

Shanghai Liangxin Electrical Co., Ltd.

Product Specification of NDC5K Series Contactors

(IPD-ENG-DEV-T20 A0 2014-04-01)

Product name: Vacuum contactor

Product model: NDC5K-630(H)~1700R/(H)

Date: April 30, 2020

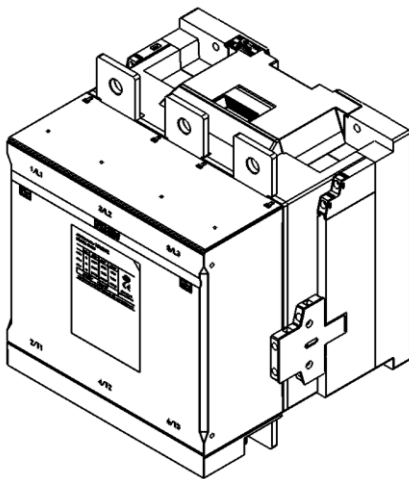
Prepared by	Li Dapeng	Date	2021-09-22
Reviewed by	Pan Wanling	Date	2021-09-22
Approved by	Cui Xiaoming	Date	2021-09-22

Revision History					
Version	Revision Reason/Content	Implementation Date	Prepared by	Reviewed by	Approved by
A0	New addition	2016.7.11	Ran Yong	Wang Xingfeng	Gu Jianming
A1	Correct the Mechanical life	2016.9.2	Ran Yong	Wang Xingfeng	Gu Jianming
A2	Correct the Rated control voltage Uc	2016.10.20	Ran Yong	Luo Guorui	Gu Jianming
A2	Add AC 50Hz(or 60Hz) Add Product certificate and Product certification standard	2020.04.30	Li Dapeng	Pan Wanling	Cui Xiaoming

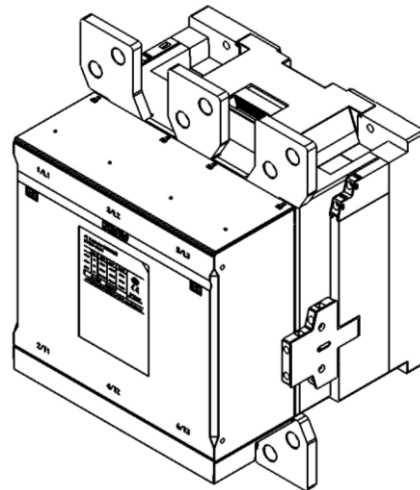
1. Applicable Scope and Purpose

This product is mainly used in the photovoltaic and wind power industry. It is used in AC 50Hz (or 60Hz) circuit, for remote connecting and breaking of the circuit of 50Hz (or 60Hz). The contactor can also be used in the industrial control sector for remote connecting & breaking, and frequently starting & controlling AC motors, which can control the inverse operation or reverse brake of the AC motors.

2. Picture of the Product



NDC5K-630 (H) , 800 (H)



NDC5K-1450R(H) 、 1700R(H)

3. Specification and Model Description

ND C 5 K — □ □ / □ □ □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① "Nader" brand low-voltage apparatus

② AC contactor

③ Design code

④ Vacuum

⑤ Specification code: 630, 800: Ie is 630A and 800A respectively at AC-3 when

Ue is 690V

1450, 1700: Ie is 1450A and 1720A at AC-1 when Ue is 1000V

⑥ No code represents the usage category when the operating current is AC-3;

R represents the usage category when the operating current is AC-1

⑦ No code and “H” represent the standard type and the long life type respectively

⑧ Type of the coil voltage: AC/DC represents the voltage is universal

⑨ Specification of the coil voltage: 48-110, 110-250 and 250-500 represent 48V-110V, 110V-250V and 250V-500V respectively

4. Main Technical Parameters

Parameter name			Description of the specific parameters							
Specification			NDC5K-630	NDC5K-630H	NDC5K-800	NDC5K-800H	NDC5K-1450R	NDC5K-1450R/H	NDC5K-1700R	NDC5K-1700R/H
Number of poles			3		3		3		3	
Agreed thermal current of the free air Ith/A			1050		1310		1450		1720	
Rated current (A)	AC-1 Ue≤1000V	θ ≤40 ° C	1050		1310		1450		1720	
		θ ≤50 ° C	931		1250		1450		1720	
		θ ≤55 ° C	888		1155		1450		1720	
		θ ≤65 ° C	850		1100		1184		1450	
		θ ≤70 ° C	700		900		1080		1350	
	AC-3	380/400V	630		800		/		/	
		660/690V	630		800					
		1000V	420		580					
	AC-4	380/400V	510		650					
		660/690V	510		650					
		1000V	345		465					
Rated power (KW)	AC-1, +40℃	380/400V	650		766		914		1071	
		660/690V	1130		1330		1576		1861	
		1000V	1712		2015		2044		2417	
	AC-3	380/400V	355		450		/		/	
		660/690V	630		750					

