the free air Ith A			10A
Rated operating current Ie A	AC-15(360VA)		0.95
	DC-13(33W)		0.15
Minimum connected load			17V 5mA
Operating frequency h-1			1200
Life	Mechanical life Ten thousand		300
	Electrical life Ten thousand		50
Insulation resistance MΩ			10
Power frequency withstand voltage (V)			1890 1 分钟
Delay repetition error			±5%
Delay stability error			±15%
Temperature error			±0.3%
Wiring capacity of terminal mm2 (min/max)	Soft cord	1 or 2	2.5
	Hard cord	1 or 2	4

Torque of connection screw N :m	0.8-1.2

Note: NF1/NS1 can only choose one of the two; NF2 can choose two sets, which are respectively installed on the left and right sides of the contactor.

4.2.3 Coil surge suppression module

Installation mode	Protection type	Voltage of coil applied	Specifications and model	Contactor applied	Main performance index
Plug-in Plugged into the A1 and A2 terminals mounted on the contactor coil	Voltage dependent resistor	AC 24V~48V	NG1-2NRE	NDC1N-09~38	a) The maximum transient overvoltage limit is 2Uc. b) The contactor release time is about 1.1 to 1.5 times of the normal release time.
		AC 50V~127V	NG1-2NRG	NDC1N-09~38	
		AC 110V~240V	NG1-2NRU	NDC1N-09~38	
		AC 380V~415V	NG1-2NRN	NDC1N-09~38	
	Resistance-capacitance circuit	AC 24V~48V	NG1-2RCE	NDC1N-09~95	a) The maximum transient overvoltage is limited to 3Uc, and the maximum oscillation frequency is limited to 400Hz. b) The contactor release time is about 1.2 to 2 times of the normal release time.
		AC 50V~127V	NG1-2RCG	NDC1N-09~95	
		AC 110V~240V	NG1-2RCU	NDC1N-09~95	
		AC 380V~415V	NG1-2RCN	NDC1N-09~95	

5、Working condition

1）Free from acidic, alkaline or other corrosive gases in the ambient air.

2）Temperature：

Storage：-60℃～+80℃；

Operating：-25℃～+40℃；

Maximum allowable temperature：-40℃～+70℃[1)]。

3）Altitude：

Normal condition：≤3000m；

Maximum allowable use：≤5000m[2)]。

4）Humidity requirements：

Under normal use, the limit humidity shall not exceed 95%, the duration shall not exceed 24h, and measures to prevent condensation shall be taken. The environmental humidity is associated with the temperature; at high temperature, the humidity shall be low; if the temperature exceeds + 40 ℃, relative humidity shall be no more than 50%.

1), 2) please contact our company for the capacity reduction plan.

6、Wiring diagram

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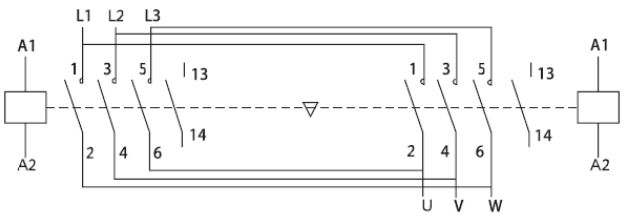
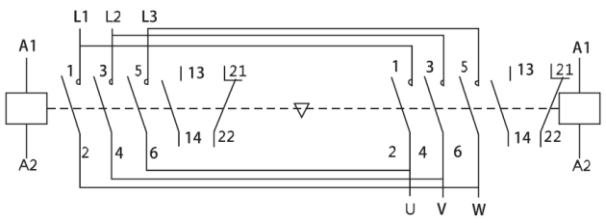
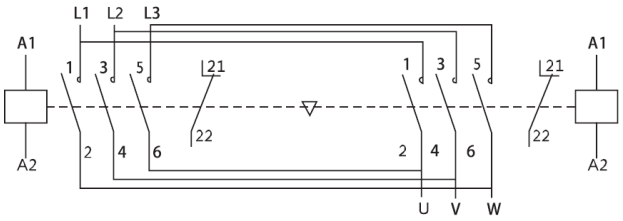
NDC1N-0910～3810



