Shanghai Liangxin Electrical Co., Ltd.

NDM3EX-1600 Product Specification

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Prepared by	孙兰萍	Date	2021-10-09
Reviewed by	王忠斌	Date	2021-10-09
Countersigned by	胡 琪	Date	2021-10-09
Approved by	丁飞	Date	2021-10-09

Nader 良信

Revision History							
Version	Revision Reason/Content	Implementati on Date	Prepared by	Reviewe d by	Approve d by		
0	Newly added	2020/08/30	Sun Lanping	Wang Zhongbin	Ding Fei		
1	Update the product appearance picture and product dimension outline drawing	2021/09/30	Sun Lanping	Wang Zhongbin	Ding Fei		

1. Applicable Scope and Purpose of Circuit Breaker

The NDM3EX-1600 electronic molded case circuit breaker (hereinafter referred to as circuit breaker) applies to infrequent switching of circuits with the AC 50/60Hz, the working voltage of AC690V and working current of 1600A as well as infrequent motor starting. With the overload, short circuit and undervoltage protection functions, the circuit breaker can protect lines and power equipment from damage.

2. Product Picture of Circuit Breaker (The picture is for reference only; the

specific kind prevail)



Picture of the Product

3. Specification and Model Description of Circuit Breaker

ND	M	3	<u>EX</u> -	- <u>1600</u>			/ _ /	/					
1	2	3	4	5	6	7	8	9	10	11	12	13	14
S	N		SN r	name	ND	МЗЕХ	K						
1		E	nterpri	ise code	ND:	"Nac	der" lov	w-volt	age ap	paratu	S		
2	2	I	Produc	et code	M: I	Molde	ed case	circui	t break	ker (M	CCB)		
	3		Desig	gn SN	3								
	1	D	erived	code of	EX.	Flect	tronic						
	т		the s	eries		Lice	uome						
4	5	Sh	ell fra	me level	160	0							
	5		Brea	king	M· 1	Relati	velv hi	gh hre	akina	tyne			
)	c	apacit	y level	101.1	Clau	very m	gii bic	aking	type			
					No	code:	Direct	handle	e-opera	ated m	ode		
	7	0	peratio	on mode	P: Motor-operated								
					Z: Rotary operation								
)		Deriv	ed code	No code: Basic type intelligent release								
)	0	f the f	unction	G: 0	Groun	d prote	ection t	type in	tellige	nt rele	ease	
Ģ)	Nı	umber	of poles	3,4								
1	0	A	ccesso	ory code	See	Table	21						
1	1	A	1:		No	code:	Power	distrib	oution	type			
	1	A	opricat	ion code	2: Motor protection type								
1	2	H	Rated of	current	See Table 2								
1	2		Cablin	a true a	No code: Normal product								
	3		Jaonn	<u>g</u> type	P: Connection busbar								
					Cod	es of	interna	l and e	externa	al acce	ssories	s:	
1	4		Other	codes	Suc	h as	manua	l oper	ation:	CS1-	A, ele	ctric	operation: DC1
					220	V, shu	int: AC	230V,	under	voltag	e: DC2	220V	

Table 1: Comparison Table of Accessory Code:

Number	Left ir	Handle	nstallation			Legend Single auxiliary contact Dual-auxiliary contact Alarm contact Shunt release Under-voltage release Auxiliary alarm contact (a single accesse features the auxiliary and alarm function	ny s)
Number Image: Section of the se	\sum	Installation Model Position ()	NDM3E	X-1600 nication type)	$\left(\right)$	Installation Position	NDM3EX-1600 (Communication type)
NorN	Accessory acde			4	Accessory	Accessory name	
120Surd denome11 <t< th=""><th>300</th><th>None</th><th><u> </u></th><th>_</th><th>381</th><th>Under-voltage release, three sets of single auxiliary contacts, alarm contact</th><th></th></t<>	300	None	<u> </u>	_	381	Under-voltage release, three sets of single auxiliary contacts, alarm contact	
19.10	308	One set of alarm contacts			382	Under-voltage release, four sets of single auxiliary contacts, alarm contact	
19Name1AnalysisNameNNN	398	Two sets of alarm contacts	uц		341	Shunt release, single auxiliary contact	
Model	310	Shunt release		•	311	Shunt release, two sets of single auxiliary contacts	
130 Jackenbarg and and and any and any and any	3K01	Two sets of shunt releases			312	Shunt release, three sets of single auxiliary contacts	
Model	330	Under-voltage release		0	313	Shunt release, four sets of single auxiliary contacts	
11Quantary units11131Found right autory units11131Found right autory units11132Found right autory units11133Found right autory units11134Found right autory units11135Found right autory units11136Found right autory units11137Found right autory units11138Found right autory units11139Found right autory units11130Found right autory units11131Found right autory units11132Found right autory units11133Found right autory units11134Found right autory units11135Found right autory units11134Found right autory units11135Found right autory units11134Found right autory units <t< td=""><td>3A01</td><td>Two sets of under-voltage releases</td><td></td><td>00</td><td>371</td><td>Under-voltage release, single auxiliary contact</td><td>0</td></t<>	3A01	Two sets of under-voltage releases		00	371	Under-voltage release, single auxiliary contact	0
MathMathMathMathMathMathMathMath101Ren of right and roadsImageImageImageImageImageImage102Ren of right and roadsImageImageImageImageImageImage103Ren of right and roadsImageImageImageImageImageImage104Ren of right and roadsImageImageImageImageImageImage104R	321	Single auxiliary contact		0	372	Under-voltage release, two sets of single auxiliary contacts	000
131Name of why analyse constants11	361	Two sets of single auxiliary contacts		00	373	Under-voltage release, three sets of single auxiliary contacts	
121 Part and single	323	Three sets of single auxiliary contacts		EED.	374	Under-voltage release, four sets of single auxiliary contacts	
111 Mar Adeau Adam Control 0 0 123 Marka Adam Control 0 0 124 Marka Adam Control 0 0 125 Marka Adam Control 0 0 126 Marka Adam Control 0 0 127 Marka Adam Control 0 0 128 Parts of Adap Adam Control, Adam Control 0 0 129 Norm of Adap Adam Control, Adam Control 0 0 120 Norm of Adap Adam Control, Adam Control 0 0 121 Norm of Adap Adam Control, Adam Control 0 0 122 Norm of Adap Adam Control, Adam Control 0 0 124 Norm of Adap Adam Control, Adam Control 0 0 124 Norm of Adam Control (Adam Control) 0 0 124 Norm of Adam Control (Adam Control) 0	324	Four sets of single auxiliary contacts		1000	331	Under-voltage release, shunt release, alarm contact	
138 Marving referse, there area Image: Section of Sectin of Section of Section of	318	Shunt release, alarm contact		•	337	Under-voltage release, shunt release, two sets of single alarm contacts	
1212 Super analyse states, due notation Image: state state states, due notation Image: state states, due notation Image: state, due notation Image: states, due notation Image: state, due notation <td>338</td> <td>Under-voltage release, alarm contact</td> <td></td> <td>0</td> <td>351</td> <td>Under-voltage release, shunt release, single auxiliary contact</td> <td></td>	338	Under-voltage release, alarm contact		0	351	Under-voltage release, shunt release, single auxiliary contact	
138. To data diagka audity contas, dara contat IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	322	Single auxiliary contact, alarm contact			352	Under-voltage release, shunt release, two sets of single auxiliary contacts	
126. Three on of dight anality contact, dam contal Image: Contact of Co	388	Two sets of single auxiliary contacts, alarm contact			353	Under-voltage release, shunt release, three sets of single auxiliary contacts	
125 For start of digit audity const. Jum const 1 142 Start of auge audity const. Jum const 1 144 Marchase, ince and digit audity const. Jum const 1 146 Start of auge audity const. Jum const 1 147 Marchase, ince and digit audity const. Jum const 1 148 Marchase, ince and digit audity const. Jum const 1 149 Marchase, ince and digit audity const. Jum const 1 140 Marchase, ince and digit audity const. Jum const 1 141 Marchase, ince and digit audity const. Jum const 1 142 Marchase, ince and digit audity const. Ince and digit	326	Three sets of single auxiliary contacts, alarm contact			354	Under-voltage release, shunt release, four sets of single auxiliary contacts	
1212 Share dense, fight and ling center, darm center 1 1344 Share dense, free and dinghe andling center, darm center 1 1346 Share dense, free and dinghe andling center, darm center 1 1347 Share dense, free and dinghe andling center, darm center 1 1348 Share dense, free and dinghe andling center, darm center 1 1349 Share dense, free and dinghe andling center, tente and dinghe darm centers 1 1340 Share dense, free and dinghe andling center, tente and dinghe darm centers 1 1341 Share dense, free and dinghe andling centers, tente and dinghe darm centers 1 1345 Share dense, free and dinghe andling centers, tente and dinghe darm centers 1 1346 Share dense, free and dinghe andling centers, tente and dinghe darm centers 1 1347 Share dense, free and dinghe andling centers, tente and dinghe darm centers 1 1348 Share dense, free and dinghe andling centers, tente and dinghe and centers 1 1349 Share dense dense dinghe and centers 1 1 1340 Share dense dense dinghe and centers 1 1 1341 Share dense dense dinghe and centers 1 1	325	Four sets of single auxiliary contacts, alarm contact		LLLL	319	Shunt release, two sets of single alarm contacts	00.
344 Not referse, how out of right auxiliary contact, have out of right auxil	342	Shunt release, single auxiliary contact, alarm contact		D ,	379	Under-voltage release, two sets of single alarm contacts	
346 Start elses, five est of single auxiliary contax, aum const 11 11	344	Shunt release, two sets of single auxiliary contacts, alarm contact		-	363	Single auxiliary contact, two sets of single alarm contacts	
314 State release, four acts of airgle auxiliary contacts, alarm contact 1 315 Lider-ordiger release, ingle auxiliary contacts, alarm contact 1 1 317 Lider-ordiger release, ingle auxiliary contacts, thore sets 1	346	Shunt release, three sets of single auxiliary contacts, alarm contact	0		364	Two sets of single auxiliary contacts, two sets of single alarm contacts	
10-10 Ladie-ording relax, lingle anality contax, laren 10 1377 Ladie-ording relax, lingle anality contax, hore sto 10 1378 Satur relaxe, lingle anality contax, hore sto 10 1379 Ladie-ording relax, lingle anality contax, hore sto 10 1379 Satur relaxe, lingle anality contax, hore sto 10 1379 Satur relaxe, lingle anality contax, hore sto 10 1379 Satur relaxe, lingle anality contax, hore sto 10 1379 Ladie-ording relax, lingle anality contax, hore sto 10 1379 Ladie-ording relax, lingle anality contax, hore sto 10 1379 Ladie-ording relax, lingle anality contax, hore sto 10 1381 Inder-ording relax, lingle anality contax, hore sto 10 1392 Ladie-ording relax, lingle anality contax, hore sto 10 1393 Ladie-ording relax, lingle anality contax, hore sto of angle anolysic contax,	314	Shunt release, four sets of single auxiliary contacts, alarm contact		III	365	Three sets of single auxiliary contacts, two sets of single alarm contacts	
377 Udde-volger fetess, here stof single annihity contat, here stof Image: Single annihity contat, here stof 343 Shart referes, store stof single annihity contat, here stof Image: Single annihity contat, here stof 347 Shart referes, store stof single annihity contat, here stof Image: Single annihity contat, here stof 347 Shart referes, store stof single annihity contat, here stof Image: Single annihity contat, here stof 348 Shart referes, store stof single annihity contat, here stof Image: Single annihity contat, here stof 347 Udde-volger referes, here stof single annihity contat, here stof Image: Single annihity contat, here stof Image: Single annihity contat, here stof 348 Udde-volger referes, here stof single annihity contat, here stof Image: Single annihity contat, here stof Image: Single annihity contat, here stof 341 Udde-volger referes, here stof single annihity contat, here stof Image: Single annihity contat, here stof	3/5	Under-voltage release, single auxiliary contact, alarm contact	U	0	300	Four sets of single auxiliary contacts, two sets of single alarm contacts	