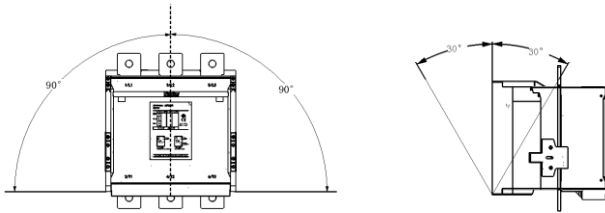
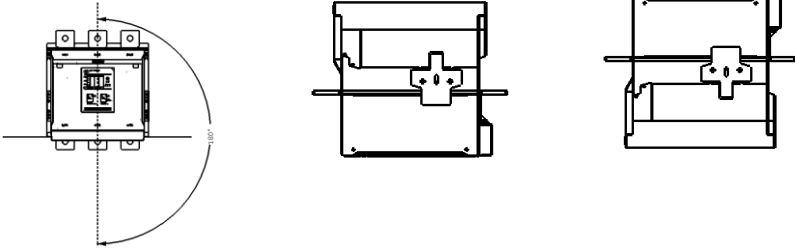
		1000V	600	800						
	AC-4	380/400V	280	355						
		660/690V	494	633						
		1000V	509	678						
Average power consumption of each pole (W)		At lth	69	96	135	188				
Rated operational voltage Ue			AC380/400V/415V, AC660/690V, AC1000V, AC1140V							
Insulation voltage Ui			AC1250V							
Impulse withstand voltage Uimp			12kV							
Rated limit short circuit current, type "2" cooperate	Test current		50kA	50kA	50kA	50kA				
	SCPD	Model	RST10-1000/1000V	RST10-1250/1000V	STF5-2000/1000V	STF5-2000/1000V				
		Rated current (A)	1000	1250	2000	2000				
Rated control voltage Uc			AC/DC: 48V-110V,110V-250V,250V-500V							
Control voltage range (The impedance voltage of the control transformer is no more than 0.7)			Pull-in: 0.7*Ucmin-1.15*Ucmax Release: 0.2-0.6Ucmin							
Control loop overvoltage protection			In the holding state, the control voltage Uc > 1.3max is released to protect the internal circuit.							
Cold state, coil power consumption VA/W at 1.0 *Uc (The impedance voltage of the control transformer is no more than 0.7)	Pull-in	AC VA	900							
		DC W								
	Hold	AC	45VA (apparent power) 20W (active power)							
		DC	15W							
Action time	A1-A2 control		From the A1-A2 power-on to the closing of the main contact: 30-120ms							
			From the A1-A2 power-off to the main off-contact: 33-70ms							
	PLC control (DC24V)		From the PLC signal input to the closing of the main contact: 30-90ms							
			From the PLC signal input to the main off-contact: 10-40ms							
Rated making capacity A 690V			7800	9840	9840	9840				
Rated breaking capacity (A)	400V	6500	8200	8200	8200					
	690V	6500	8200	8200	8200					
	1000V	4350	5800	5800	5800					
Mechanical life at Uc Frequency(times/hour)			3.000,000 times 600							
Electrical life (times)	AC-1	400V	650,000	1,000,000	530,000	80,000	400,000	600,000	300,000	500,000
		Frequency (times/hour)	600				300			
		690V	300,000	500,000	260,000	400,000	180,000	280,000	130,000	200,000
		Frequency					150			

