

Shanghai Liangxin Electrical Co., Ltd.

Product Specification of AC Contactor

(IPD-ENG-DEV-T20 A1 2016-09-23)

Product Name: AC Contactor

Product Model: NDC3(GV、N)-40(11、11S)~95(11、11S)

Date: 20190630

Prepared by	Wang Xingfeng	Date	2019-6-30
Reviewed by	Zhu Hua	Date	2019-6-30
Approved by	Luo Guorui	Date	2019-6-30

Revision History					
Version	Revision Reason/Content	Implementati on Date	Prepared by	Reviewe d by	Approve d by
0	New addition	20190523	Wang Xingfeng	Zhu Hua	Luo Guorui
1	1、NDC3GV-40/50/65/80 抗冲击振动能力从 10gn 改为 8gn。 2、将平均吸合功耗改为最大吸合功耗。 3、将吸合时间 20~35ms 改为 12~35ms。 4、根据 CCC 描述更改规格型号说明。 5、增加外形及安装尺寸公差	20190630	Wang Xingfeng	Zhu Hua	Luo Guorui

1. Applicable Scope and Purpose

The NDC3(GV、N)-40(11、11S)~95(11、11S) AC contactors have the AC 50/60Hz and the rated insulation voltage of 1000V, and are mainly used for the AC circuit with the rated voltage of 415A and the rated working current of 40~95A as well as the AC-3 utilization category for frequently starting & controlling AC motors. Reversible contactors can control the forward and reverse braking of the motors; can be installed with the appropriate overload relays to form the magnetic starters, to protect the circuit in which overload may occur.

2. Picture of the Product



3. Specification and Model Description

ND C 3 -

1 2 3 4 5 6 7 8 9

SN	SN Description	NDC3
1	Enterprise code	ND Nader brand low-voltage electrical appliance
2	Product code	C AC contactor
3	Design SN	3
4	Derived code	GV AC/DC control contactor, no code for AC control contactor
5	Derived code	N Reversible contactor, no code for a general AC product
6	Basic specification	Represents the amperage of Ie value for use in AC-3 category at 415V
7	Number of auxiliary contacts	The ten-digit number is the logarithm of the auxiliary NO contact; the single-digit number is the logarithm of the auxiliary NC contact; no code represents that no auxiliary contact is available
8	Making capacity of the auxiliary contact	Blank for the conventional type (17V 5mA), S for the small signal-making type (5V 3mA)
9	Customer code	Expressed in letters or numbers

4. Main Technical Parameters

Parameter name			Description of the specific parameters				
Specification			NDC3-40	NDC3-50	NDC3-65	NDC3-80	NDC3-95
Number of poles			3	3	3	3	3
Agreed thermal current of the free air Ith/A			60	80	80	125	125
Rated current (A)	AC-1	415V	60	80	80	125	125
		690V	60	80	80	125	125
	AC-3	415V	40	50	65	80	95
		690V	32	35	39	48	48
	AC-4	415V	33	41	55	66	79
		690V	21	21	21	40	40
Average resistance per pole mΩ		Ith 50Hz	1.5	1.5	1.5	0.8	0.8
Power dissipation W per pole		AC-3	2.4	3.7	6.3	5.1	7.2
		AC-1	5.4	9.6	9.6	12.5	12.5
Rated working voltage (V)			AC220/230/240V , AC380/415V , AC660/690V				
Insulation voltage Ui			1000V				
Impulse withstand voltage			8kV				
Rated control voltage (50/60Hz)			24V, 36V, 48V, 110V, 220/230V, 380V, 400/415V, 440V(50/60Hz) (AC products); AC/DC24-60V, AC/DC48-130V, AC/DC100-250V (AC/DC control products)				
Control voltage range		Pull-in	0.85Uc~1.1Uc 60℃ in the warm state				
		Release	0.2~0.6Uc (AC product)				
			0.1~0.6Uc (AC/DC product)				
Pull-in power consumption 20℃ Uc		AC product	≤200VA				≤300VA
		DC product	≤60W				≤90W
Retention power consumption 20℃ Uc		AC product	15VA/5W				26VA/9W
		DC product	3W				
Action time		From the coil power-on to the closing of the main contact	12-30ms (AC product)				12-35ms (AC product)
			42-100ms (AC/DC product)				
		From the coil power-off to the main off-contact	4-20ms (AC product)				6-20ms (AC product)
			19-105ms (AC/DC product)				
Rated making		415V	10Ie(AC-3)				