345 Start prices, trost of diright smillary contact, trosts IIII To sets of single dam contact. IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	377	Under-voltage release, two sets of single auxiliary contacts, alarm contact		0	343	Shunt release, single auxiliary contact, two sets of single alarm contacts	
347 Stung release, there sets of single anality contacts, two sets 33.13 Lee sets of decay release, those sets of single 318 Stung release, four sets of single anality contacts, two sets of 33.13 Lee sets of decay release, those sets of single 317 Index-ordings release, those sets of single anality contacts, two sets of decay feature contacts 33.11 Lee sets of decay release, those sets of single 318 Index-ordings release, those sets of single anality contacts, two sets of decay feature contacts 33.11 Lee sets of decay release, those sets of single 319 Index-ordings release, those sets of single anality contacts, two sets of decay feature contacts 33.10 Stutt release, those sets of single 33.11 Contact-ordings release, those sets of single 320 Index-ordings release, thort sets of single anality contacts 33.01 Contact-ordings release, thort sets of single 33.01 331 Lee sets of decay feature contacts 33.01 Contact-ordings release, thort sets of single 33.01 332 Lee sets of decay feature contacts 33.01 Contact-ordings release, thort release, thort release, thort release, thort release, thort sets of single 33.01 333 Lee sets of decay feature contacts 33.01 Contact-ordings release, thort release, thort release, thort release, thort release, thort r	345	Shunt release, two sets of single auxiliary contacts, two sets of single alarm contacts	00		3A11	Two sets of under-voltage releases, single auxiliary contact, two sets of single alarm contacts	
311 Short release, for set of dingle ancillary contact, two sets IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	347	Shunt release, three sets of single auxiliary contacts, two sets of single alarm contacts	00	EDD	3A13	Two sets of under-voltage releases, two sets of single auxiliary contacts, two sets of single alarm contacts	
375 Linker-charge release, ainleg earching: contacts, to sets of Image: Contage release, show sets of aingle Image: Contage release, show sets of aingle 377 Too sets of ainder-contage release, show sets of aingle auxiliary contacts, Image: Contage release, show sets of aingle Image: Contage release, show sets of aingle 381 Under-coltage release, show sets of aingle auxiliary contacts, Image: Contage release, show sets of aingle Image: Contage release, show sets of aingle 382 Under-coltage release, show sets of aingle auxiliary contacts, Image: Contage release, show sets of aingle Image: Contage release, show sets of aingle Image: Contage release, show sets of aingle 383 Under-coltage release, show sets of aingle Image: Contage release, show sets of aingle Image: Contage release, show sets of aingle Image: Contage release, show sets of aingle 383 Under-coltage release, show sets of aingle Image: Contage release, show sets of aingle Image: Contage: Contage: Contage release, show sets of aingle	315	Shunt release, four sets of single auxiliary contacts, two sets of single alarm contacts	00		3A15	Two sets of under-voltage releases, three sets of single auxiliary contacts, two sets of single alarm contacts	
177 Under-onlage release, how sets of single auxiliary contacts, now sets of single alarn contacts 1000000000000000000000000000000000000	375	Under-voltage release, single auxiliary contact, two sets of single alarm contacts	00	0	3A17	Two sets of under-voltage releases, four sets of single auxiliary contacts, two sets of single alarm contacts	
381 bider-voltage release, hore ests of single auxiliary contact. 3A66 No sets of ander-voltage release, single auxiliary contact. 382 bider-voltage release, hore sets of single auxiliary contact. 3A06 No sets of ander-voltage release, single auxiliary contact. 383 bider-voltage release, hore sets of single 3A06 No sets of ander-voltage release, single auxiliary contact. 384 bider-voltage release, hore sets of single 3A07 No sets of ander release, hore sets of single 385 bider-voltage release, hore sets of single 3A08 No sets of andur release, single auxiliary contact. 386 bider-voltage release, hore sets of single 3A08 No sets of andur release, hore sets of single auxiliary contact. 387 bider-voltage release, hore sets of single 3A08 No sets of andur release, hore sets of single auxiliary contact. 388 bider-voltage release, hore sets of single 3A08 No sets of andur release, hore sets of single auxiliary contact. 389 bider-voltage release, hore sets of single auxiliary contact. 3A08 No sets of andur release, hore sets of single auxiliary contact. 3A09 380 bider-voltage release, hore sets of single auxiliary contact. 3A09 No sets of andur release. 3A018 380 bider	377	Under-voltage release, two sets of single auxiliary contacts, two sets of single alarm contacts	00		3A05	Two sets of undervoltage releases, alarm contact	
392 Under voltage release, four sets of single auxiliary contacts. 300 100 100 100 <td< td=""><td>381</td><td>Under-voltage release, three sets of single auxiliary contacts, two sets of single alarm contacts</td><td></td><td></td><td>3A06</td><td>Two sets of under-voltage releases, two sets of single</td><td></td></td<>	381	Under-voltage release, three sets of single auxiliary contacts, two sets of single alarm contacts			3A06	Two sets of under-voltage releases, two sets of single	
333 Linker-voltage release, dues notices, due no contex, due no c	382	Under-voltage release, four sets of single auxiliary contacts, two sets of single alarm contacts	00		3KD4	Two sets of shunt releases, single auxiliary contact	P
333 Under-voltage release, that release, the sets of single anxiliary contacts, alarn contact 3407 You sets of alaut release, there sets of single anxiliary contacts 334 Under-voltage release, that release, there sets of single anxiliary contacts 3408 You sets of alaut release, there sets of single anxiliary contacts 335 Under-voltage release, that release, there sets of single anxiliary contacts 3407 You sets of alaut release, there sets of single anxiliary contacts 336 Under-voltage release, there sets of single anxiliary contacts 3408 You sets of alaut release, there sets of single anxiliary contacts 337 Under-voltage release, thore sets of single anxiliary contacts 3409 You sets of alaut release, there sets of single anxiliary contacts 338 Under-voltage release, thore sets of single anxiliary contacts 3409 You sets of alaut release, there sets of single anxiliary contacts 344 Under-voltage release, there sets of single anxiliary contacts 3411 You sets of alaut release, there sets of single anxiliary contacts 344 Two sets of andre latern contacts 3409 You sets of alaut release, there sets of single anxiliary contacts 3409 Two sets of andre latern contacts 3411 You sets of alaut release, there sets of single anxiliary contacts 34007 Two sets of andre latern contacts<	332	Under-voltage release, shunt release, single auxiliary contact, alarm contact			3KD6	Two sets of shunt releases, two sets of single auxiliary contacts	P.
334 Lider-voltage release, hand release, here sets of single 3809 No sets of alunt release, hore sets of single auxiliary contacts 335 Lider-voltage release, hand release, hore sets of single 3809 No sets of alunt release, hore sets of single auxiliary contacts 336 Lider-voltage release, hand release, hore sets of single 3809 No sets of alunt releases, hore sets of single auxiliary contacts 337 Lider-voltage release, hand release, hore sets of single auxiliary contacts 3809 No sets of alunt releases, hore sets of single auxiliary contacts 3385 Lider-voltage release, hand release, hore sets of single auxiliary contacts 3809 No sets of alunt releases, hore sets of single auxiliary contacts 3366 Loter-voltage releases, hingle auxiliary contacts 3809 No sets of alunt releases, hore sets of alige auxiliary contacts 3360 Loter-voltage releases, hingle auxiliary contacts 3809 No sets of align alian contacts 3809 3400 Two sets of align alian contacts 3811 1000000000000000000000000000000000000	333	Under-voltage release, shunt release, two sets of single auxiliary contacts, alarm contact		000	3K07	Two sets of shunt releases, three sets of single auxiliary contacts	CCC.
335 Linker-voltage release, how release, for sets of single 3100 339 Dider-voltage release, how release, for sets of single 3100 339 Dider-voltage release, how release, for sets of single 3100 339 Dider-voltage release, how release, for sets of single 3100 334 Dider-voltage release, how release, for sets of single 3100 335 Linker solution 3100 346 Dider-voltage release, hingle auxiliary contact, 3100 340 Dider-voltage release, hingle auxiliary contact, 3111 3402 Two sets of single auxiliary contact, 3111 3403 Two sets of single auxiliary contact, 3111 3404 Dider-voltage release, hingle auxiliary contact, 3111 3402 Two sets of single aux contacts 3111 3111 3403 Two sets of single aux contacts 3111 3111 3111 3111 3404 Two sets of single auxiliary contact, 3111 3111 3111 3111 31111 31111 3407 Two sets of single auxiliary contact, 3111 3111 31111 31111 31111 311111	334	Under-voltage release, shunt release, three sets of single auxiliary contacts, alarm contact		1000	3K08	Two sets of shunt releases, four sets of single auxiliary contacts	FFFF
