

Shanghai Liangxin Electrical Co., Ltd.

NDZ3AT-15010R-40010R DC Contactor Product Specification

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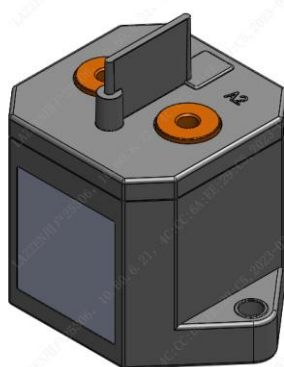
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Approved		日期	2024-10-10

Revision information					
Version	Revised contents and reasons	Date	Prepared	Reviewed	Approved
1	Creation	2024.10.10	Liu Xiaopeng	Xie Qiangqiang	Xiang Honggang

1、Application Scope and Purpose

The NDZ3AT-15010R-40010R DC contactors apply to the DC system with the working voltage of DC1000V and working current of 150A-400A, which are mainly used in electric vehicles, charging piles, charging stations and other fields.

2、Picture of the Product



3、Specification and Model Description

ND	Z	3A	T	-	☐	☐	R	/ 1500V	☐
1	2	3	4	5	6	7	8	9	

SN	SN name	NDZ3AT
1	Enterprise code	ND
2	Product code	Z : DC contactor
3	Design SN	3A
4	Package type	T: Ceramic package
5	Basic specification code	Rated current
6	Auxiliary contact type	10: With a group of NO auxiliary contacts
7	Series subdivision code	R
8	Load working voltage	DC 1000V
9	Coil voltage	DC12V、DC24V

4、Main Technical Parameters

Parameter name	Description of the specific parameters					
	NDZ3AT-15010R	NDZ3AT-20010R	NDZ3AT-25010R	NDZ3AT-30010R	NDZ3AT-3510R	NDZ3AT-4000R
Number of poles	Single pole					
Type of circuit	DC					
Contact form	1NO					
Contact material	Copper Alloy					

Rated current		150A	200A	250A	300A	350A	400A
Operating voltage range		DC12V~DC1000V					
Min Applicable Load		12V 1A					
Contact Resistance（20℃）		≤0.5mΩ（at Ie）					
mechanical life		200,000 times, frequency: 3,600 times/h					
Electrical life (on 1s off 9s) resistive load		DC1000V 150A	DC1000V 200A	DC1000V 250A	DC1000V 300A	DC1000V 350A	DC1000V 400A
Time constant 0.2ms		1000 次；	1000 次；	1000 次；	1000 次；	300 次；	50 次；
Maximum breaking current:(on 0.6s)		DC320V 2000A 1 次					
Short-time withstand current:		2000A 600ms、1200A 1s、 300A 1min、 200A 10min、	2000A 1s、 300A 10min、 400A 1min、	2000A 1s、 600A 90s、 450A 5min、	2000A 1s、 600A 90s、 450A 5min、	2000A 1s、 600A 90s、 500A 5min、	2000A 1s、 600A 90s、 500A 5min、
Insulation resistance:		Between open main contacts Between main contact and coil Between main contact and aux contact Before Test:1000VDC 1000MΩ， After Test: 1000V 10MΩ；					
Withstand voltage:		Between open main contacts Between main contact and coil Between main contact and aux contact Before Test: 3300 Va.c. (50/60 Hz 1 min)， After Test 2000 Va.c. (50/60 Hz 1 min)，（ Leak Current≤1mA）；					
Control coil （23℃）	Coil polarity	With polarity					
	Rated voltage	DC12V			DC24V		
	Operate voltage	≤9V			≤18V		
	Release voltage	≥1.2V			≥2.4V		
	Operate time(Rated voltage)	≤35ms					
	Release time	≤15ms					
	Bounce time	≤5ms					
	Coil Power	Starting: ≤35W； Retention: ≤3.5W					
	Coil power supply mode	PWM					
Auxiliary contact	Contact Arrangement	1NO					
	Contact Material	Copper Alloy					
	Load polarity	Without polarity					
	Rated load	24Vd.c 2A					
	Minimum making capacity	6V 100mA 20 万次					
	Contact Resistance	≤100mΩ（at 1A）					
Impact strength		Functional: 20g（sinusoidal half-wave pulse: 11ms, detection time 10μs），10 ops in both directions of each of the three mutually					

	perpendicular axes. Destructive: 50g,duration 6 ms, 3 shocks for each directions of three mutually perpendicular axes. There shall not be any abnormalities on relay appearance, construction and performance. No abnormality in appearance, structure and performance after test
Vibration strength	Functional:5g, 10Hz~500Hz. No abnormality in appearance, structure and performance after test
Authentication	CCC、CE、TUV、UL
Bare weight	about 400g