capacity A							
Rated breaking capacity A	415V	8Ie(AC-3)					
Ultimate making capacity A	415V	800	900	1000	1100		
Ultimate breaking capacity A	415V	800	900	1000	1100		
Mechanical life at Uc		6 million times (single set), 1 million times (NDC3N reversible contactor)					4 million times (single set), 1 million times (NDC3N reversible contactor)
Electrical life	AC-1	415V	1.3 million times/600 times/hour	1.2 million times/600 times/hour	1.25 million times/600 times/hour	0.8 million times/600 times/hour	1.25 million times/600 times/hour
	AC-3	415V	1.6 million times/600 times/hour	1.5 million times/600 times/hour	1.5 million times/600 times/hour	1.5 million times/600 times/hour	1.2 million times/600 times/hour
	AC-4	415V	55,000 times/150 times/hour	36,000 times/150 times/hour	48,000 times/150 times/hour	39,000 times/150 times/hour	30,000 times/150 times/hour
Short time withstand current (starting from the cold state, $\theta \leq 40^{\circ}\text{C}$, at least 15 minutes for the no current duration)	1s		720A	810A	900A	990A	1100A
	10s		320A	400A	520A	640A	800A
	1min		165A	208A	260A	320A	400A
	10min		72A	84A	110A	135A	135A
Connection capacity of the main circuit	Soft wire mm ² Without wiring terminals		1...35 1 piece; 1...25 and 1...35 two pieces				2.5...70 1 piece; 2.5...50 and 2.5...70 two pieces
	Soft wire mm ² With wiring terminals		1...35 1 piece; 1...25 and 1...35 two pieces				2.5...70 1 piece; 2.5...50 and 2.5...70 two pieces
	Hard wire mm ² Without wiring terminals		1...35 1 piece; 1...25 and 1...35 two pieces				2.5...70 1 piece; 2.5...50 and 2.5...70 two pieces
	Tightening torque N.m		4				6
Auxiliary contact	Rated insulation voltage		690V				
	Impulse withstand		6kV				

	voltage		
	Agreed thermal current of the free air I _{th}		10A
	Utilization category		AC-15 DC-13
	Rated operating voltage/current	AC-15	400V 2.4A
		DC-13	250V 0.3A
	gG fuse protection		10A
	Minimum connected load		Conventional type: 17V/5mA; small signal type: 5V/3mA
	Non-overlapping time between NC and NO		≥1.5ms
	Electrical life		1.5 million times
	Mechanical life		6 million times
Auxiliary contact and control circuit	Conne ction capaci ty	Hard wire	1 piece/2 pieces1...4mm ²
		Non-pre fabricate d end cord	1 piece/2 pieces0.75...2.5 mm ²
		Prefabri cated end cord	1 piece/2 pieces0.75...2.5 mm ²
	Wiring screw		M3.5
	Tightening torque		1.2N.m

5. Normal Working Environment

5.1 Ambient temperature: Standard operating temperature: -25℃~+60℃, maximum operating temperature (at the rated control voltage, open space): -40℃~+70℃; storage temperature: -60℃~+80℃.

5.2 Altitude conditions: Reduced capacity isn't considered below 3,000m, the maximum operating altitude is 5,000m.

3000~5000m Derating Factor

	3500m	4000m	4500m	5000m
Insulation Voltage Derating Factor	0.9	0.8	0.7	0.6
Current Derating Factor	0.92	0.9	0.88	0.86

5.3 Pollution grade: Grade 3.

5.4 Protection grade: IP10 for the main circuit terminal, IP20 for the coil terminal, IP20 for the self-equipped auxiliary terminal.

5.5 Installation Category: III.

5.6 Anti-vibration performance:

NDC3(GV、N) -40(11、11S)~80(11、11S): Anti-vibration performance 5...300 Hz contactor opened 2gn, contactor closed 4gn.

NDC3(GV、N)-95(11、11S): Anti-vibration performance 5...300 Hz contactor opened 2gn, contactor closed 3gn.

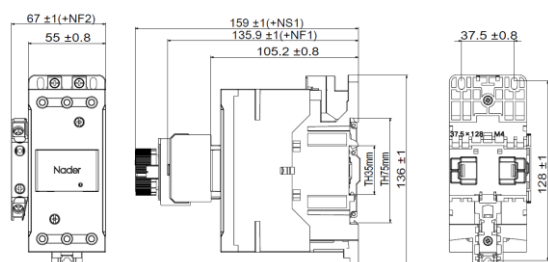
5.7 Impact resistance:

NDC3-40(11、11S)~80(11、11S): Impact resistance 1/2 sine wave = 11 ms, contactor opened 10gn, contactor closed 15gn.

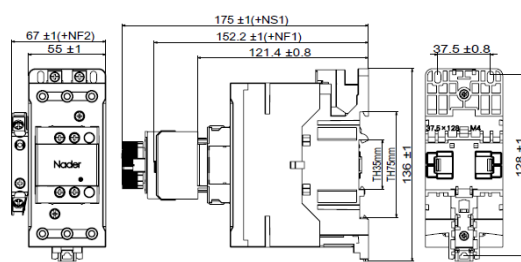
NDC3GV-40(11、11S)~80(11、11S): Impact resistance 1/2 sine wave = 11 ms, contactor opened 8gn, contactor closed 15gn.

NDC3(GV、N)-95(11、11S): Impact resistance 1/2 sine wave = 11 ms, contactor opened 8gn, contactor closed 10gn.