339 Under-oldag release, short release, findp and/lary contact, 300 No sets of shapt and mocetars 300 335 Under-oldag release, that release, two sets of single and/lary contact, and mocetars 300 No sets of shapt and mocetars 300 336 Under-oldag release, that release, two sets of single and/lary contact, and mocetars 300 No sets of shapt and mocetars 300 336 Under-oldag release, that release, two sets of single and/lary contact, and mocetars 300 300 Contacts, adam contact 300 336 Under-oldag release, that release, two sets of single and mocetars 300 301 300 100 500 301 500 100 500 <t< td=""><td>335</td><td>Under-voltage release, shunt release, four sets of single auxiliary contacts, alarm contact</td><td></td><td></td><td>3K12</td><td>Two sets of shunt releases, single auxiliary contact, alarm contact</td><td></td></t<>	335	Under-voltage release, shunt release, four sets of single auxiliary contacts, alarm contact			3K12	Two sets of shunt releases, single auxiliary contact, alarm contact	
3255 Under-voltage release, so use of single auxiliary contact, aux costs of single auxiliary costs. 3K10 Two sets of single auxiliary contact, aux costs of single auxiliary costs. 3K11 Two sets of single auxiliary contact, aux costs. 3K11 Two sets of single auxiliary contact, aux costs. 3K11 Two sets of single auxiliary contact, aux costs. 3K11 Two sets of single aux costs. 3K11 Two set	339	Under-voltage release, shunt release, single auxiliary contact, two sets of single alarm contacts	00	00	3809	Two sets of shunt releases, two sets of single auxiliary contacts, alarm contact	
256 Linder-voluge release, how sets of single antiliny contacts, how sets of angle alum contacts 2K11 Two sets of single and contacts 336 Linder-voluge release, how sets of angle antiliny contacts, how sets of angle alum contacts 2K11 Two sets of single and contacts 2 33A02 Two sets of angle alum contacts 2 3K13 Two sets of single and contacts 2 33A02 Two sets of angle alum contacts 2 3K14 Two sets of angle and contacts 2 33A02 Two sets of angle release, honge avoid single and lary contacts 2 3K13 Two sets of angle and contacts 2 33A03 Two sets of angle release, honge avoid single and lary contacts 2 3 3 2	355	Under-voltage release, shunt release, two sets of single auxiliary contacts, two sets of single alarm contacts	00	D .	3K10	Two sets of shunt releases, three sets of single nuxiliary contacts, alarm contact	
336 Under-voltage release, how sets of single auxiliary contact. 3300 Two sets of under-voltage releases, how sets of single auxiliary contact. 34007 Two sets of under-voltage releases, how sets of single auxiliary contact. 3408 Two sets of under-voltage releases, how sets of single 3409 Two sets of under-voltage releases, how sets of single 3409 Two sets of under-voltage releases, how sets of single 3409 Two sets of under-voltage releases, how sets of single 3409 Two sets of under-voltage releases, how sets of single 3409 Two sets of under-voltage releases, how sets of single 3400 Two sets of under-voltage releases, how sets of single 3400 Two sets of under-voltage releases, how sets of single 3401 Two sets of under-voltage releases, how sets of single 3402 Two sets of under-voltage releases, how sets of single 3403 Two sets of under-voltage releases, how sets of single 3404 Two sets of under-voltage releases, how sets of single 3405 Two sets of under-voltage releases, how sets of single 3401 Two sets of under-voltage releases, how sets of single 3412 Two sets of under-voltage releases, high e auxiliary 3414	356	Under-voltage release, shunt release, three sets of single auxiliary contacts, two sets of single alarm contacts	00		3K11	Two sets of shunt releases, four sets of single auxiliary contacts, alarm contact	
3A02 Two sets of under-voltage releases, single auxiliary contact 3K14 Two sets of under-voltage releases, single auxiliary contact 3K14 Two sets of under-voltage releases, single auxiliary contact 3K14 Two sets of under-voltage releases, two sets of single Image: single auxiliary contact	336	Under-voltage release, shunt release, four sets of single auxiliary contacts, two sets of single alarm contacts	00		3K13	Two sets of shunt releases, single auxiliary contact, two sets of single alarm contacts	
3A07 Two sets of under-voltage releases, trov sets of single Image: Contract Single Image: Contract Single 3A08 Two sets of under-voltage releases, three sets of single Image: Contract Single Image: Contract Single 3A08 Two sets of under-voltage releases, three sets of single Image: Contract Single Image: Contract Single 3A09 Two sets of under-voltage releases, three sets of single Image: Contract Single Image: Contract Single 3A09 Two sets of under-voltage releases, three sets of single Image: Contract Single Image: Contract Single 3A09 Two sets of under-voltage releases, three sets of single Image: Contract Single Image: Contract Single 3A10 Two sets of under-voltage releases, single auxiliary Image: Contract Single Image: Contract Single 3A11 Two sets of under-voltage releases, single auxiliary Image: Contract Single Image: Contract Single 3A12 Two sets of under-voltage releases, three sets of single Image: Contract Single Image: Contract Single 3A14 Under-voltage release Image: Contract Single Image: Contract Single Image: Contract Single 3A16 Under-voltage release Image: Contract Single Image: Contract Single Image: Contract Single	3A02	Two sets of undervoltage releases, single auxiliary contact		0.0	3K14	Two sets of shunt releases, two sets of single auxiliary contacts, two sets of single alarm contacts	
3A08 Two sets of under-voltage releases, three sets of single Image: the sets of under-voltage release, three sets of single 3A09 Two sets of under-voltage releases, three sets of single Image: the sets of under-voltage release, three sets of single Image: the sets of under-voltage release, three sets of single 3A10 Two sets of under-voltage releases, three sets of single Image: the sets of under-voltage release, three sets of single Image: the sets of under-voltage release, three sets of single 3A11 Two sets of under-voltage releases, three sets of single Image: the sets of under-voltage release, three sets of single Image: the sets of under-voltage release, three sets of single 3A12 Two sets of under-voltage release, three sets of single Image: the sets of under-voltage release, three sets of single Image: the sets of under-voltage release, three sets of single 3A14 Under-voltage release Image: the sets of under-voltage release, three sets of under-voltage release 3A14 Under-voltage release Image: the voltage release 3A16 Under-voltage release	3A07	Two sets of under-voltage releases, two sets of single auxiliary contacts			3K15	Two sets of shunt releases, three sets of single auxiliary contacts, two sets of single alarm contacts	
3A09 Two sets of ander-voltage releases, four sets of single anxiliary context, and and context Image: a single a single and context 3A10 Two sets of ander-voltage releases, four sets of single anxiliary context, and more context Image: a single a single and context 3A10 Two sets of ander-voltage releases, four sets of single context, alarn context Image: a single a single a single a single anxiliary context, and more context Image: a single a single a single a single anxiliary context, and more context 3A112 Two sets of ander-voltage release, two sets of single anxiliary context, alarn context Image: a single a single a single a single anxiliary context, and more context 3A14 Undervoltage release Image: a single a single a single anxiliary context, anxiety context, alarn context Image: a single a single a single a single a single anxiety context, anxiety context, anxiety context, and more context 3A14 Undervoltage release Image: a single a single a single anxiety context, anxiety context, anxie	3A08	Two sets of undervoltage releases, three sets of single auxiliary contacts	-		3K16	Two sets of shunt releases, four sets of single auxiliary contacts two sets of single alarm contacts	
3A10 Two sets of under-voltage releases, single auxiliary Image: Contact, alarm contact 3A12 axio action of under-voltage releases, two sets of single releases, two sets of single alarm contacts 3A14 Under-voltage release 3A16 Under-voltage release	3A09	Two sets of under-voltage releases, four sets of single	-		3K02	Two sets of shunt releases, alarm contact	
3A12 Two sets of under-voltage releases, two sets of single Image: Contracts, alumn contact 3A14 Under-voltage release Image: Contracts, alumn contact 3A16 Under-voltage release Image: Contracts, alumn contact	3A10	Two sets of under-voltage releases, single auxiliary		Po o	3K05	Two sets of shunt releases, two sets of single alarm contacts	
3A14 Undervoltage release 3A16 Undervoltage release	3A12	Two sets of under-voltage releases, two sets of single	D				
3A16 Undervoltage release	3A14	Undervoltage release					
	3A16	Undervoltage release					