		(times/hour)	200				/	
	AC-3	400V	650,000	1,000,000	650,000	1,000,000		
		Frequency (times/hour)	500					
	AC-4	400V	100,000	150,000	40,000	60,000		
		Frequency (times/hour)	200					
Short time withstand current (starting from the cold state, $\theta \leq 40^{\circ}\text{C}$, no current 60 minutes before)	1s	8000A				10000A		
	10s	7200A				8000A		
	30s	5200A				5200A		
	1min	4000A				4000A		
	3min	2500A				3000A		
	10min	1700A				2000A		
	15min	1500A				1800A		
Connection capacity of the main circuit (multiple copper bars shall be arranged up and down)	Cable with a connector mm ²	min 50 max 240		min 50 max 240		/		
	Width of the copper bar mm	50		60		70	80	
	Thickness of a single copper bar mm	5		5		5	5	
Connection bolt of the main circuit		M12		M12		M12	M12	
Tightening torque N.m		35±5		35±5		35±5	35±5	
Weight Kg		16		16		18	18	
Product certificate		CCC, CE, TUV						
Product certification standard		GB/T 14048.4, IEC 60947-4-1						
Auxiliary contact parameters								
Auxiliary contacts conforming to GB/T 14048.5、IEC 60947-5-1				Each contactor has 1NO and 1NC contact contacts mechanically linked on the same movable contact holder.				
Mirror contact conforming to GB/T 14048.4、IEC 60947-4-1				The NC contactor on each contactor mirrors the main contact.				
Specification	F1-11L/C5K-800			F1—11LS/C5K-800				
Rated insulation voltage	690V			250V				
Impulse withstand voltage	6kV			2.5kV				
Agreed thermal current of the free air I _{th}	16A			0.1A				
Usage category	AC-15 DC-13			AC-14 DC-12				

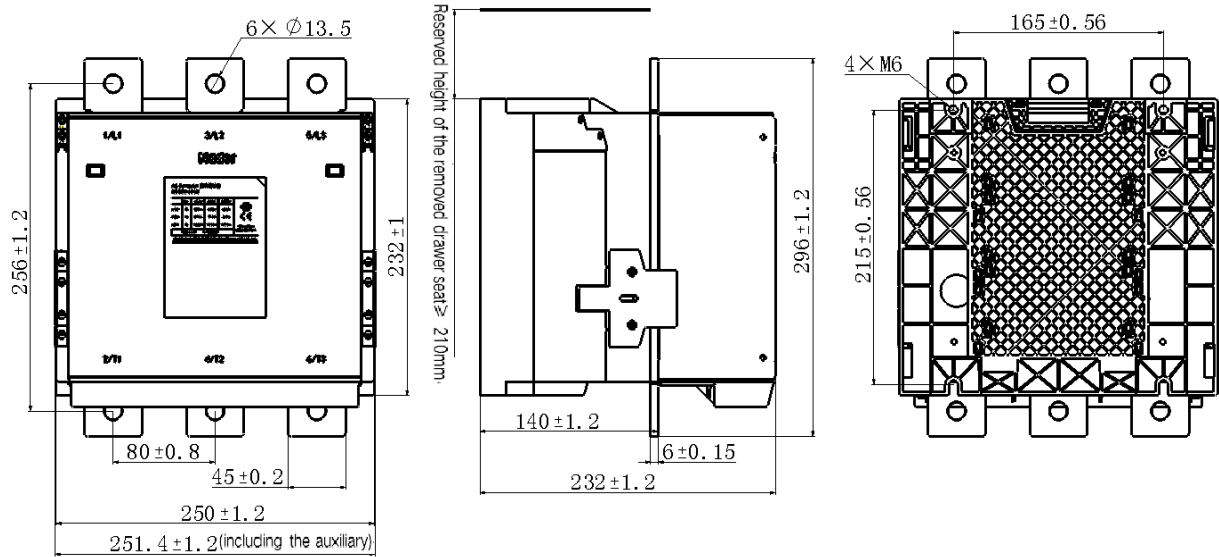
Rated operating voltage/current	AC-15	230V 50/60Hz 6A	AC-14	125V 50/60Hz 0.1A
		400V 50/60Hz 4A		/
		500V 50/60Hz 1.5A		/
	DC-13	DC24V 6A	DC-12	DC30V 0.1A
		DC48V 2.8A		/
		DC220V 0.3A		/
gG fuse protection	16A		/	
Minimum connected load	24V 10mA		12V 5mA	
Protection capacity	IP60(terminal IP20)		IP67(terminal IP20)	
Electrical life	1,000,000 times		300,000 times	
Mechanical life	3,000,000 times		3,000,000 times	
Conn ectio n capa city	Hard wire	1 piece/2 pieces 1…4mm²		
	Non-prefabric ated end cord	1 piece/2 pieces 0.75…2.5 mm²		
	Prefabricated end cord	1 piece/2 pieces 0.75…2.5 mm²		
Wiring screw		M3.5		
Tightening torque		1.2N.m±0.2		