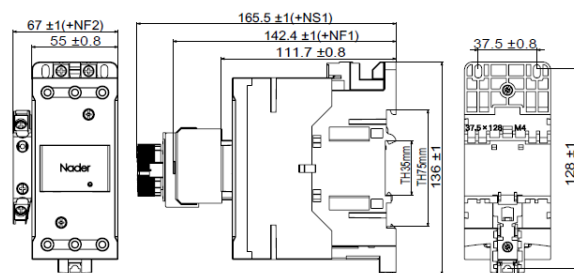
6. Product Outline and Installation Dimensions



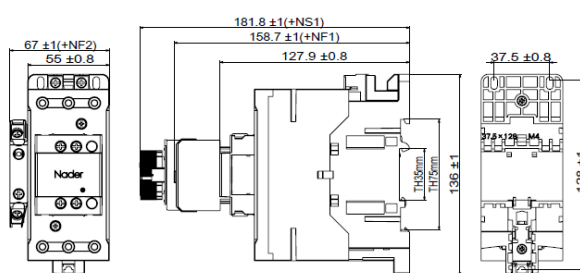
NDC3-40/50/65/80 AC Contactor



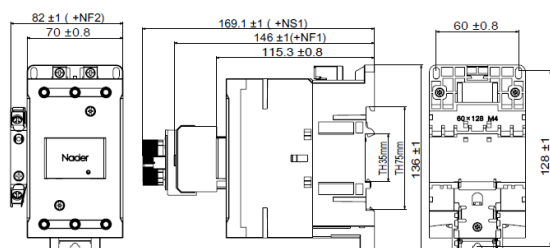
NDC3-4011(S)/5011(S)/6511(S)/8011(S) AC Contactor



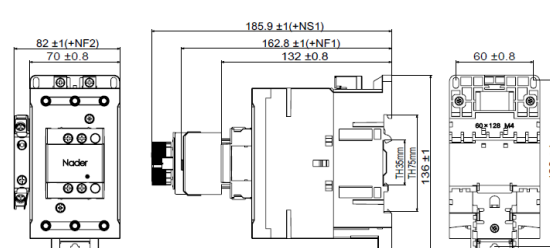
NDC3GV-40/50/65/80 AC Contactor



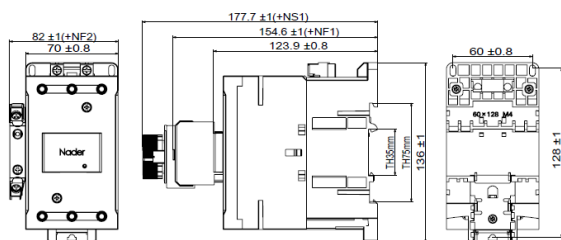
NDC3GV-4011(S)/5011(S)/6511(S)/8011(S) AC Contactor



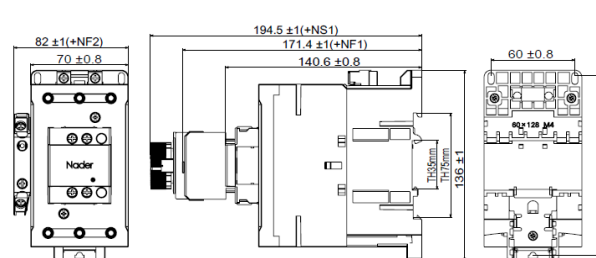
NDC3-95 AC Contactor



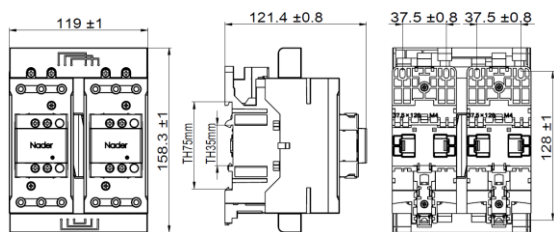
NDC3-9511(S) AC Contactor



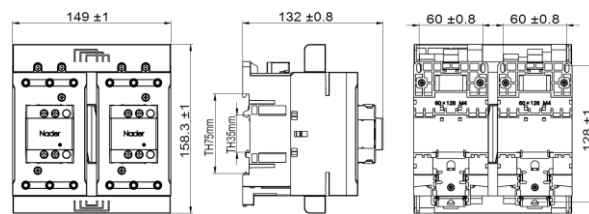
NDC3GV-95 AC Contactor



NDC3GV-9511(S) AC Contactor



NDC3N-4011/5011/6511/8011 Reversible Contactor



NDC3N-9511 Reversible Contactor

7. Installation Mode

For vertical installation of the product, the gradient between the installation surface and the vertical plane is no more than $\pm 30^\circ$; screw installation, TH35mm, TH75mm guide rail installation.

8. Environmental Compliance

Comply with the RoHS requirements.

9. List of Accessories and Installation

Can be equipped with the NF1 auxiliary contact, NF2 auxiliary contact, NS1 air delay contact, coil surge suppression module (AC control conactor).