Note: The first number "3" of the release accessory code represents the intelligent controller with the three-section protection while the last two numbers represent the inner accessory code.

4. Main Technical Parameters of Circuit Breaker

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Model			NDM3EX-1600		
Rated current of frame In	1600				
Rated current In (A)	800, 1000, 1250, 1600				
Rated insulation voltage U	Ui (AC V)		1000		
Rated impulse withstand	voltage Uimp (V)		12000		
Rated working voltage U	e (AC V)		400/415, 500, 660/690		
Power frequency withstar	nd voltage U (1min	1) (V)	3500		
Utilization category			В		
Rated short-time withstan	20				
Number of poles	3, 4				
Rated limit short-circuit	AC40	00/415V	70		
breaking capacity Icu	AC	2500V	50		
(kA)	AC66	50/690V	20		
Rated operating	AC40	00/415V	50		
short-circuit breaking	AC500V		50		
capacity Ics (kA)	AC66	50/690V	20		
		AC400/415V	1000		
	Electrical	AC500V	800		
Operating performance	1110	AC690V	500		
(times)	Machanical life	Maintainable free life	10000(3P), 6000(4P)		
		Maintainable life	20000 (3P) 、12000 (4P)		

4.1 Selection of the circuit breaker connecting bus or cable cross-section area:

4.1.1 Front-plate connection:

Table 3 Reference Dimensions of the Connecting Copper Bar of Front-plate Connection Products

Rated current (A)	800	1000	1250	1600
Copper bar size (mm ²)	50×5	50×6	50×8	50×10
Quantity	2	2	2	2

Address: No. 2000, South Shenjiang Road, Pudong New Area, Shanghai Fax: (021)23025796 4.1.2 Extended front-plate connection:

Table 4 Reference Dimensions of the Connecting Copper Bar of Extended Front-plate Connection Products

Rated current (A)	800	1000	1250	1600
Copper bar size (mm ²)	80×6	80×8	80×5	80×6
Quantity	1	1	2	2

4.2 Tightening Torque of the Circuit Breaker Terminal and Mounting Screw

Table 5 Tightening Torque of the Circuit Breaker Terminal and Mounting Screw

Model	Thread diameter (mm)	Torque (N·m)		
NDM2EX 1600	M10	20		
NDM3EA-1600	M5	4		

4.3 Derating factor of temperature change for the circuit breaker

 Table 6 Derating Factor Table of Temperature Change for the Circuit Breaker

Model	Derating factor of product temperature change							
NDM2EX 1600	Temperatu re (℃)	40	45	50	55	60	65	70
NDM3EX-1600	Derating factor	1	0.98	0.95	0.92	0.88	0.84	0.80

Note: 1) When the operating ambient temperature is below 40°C, the product can be used normally without

derating capacity.

2) The above derating factors are measured at the frame current.

4.4 High-altitude derating factor of the circuit breaker

Table 7 High-altitude Derating Factor Table of Circuit Breaker

Altitude (m)	2000	2500	3000	3500	4000	4500	5000
Correction factor of the working current	1	1	0.98	0.97	0.95	0.94	0.93
Maximum working voltage(V)	690	690	620	580	550	520	500
Power frequency withstand voltage(V)	3500	3500	3150	3000	2800	2650	2500
Insulation voltage(V)	1000	1000	900	850	810	770	730

5. Normal Working Environment of Circuit Breaker

- The altitude of the installation site doesn't exceed 2,500m. See the "High-altitude Derating Factor Table of Circuit Breaker" for the derating factor at the altitude;
- 2) The ambient temperature is -35°C ~ + 70°C; the average within 24 h shall not be more than +35°C. If the ambient temperature is higher than +40°C, the user needs to reduce the capacity. See the "Derating Factor Table of Temperature Change for the Circuit Breaker" for the derating factor;
- Wet heat resistance: Meets the standard IEC60086-2-30 wet heat (95% relative humidity at 40°℃);
- 4) The product can withstand the effects of wet air, salt mist, oil mist and mould;
- 5) The installation category of the circuit breaker connected to the main loop is: Category III (power distribution and control level), The installation category of the circuit breaker not connected to the main loop is: Category II (load level);
- 6) The pollution level is Level 3;
- 7) The product should be installed in places that are free from explosive media, media corrosive to metal, insulation damaging gas, and conductive dust, which should be also avoided from snow and rain;
- In case of stricter user conditions than the above description, negotiate with the manufacturer.