5、Normal Working Environment

5.1: Operating ambient environment: -40~85℃

5.2: Operating humidity: 5%~95%

5.3: Altitude requirements:

Altitude of standard installation site: ≤ 3000 米;

Altitude of installation site for extreme use: ≤ 5000 米;

High temperature and high altitude derating factor

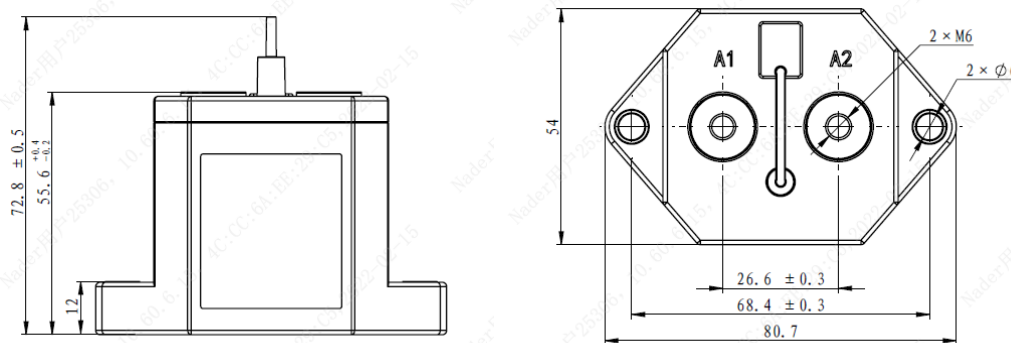
Temperature derating factor (Altitude ≤ 3000 m)		Altitude derating factor (Temperature $\leq 40^{\circ}\text{C}$)		
Temperature / $^{\circ}\text{C}$	Current coefficient	Altitude (m)	Current coefficient	Impulse withstand voltage coefficient
40	1	$H \leq 3000$	1	1
50	0.95	$3000 < H \leq 3500$	0.98	0.98
60	0.90	$3500 < H \leq 4000$	0.92	0.96
70	0.80	$4000 < H \leq 5000$	0.86	0.90
85	0.70	——	——	——

5.4: Pollution level: 3

5.5: Protection grade: IP67(Except terminal blocks)

5.6: Installation direction: Vertical installation, horizontal installation.

6、External Dimensions and Installation Dimensions (mm)



Note: 1.All unspecified tolerance according to following table.

Outline dimensions hadn't specified tolerance	
Outline Dimensions	Tolerance
≤10mm	±0.3 mm
10~50 mm	±0.5 mm
>50mm	±0.8 mm

2. The conventional wire length of the coil and auxiliary outgoing wire is 390mm,

7、Installation Mode:

Screw mounting

8、Environmental Compliance:

Comply with the RoHS directives

9、Precautions

- The drive circuit power of the contactor coil must be greater than the coil's starting power;
- It is strictly forbidden to use the product in places with strong magnetic fields or in proximity to thermal radiation;
- When the main circuit works for a long time, the upper temperature limit of the terminal shall not exceed 130 °C ;
- With the built-in energy-saving board, It will perform coil switching after driven for 0.2s. Do not repeat starting within <0.2s.
- It can't be driven by the slowly rising voltage; otherwise, the product will not act. It will be directly driven with the pulse voltage
- Wiring terminal torque: M6 screw :6~8N · m;
Installation position torque: M5 screw 3~4N · m;
- Avoid adhering grease and other foreign matters on the wiring terminal and use the connecting conductor with the following specifications, which may otherwise lead to the abnormal heating of the wiring part;
 - NDZ3AT-150R: Wire cross-section area ≥50mm²
 - NDZ3AT-200R: Wire cross-section area ≥60mm²
 - NDZ3AT-250R: Wire cross-section area ≥75mm²
 - NDZ3AT-300R: Wire cross-section area ≥100mm²
 - NDZ3AT-350R: Wire cross-section area ≥120mm²
 - NDZ3AT-400R: Wire cross-section area ≥240mm²
- The storage period of the product is one year,storage temperature-40~85℃ , humidity5%~95%,If it is used

beyond the storage period, the terminal surface needs to be polished before use