5. Normal Working Environment

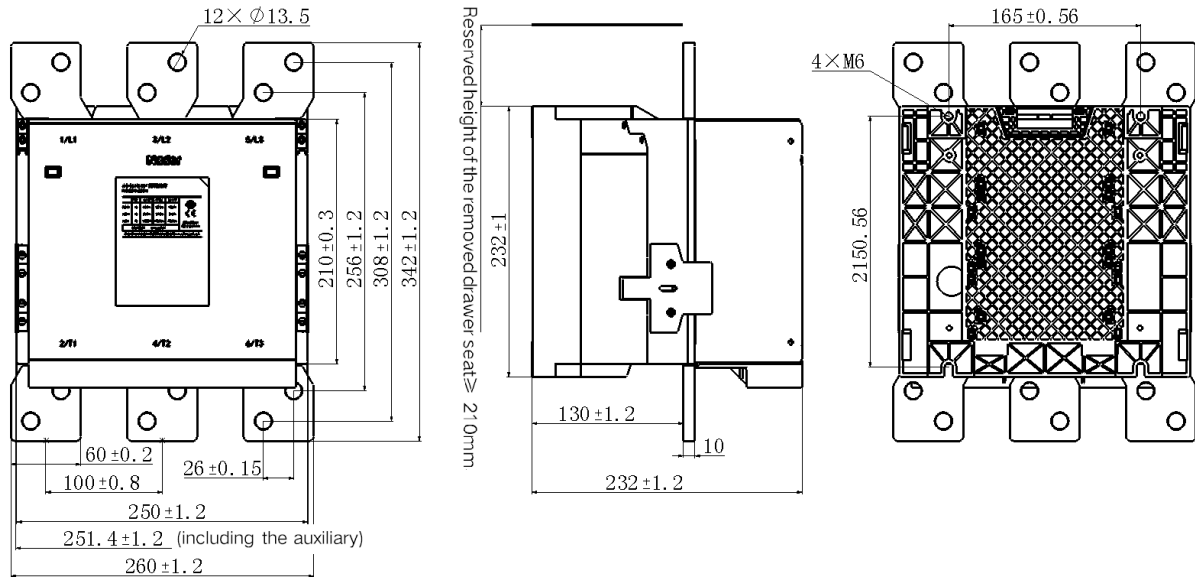
Environmental requirements	Description of the specific parameters		
Operating ambient temperature	-40℃~+70℃		
Storage ambient temperature	-40℃~+80℃		
Pollution level	3		
Altitude	The inatallation site should be no more than 5000m above sea level, and the capacity should be lower over 3000m.		
	Altitude(m)	Voltage correction factor	Current correction factor
	3500	1	0.92
	4000	1	0.90
	4500	1	0.88
	5000	1	0.86
Vibration frequency	Anti-vibration performance 5...300 Hz Main contactor opened: 2g Main contactor suction: 4g Auxiliary contact opened: 2g		

	Auxiliary contact suction: 4g
Impact strength	Impact resistance 1/2 sine wave = 11 ms Main contact of the contactor opened: 10g Main contact of the contactor closed: 10g Auxiliary contact of the contactor opened: 10g Auxiliary contact of the contactor closed: 8g
Wet heat resistance	The relative air humidity at the installation site should not exceed 95%. The working environment does not allow condensation.
Installation method	Allowed installation method  Prohibited installation method (1)  Note(1) Ban carry rotate 180 ° installed outlet and inlet line of products and product level installation is prohibited.

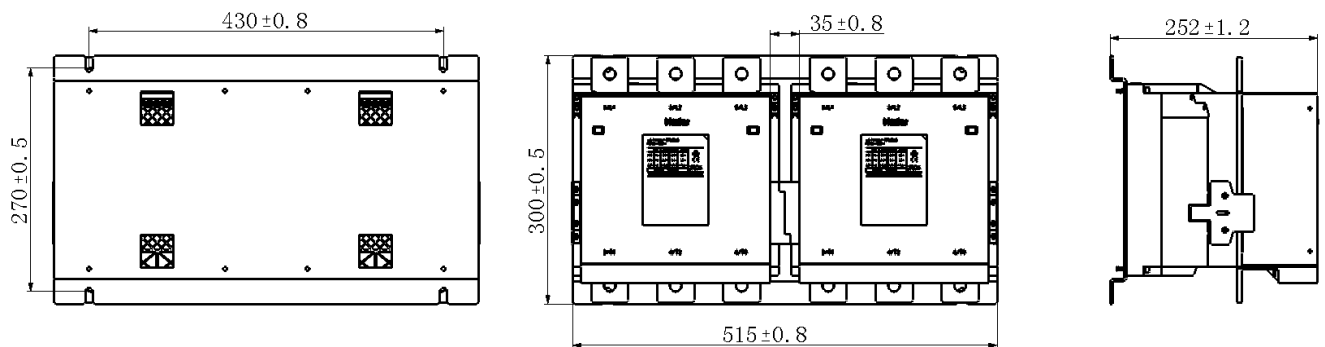
6. Outline and Installation Dimensions



External Dimension Diagram of NDC5K-630(H) and 800(H)