6. Short-circuit Overload Protection Characteristic Curve of Circuit Breaker





Ground-type protection curve



Motor-type protection curve

7. Operation and Function Description of Circuit Breaker Controller

- 7.1 Operation and use of the controller
 - 7.1.1 Control panel of the power distribution type controller

Components of the circuit breaker control panel:

(1) Ir long time-delay current setting value (2) Tr long time-delay action time (3) Setting value of the Is short circuit short time-delay current

(4) Ts short circuit short time-delay action time(5) Setting value of the Ii short-circuit instantaneous current(6) Ip alarm current

(7) Ig ground fault protection current (8) Tg ground fault protection time (9) IrN N-phase setting current value

(10) TEST test port (11) Power indicator (12) Alarm indicator

(13) Overload indicator (14) Comm indicator



3P non-grounding type (1250A, 1600A)



3P grounding type (1250A, 1600A)



4P grounding type (1250A, 1600A) Adjustment Gear Figure of Power Distribution Type Controller

7.1.2 Motor type controller control panel

Components of the circuit breaker control panel:

(1) Ir overload protection current setting value (2) Class tripping level action time (3) Isd blocking protection current setting value

(4) Tsd blocking protection action time (5) Iunbl current imbalance setting value (6) TEST test port

(9) Overload indicator

(7) Power indicator (8) Alarm indicator

(10) Comm indicator



Adjustment Gear Diagram of Motor Type Controller (800A, 1000A)

- 7.1.3 Each part function of the controller control panel
- (1) Test port

Namely the "TEST" port: the NDM3EX special tester connects with the controller via this port for test, debugging and other operation, only used in the company.

(2) Current and time adjustment knobs

By adjusting the current and time knobs, select proper combinations to protect lines and devices.

This operation must be exclusively performed by specialized technicians!

Note: Tr is the action time of the circuit breaker when the actual current is 2 times of the Ir setting value.

For example: When Ir is set to 1.0, Tr to 10s and the main loop current is 2×1600 A, the circuit breaker will break the main loop after lasting 10s. The action time accuracy is about $\pm 10\%$.

At the overload current, the breaking time of the main loop performed by the circuit breaker depends on the formula below: $t=(2*Ir/I)^{2*}Tr$

I-it indicates that the actual current value of the main loop under overload conditions.

- 7.1.4 Power distribution type indicator
- (1) Power indicator

The indicator flashes when the controller is in the working state.

(2) Alarm indicator

When the alarm indicator flashes, it indicates that the actual current exceeds the setting value of the alarm current Ip, which will change to be constantly on from flashing (yellow) after $T=(2*Ir/I)^{2*}Tr/2$.

(3) Overload indicator

When the overload indicator is constantly on, it indicates that the actual current exceeds 1.15 times of the overload long time-delay current setting value Ir; in the overload state, the circuit breaker will disconnect after a specified period of time.

- 7.1.5 Motor type indicator
- (1) Power indicator

The indicator flashes when the controller is in the working state.

(2) Alarm indicator (built-in)

When the alarm indicator is constantly on and flashes, it indicates that the actual current exceeds 0.9Ir, and shows different states depending on the current.

(3) Overload indicator

When the overload indicator is constantly on, it indicates that the actual current exceeds 1.1 times of the overload long time-delay current setting value Ir; in the overload state, the circuit breaker will disconnect after a specified period of time.

7.2 Setting of controller parameters

7.2.1 Parameters of power distribution protection controller

Table	8
-------	---

	Nu				Current a	nd time paramete	ers		
Dotod	mb								
Kaleu	er								
current	of	Ir(×In)	Tr(s)	Is(×Ir)	Ts(s)	Ig(×In)	Tg(s	Ii(×In)	Ip(×Ir)
ln(A)	pol								
	es								
800/1000	3	0. 4, 0. 5, 0. 6, 0. 7, 0. 8, 0. 9,	10, 15, 30, 4 5, 60, 80, 10 0, 120, OFF	2, 3, 4, 5, 6 , 7, 8, 9, 10 , OFF	0. 1, 0. 2, 0. 3,	0. 2, 0. 3, 0. 4, 0. 5, 0. 6, 0. 7, 0. 8, 0.	0. 1, 0. 2, 0. 3, 0. 4, 0. 5, 0. 6, 0. 7, 0.	3, 4, 5, 6, 7 , 8, 10, 12, 14, OFF	0.9,1.0, OFF
		0. 4, 0. 5,	10, 15, 30, 4	2, 3, 4, 5, 6	0.4	0, 2, 0, 3, 0.	0. 1. 0. 2. 0.	3, 4, 5, 6, 7	0.9,1.0,
1250/1600	3	0.6,0.7,	5, 60, 80, 10	, 7, 8, 9, 10	0.2,	4, 0. 5, 0. 6,	3, 0. 4, 0. 5,	, 8, 9, 10, 1	OFF
	5	0.8,0.9,	0,120, OFF	, OFF	0.3,	0.7,0.8,0.	0.6,0.7,0.	2, OFF	
		1.0,0FF			0.4	9,1.0,0FF	8,0.9,1.0		

Table 9

	Nu	Current and time parameters							
Rated	mb								
ourrent	er								
	of	Ir(×In)	Tr(s)	Is(×Ir)	Ts(s)	Ig(×In)	Tg(s	Ii(×In)	Irn(×Ir)
III(A)	pol								
	es								
800/1000	4	0. 4, 0. 5 0. 6, 0. 7 0. 8, 0. 9 1. 0, OFF	10, 15, 30 45, 60, 80 100, 120 OFF	2, 3, 4, 5 6, 7, 8, 9 10, OFF	0.1 0.2 0.3 0.4	0. 2, 0. 3, 0. 4 0. 5, 0. 6, 0. 7 0. 8, 0. 9, 1. 0 OFF	0. 1, 0. 2, 0. 3 0. 4, 0. 5, 0. 6 0. 7, 0. 8, 0. 9 1. 0	3, 4, 5, 6 7, 8, 10 12, 14 OFF	0.5 1.0 OFF
1250/1600	4	0. 4, 0. 5 0. 6, 0. 7 0. 8, 0. 9 1. 0, OFF	10, 15, 30 45, 60, 80 100, 120 OFF	2, 3, 4, 5 6, 7, 8, 9 10, OFF	0. 1 0. 2 0. 3 0. 4	0. 2, 0. 3, 0. 4 0. 5, 0. 6, 0. 7 0. 8, 0. 9, 1. 0 OFF	0. 1, 0. 2, 0. 3 0. 4, 0. 5, 0. 6 0. 7, 0. 8, 0. 9 1. 0	3, 4, 5, 6 7, 8, 9 10, 12 OFF	0.5 1.0 OFF

7.2.2 Parameters of motor protection controller

Table 10

Pated	Num	Current and time parameters							
current In(A)	ber of poles	Ir(A)	Class	Isd(*Ir)	Tsd(s)	Iunbl(%)			
800	3	320-800 In step of 8A	10A, 10, 20, 30	3, 4, 5, 6, 7, 8, 9, 10, OFF	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	10%, 20%, 30%, 40%, OFF			
1000	3	400-1000 In step of 10A	10A, 10, 20, 30	3, 4, 5, 6, 7, 8, 9, 10, OFF	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	10%, 20%, 30%, 40%, OFF			

Note: 1. When Isd is in the OFF position, the blocking protection is closed;

2. When Iunbl is in the OFF position, the current imbalance protection is off while the default protection is

off;

3. The short circuit protection Ii has built-in 13In;

4. When the current is 7.2Ir, the corresponding time for the Class gear is: 4s (10A), 8s (10), 16s (20), 24s (30).

7.3 Function description

7.3.1 Basic function table of power distribution type

Table 11

	Protection function	Other functions	Human Machine Interface
	Overload long-time delay protection	Alarm indication function	LED indicator
	Short circuit short-time		
	delay inverse time-limit		code switch operation
Tuno	protection		
Type	Short circuit short-time		
	delay fixed time-limit		
	protection		
	Short circuit		
	instantaneous protection		

Note: All protection must meet the power supply requirements of the circuit breaker, 0.2In for the three-phase power supply, 0.4In for the single-phase power supply.