NDC1N-4011～9511

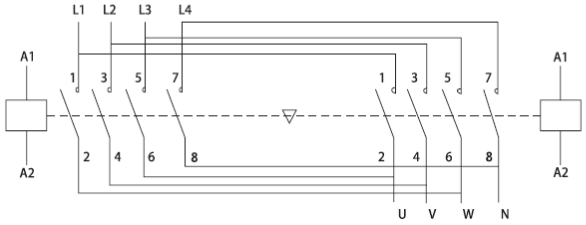


NDC1N-0901～38011

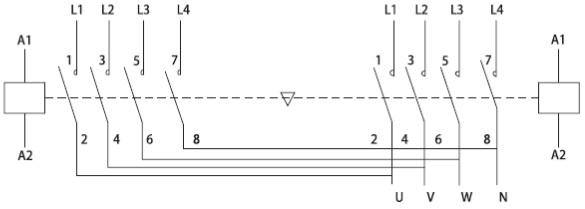


NDC1N-0940～9540

a．控制可逆运转时接线图



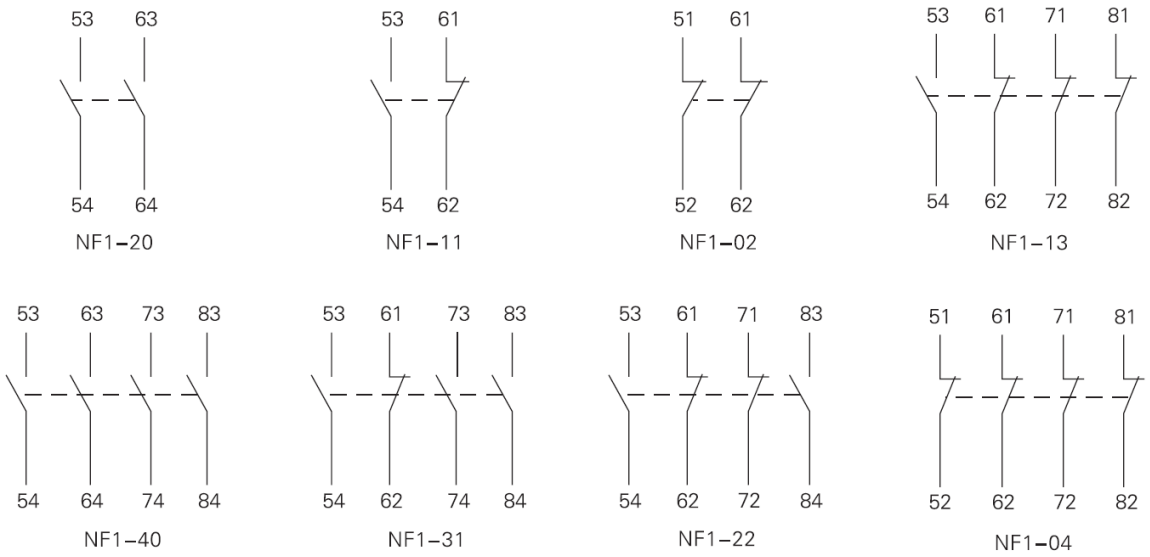
b. 控制双电源切换时接线图



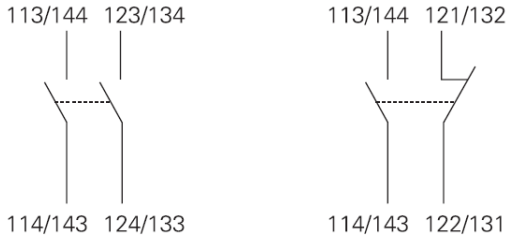
a. Wiring diagram for control of reversible operation