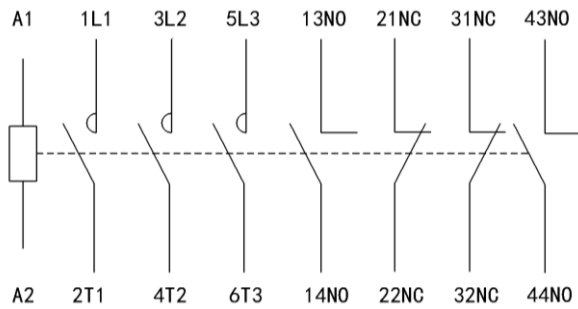


External Dimension Diagram of NDC5K-1450R(H) and 1700R(H)

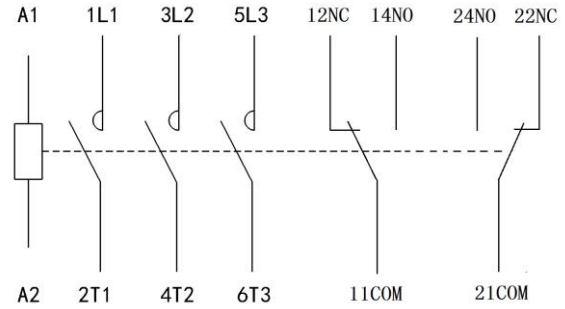


External Dimension Diagram of NDC5K-630(H)/800(H) Interlocking Products

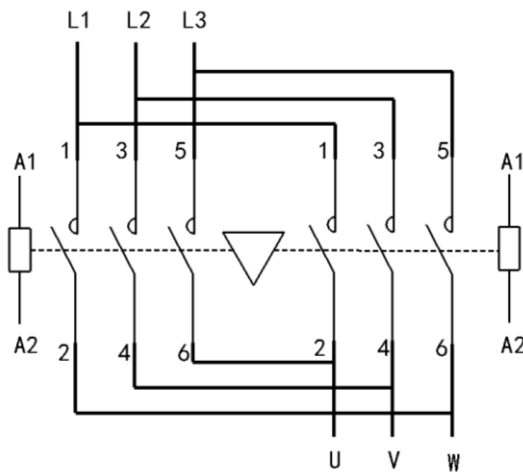
7. Wiring Diagram



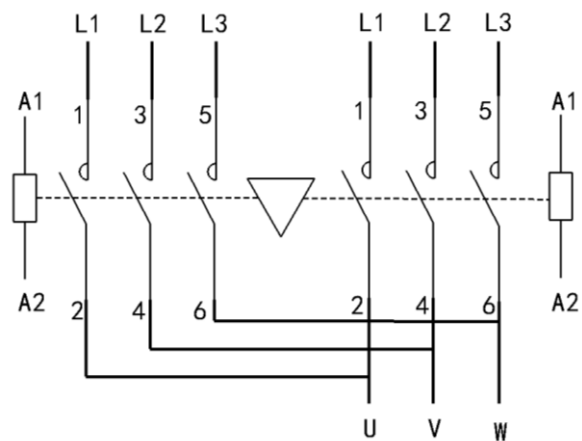
Wiring Diagram of NDC5K-630~1700+F1-11L



Wiring Diagram of NDC5K-630~1700+F1-11LS



Wiring Diagram of Motor-controlled Reversible Contactor



Wiring Diagram of Distribution Power Conversion

8. Installation Mode

Bolt installation, vertical installation of the product, $\pm 30^\circ$ between the installation surface and the vertical plane

9. Packaging and Storage

Storage ambient temperature: $-40^\circ\text{C} \sim +80^\circ\text{C}$. No acidic alkaline or other corrosive gas exists in the ambient air.

10. Environmental Compliance

All the product parts and processes conform to RoHS

11. List of Accessories and Installation

A copy of the operation manual, a set of mounting bolts for the main circuit

12. Precautions

Overvoltage suppressors must be installed on one side of the load end.