7.3.2 Setting value of the power distribution type controller

(1) Overload long time-delay protection

The overload long time-delay protection is based on the true (RMS) value for protecting the load.

Table	12
-------	----

Sett	See Table 8 and Table 9									
	T		In=800/1000/1250/1600A							
	Ir setting value (s)	10	15	30	45	60	80	100	120	
	≤1.05Ir	>2h (no action)								
Action	>1.30Ir	<1h (action)								
ics	t(s) at 1.5Ir	17.77	26.67	53.33	79.99	106.67	142.22	177.77	213.33	
	t(s) at 2.0Ir	10	15	30	45	60	80	100	120	
	tr(s) at 7.2Ir	0.77	1.16	2.31	3.47	4.63	6.17	7.72	9.26	
	Accuracy (%)					±10				

Note: The action curve complies with tr= $(2Ir)^2 \times Tr/I^2$

tr: Overload long time-delay action time Tr: Setting value of the overload long time-delay action time

I: Actual running current Ir: Setting value of the overload long time-delay

action current

(2) Short-circuit short time-delay protection

The short time-delay protection prevents the impedance short-circuit of the distribution system

The short time-delay protection is divided into two segments: reverse time limit and fixed time limit.

Setting	current Is	See Table 8 and Table 9						
	Reverse time limit	Ts setting value (s)	0.1 0.2 0.3			0.4		
Action	Is≤I<1.5Is	ts action time (s) $t_s = (1.5Is)^2 \times Ts/I^2$						
characteristics	Fixed time limit 1.5Is≤I≤Ii	ts action time (s)	0.1	0.2	0.3	0.4		
		Accuracy (%)	±20		±10			

Tabl	e	13

Note: The action curve of the reverse time limit complies with $ts=(1.5Is)^2 \times Ts/I^2$, while the action time of the fixed time limit tracks the Ts setting value.

ts: Short-circuit short time-delay action time Ts: Setting value of the short-circuit short time-delay action time

I: Actual running current Is: Setting value of the short-circuit short time-delay action current (3) Short circuit instantaneous protection

The instantaneous protection function can prevent short circuit of metal solids of the distribution system. Due to larger short-circuit current of the fault, the system requires being disconnected rapidly.

Table	14
-------	----

Action	Setting current Ii (×In)	See Table 8 and Table 9				
characteristic s	Action time	≤0.85Ii	Inaction			
	Action time -	≥1.15Ii	<50ms			

(4) Ground fault protection

The ground protection function can prevent the grounded short circuit of metal solids of the distribution system with the fixed time-limit protection.

Table 15

Setting cu	rrent Ig See Table 8 and Table 9											
Action	Fixed	tg action time (s)	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
stics	limit	Accuracy (%)	±20					±10				

(5) Overload pre-alarm

Setting current Ip	See	e Table 8	Accuracy (%)	Remarks
		The indicator changes		
0.9Ir	Alarm indicator	to be constantly on		The four-pole
		from flashing	15	controller is not
		The indicator changes	±3	available with the
1.0Ir	Alarm indicator	to be constantly on		adjustment gear,
		from flashing		built-in 0.9 Ir
OFF	OFF	OFF OFF		

Table 16

(6) N-phase protection

The four-pole controller features the N-phase overload long time-delay protection features:

N-phase protection type	See Table 9			
0.5Ir	The protective action point is half of the setting value in case of a N-phase overload fault			
1.0Ir	The protective action point equals to the setting value in case of a N-phase overload fault			
OFF	N-phase protection off			

Note: N-phase overload long time-delay protection time tracks the setting value of Tr, and N-phase short time-delay protection time tracks the setting value of Ts.

The short-circuit instantaneous protection of the four-pole controller is the same as other phases. 7.3.3 Basic function table of the motor type controller

Table 18

	Protection function	Other functions	Human Machine Interface
	Overload long-time delay protection	Alarm indication function	LED indicator
	Blocking protection		code switch operation
Туре	Short-circuit protection		
	Current unbalance		
	protection		
	Default phase protection		

- 7.3.4 Setting value of the motor type controller
- (1) Overload long time-delay protection

Table 19						
Setting	g current Ir		See T	able 10		
	Class setting value (a)		In =800	A/1000A		
	Class setting value (s)	4	8	16	24	
Action features	≤1.0 Ir	>2h inaction				
level time has	>1.20 Ir	<1h action				
nassed (inverse	tr(s) at 1.5 Ir	92.2	184.3	368.6	553	
time limit)	tr(s) at 6.0 Ir	5.8	11.5	23	34.6	
	tr(s) at 7.2 Ir	4	8	16	24	
	Accuracy (%)	±10				

Note: L=1080±3 when n=60

1) The action curve complies with t= $(7.2)^2 \times (Ir)^2 \times Class/I^2$

t: Overload protection action time Class: Tripping level time setting value I: Actual running current Ir: Overload protection action current setting value

2) See Table 10 for the setting current Ir value

3) When the normal current is more than 1.5Ir and runs to the tripping level time point, it will act according to the current tripping level time.

(2) Blocking protection Isd

Table 20

	See Table 10		
Action characteristics	Fixed time limit	t action time (s)	See Table 10
Action characteristics	±15		

Note: 1) See Table 10 for the setting current Isd value

2) The blocking protection will be effective only when the tripping level time is exceeded, and the action feature is a time limit

(3) Current unbalance protection Iunbl

Table 21

	See Table 10		
S. L., 11(0/)	During startup (<class)< td=""><td></td><td>0.7</td></class)<>		0.7
δ≥lunbl(%)	During normal operation (≥Class)	t action time (s)	4
δ <iunbl(%)< td=""><td colspan="3">Inaction</td></iunbl(%)<>	Inaction		

Note: 1) The calculation of the actual current unbalance conforms to $\delta = \begin{pmatrix} 3 \\ MAX \end{pmatrix}$

 $|I_k-Iavg|$ ×100% / Iavg

$$\sum_{k=1}^{3} I k$$

Iavg=-

 δ : Percentage value of the actual current unbalance of the three-phase electricity I: Three-phase current Iavg: Three-phase average current value, k is the three-phase current SN (4) Default phase protection

		Table 22				
Action characteristics	I_0 /Im	During startup (<class)< td=""><td>t action time (a)</td><td>0.7</td></class)<>	t action time (a)	0.7		
Action characteristics	1~0.41f	During normal operation (≥Class)	t action time (s)	4		

11 00

(5) Short-circuit instantaneous protection

	Setting current li (×In)		13 In
Action characteristics	Action time	≤0.85Ii	Inaction
		≥1.15Ii	<50ms

8. Outline and Mounting Hole Dimensions of Circuit Breaker

8.1 External dimensions of 3P front-plate connection products



8.2 External dimensions of 3P extended front-plate connection products



8.3 External dimensions of 4P front-plate connection products



8.4 External dimensions of 4P extended front-plate connection products



Level behind plate 3P

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8.6 4P Rear panel wiring





8.7 Product installation dimension diagram



Table	24	Wiring	Screw	Dime	nsions
Iuoio	_	•• II III 5	501010	Dune	norone

SN	Thickness of the wiring copper bar (mm)	Hexagon screw length (mm)
1	6, 8	M10X30
2	10, 12	M10X35
3	15	M10X40

Note: The hexagon screw length shall be indicated when ordering.