b. Wiring diagram for the control of switching between two power supplies

NF1 auxiliary contact set wiring diagram



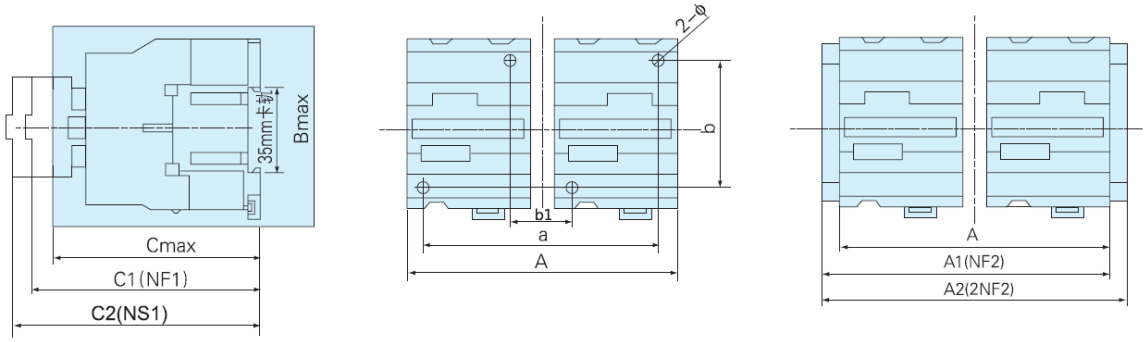
NF2 auxiliary contact set wiring diagram



NS1 air delay head wiring diagram

7、Outline and installing dimensions

7.1 NDC1N-09~38 Outline and installing dimensions



7.2 NDC1N-40~95 Outline and installing dimensions

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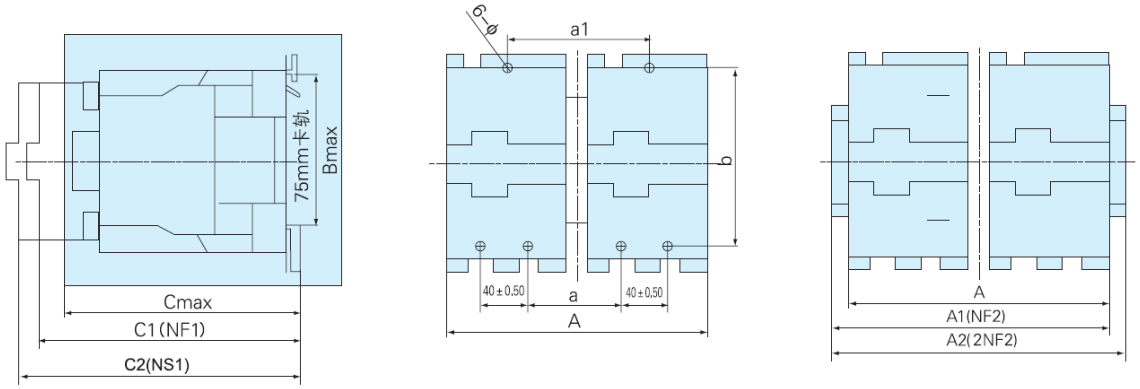


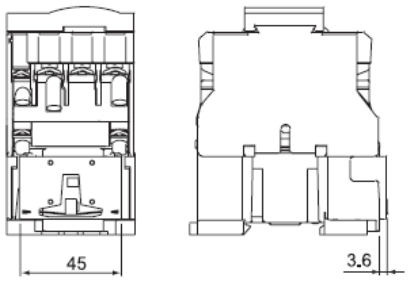
Unit: mm

Contactor type number	A	A1	A2	Bmax	Cmax	a	a1	b	b1	C1	C2	Φ
NDC1N-09~12 (including four-pole)	104	118	131	85	93	95±0.7	-	50/60 (±0.5)	26	115	135	4.5
NDC1N-18 (including four-pole)	105	119	132	86	90	95±0.7	-	50/60 (±0.5)	26	120	140	4.5
NDC1N-25 (including four-pole)	128	142	154	98	102	112±1	-	50/60 (±0.5)	32	128	148	4.5
NDC1N-32~38				100	120				32	133	153	
NDC1N-40~65	166	178	192	138	145	50±0.5	90±0.7	100/110 (±1.1)	-	149	169	6.5
NDC1N-4040~6540	182	194	205	146	162	57±0.5	97±0.7					
NDC1N-80~95	181	194	205	146	162	57±0.5	96±0.7		-	156	176	
NDC1N-8040~9540	205	220	232	152	170	71±0.7	111±1					

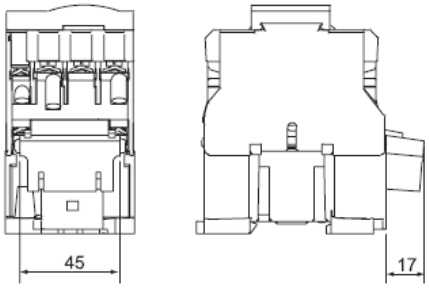
Note 1：C1：NDC1N+NF1；C2：NDC1N+NS1；A1：NDC1N+NF2；A2：NDC1N+2NF2；"Max" is the maximum value of its corresponding size.

Note 2：Unnoted tolerance 1mm.

Contactor+NG1



NG1-1 20/5000 Outline of coil surge suppression module when clamping the contactor



NG1-2 Outline of coil surge suppression module when mounting the contactor

8、Installation Mode

NDC1N-09~38: Bolt installation or installed on 35mm standard guide rail;

NDC1N-40~95: Bolt installation or installed on 35mm, 75mm standard guide rail.

9、Packaging and Storage

Each set of assembled product is packed in a case, which should be stored in a warehouse with the air ventilation and the temperature between -60℃ and +80℃. No acidic alkaline or other corrosive gas exists in the ambient air in the warehouse.

10、Accessories and Delivery List

User manual, certificate of qualification.

11、Precautions

1） The installation site of the product should not be shaky or vibrant.

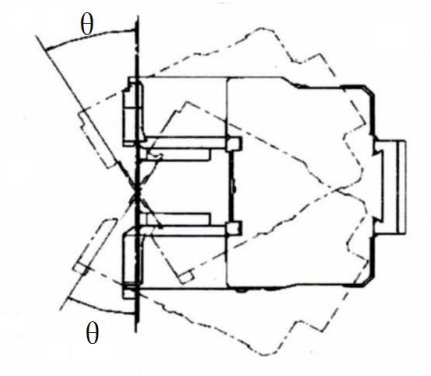
2）For vertical installation of the product, the gradient between the installation surface and the horizontal plane is no more than ±5°;

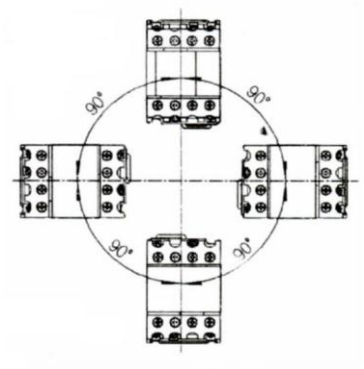
3）Reliable cabling(see Table 2 below for tightening torque of wiring screws) is required to prevent the terminals from being burnt out due to abnormal heat at the terminals;

Table 2：Tightening torque of connection screw Unit：N.m

Specifications	NDC1(N)-09～18	NDC1(N)-25～38	NDC1(N)-40～65	NDC1(N)-80～95
Tightening torque of main terminal	1.7	2.5	5	9
Auxiliary & coil end tightening torque	1.7	1.2	1.2	1.2

Appended Drawings Installation angle diagram:





θ：standard installation±5°，maximum installation ±30°。