8.8 Safe mounting distance of circuit breaker

Table 24	Insulation	Distance	Mounted	in the	Metal	Cabinet	(Unit mm))
Table 2.) insulation	Distance	Mounted	In the	wietai	Cabinet	(Omt. mm))

Mounting distance	A (inlet wire end t	o the cabinet face)	B (distance from	C (outlet wire
Model	With a terminal cover	Without a terminal cover	cabinet face)	face)
NDM3EX-1600	25	110	35	35



8.9 Insulation distance installed in metal cabinetTable 26 Minimum Center Distance between Rowed Circuit Breakers (Unit: mm)

Model	Width of circuit breaker		I Center distance	
	3 poles	4 poles	3 poles	4 poles
NDM3EX-1600	210	280	250	320



8. 10 Minimum center distance of circuit breaker row Table 27 Minimum Distance between Stacked Circuit Breakers (Unit: mm)

Madal	H (distance of circuit breaker from bottom)		
woder	With a terminal cover	Without a terminal cover	
NDM3EX-1600	/	155	

Nader 良信



Note: The limit deviation not indicated with the tolerance dimensions is as per GB/T 1804-c.

9. Accessories Function Description

9.1 Under-voltage release

When the power voltage drops to the range (35%~70%) of the under-voltage release, the release can break the circuit breaker reliably; when the power voltage is 35% lower than the rated working voltage of the under-voltage release, the release can prevent closing of the circuit breaker; when the power voltage is 85% higher than the rated working voltage of the under-voltage release, the release can guarantee reliable closing of the circuit breaker.

Table 28 Voltage Specifications and Power Consumption of Undervoltage Release

Accessory name	Under-voltage release			
Voltage specifications (V)	AC/DC 110V	AC/DC 230V	AC 400V	
Retention power consumption (W)	7	8	10	
Instantaneous power consumption (W)	230	500	270	

9.2 Shunt release

When the external voltage of the shunt release is between 70% and 110% of the rated control power voltage, the release can break the circuit breaker reliably.

Accessory name	Shunt release			
Voltage specifications (V)	DC 24V	AC/DC 110V	AC/DC 230V	
Retention power consumption (W)	3.5	3.5	3.5	
Instantaneous power consumption (W)	240	230	300	

Table 29 Voltage Specifications and Power Consumption of Shunt Release

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Note: Working principle of the shunt release: a single pulse action (the suggested power-on time above 200ms). If another action is required, the shunt release can only be operated after being off (the suggested interval time above 200ms), reset and energized. The time from power on of the shunt release (receiving signal) to product tripping is 100ms.



9.3 Rated parameters of the auxiliary contact

Table 30 Rated Parameters of the Auxiliary Contact

Accessory name		Auxiliary contact		
Voltage specifications		AC250V/10A,	AC400V/3A,	DC220V/0.2A,
(V)/conventional thermal current (Ith)		DC24V/10mA		
Wiring Diagram	Off		F2F1F1	
	On		F2F1F1	
Internal resistance			$<30 \mathrm{m}\Omega$	

Note: For the DC24V/10mA auxiliary contact, please indicate it when ordering.

9.4 Rated parameters of the alarm contact

Table 31 Rated Parameters of the Alarm Contact

Accessory name		Alarm contact	
Voltage specifications (V)/conventional thermal current (Ith)		AC250V/10A, AC400V/3A, DC220V/0.2A	
Wiring diagram	On, off	B2B1 B4B1	
	Free tripping	B2 B1 B4 B1	
Internal resistance		$<30 \mathrm{m}\Omega$	

Note: The standard wire length of the undervoltage release, shunt release, auxiliary contact and alarm contact wiring is 0.7m, which can be customized according to the requirements.

9.5 Operating mechanism of the rotation handle

Manual operation—the handle mounting hole diagram and external dimension diagram of manual operation are shown as below:



External Dimension Diagram of Manual Operation



Handle Mounting Hole Diagram

9.6 Electric operating mechanism

Electric operation-the external dimensions of the circuit breaker and its electric operating mechanism installed:





Note: For manual operation, operate it 180° in the clockwise direction while operation in the counterclockwise direction is prohibited; for electric operation connection, it is prohibited to connect P1 and P2 with S1, S2 and S4.

Accessory name	Electric operating mechanism			
Voltage specifications	DC24V	AC110V/DC110V	AC230V/DC220V	AC400V
Power	80W	400W	400W	400W

10. Installation Direction of Circuit Breaker

For vertical installation of the product, the gradient between the installation surface and the

vertical plane is no more than $\pm 5^{\circ}$.

Horizontal installation of the product.



Vertical Installation

Horizontal Installation

11. Packaging and Storage of Circuit Breaker

Minimum packaging quantity: 1 piece/box. The packaged products should be stored in a warehouse with the air ventilation and the relative humidity no more than 80% when the ambient temperature is $-40^{\circ}C \sim +75^{\circ}C$. No acidic alkaline or other corrosive gas exists in the ambient air in the warehouse. Under the conditions above, the storage period shall be no more than three years since the manufacturing date.

SN	Name	Specification	3P Quantity/Set	4P Quantity/S et
1	Cross small pan-head screw	M5×100	4	4
2	Hexagon nut	M5	4	4
3	Spring washer	5	4	4
4	Plain washer	5	4	4
5	Phase partition		4	6
6	Ground partition		2	2
7	Extended handle		1	1

12. List of Accessories and Installation

13. Circuit Breaker Notes

 Various characteristics and accessories of the circuit breaker are set in the factory. The circuit breaker, tripping unit or other accessories can only be adjusted, installed and maintained by the trained or qualified professionals according to the parameter requirements of the line design;

- 2) Ensure that the power supply is off before installing or removing any device;
- 3) The circuit breaker handle can be located in three positions, indicating three states: on, off and free tripping. When the handle is in the free tripping position, pull the handle in the off direction when the circuit breaker is connected and on.