

# Product Specification of NDM2L-125

Product Name:Residual Current Breaker  
with Overload

Product Model:NDM2L-125

## 1 Purpose

NDM2L-125 molded case leakage circuit breaker product specifications, in order to clarify the content and scope of product development, to provide the basis for the follow-up project plan

## 2 Range

This specification applies to NDM2L-125 molded case leakage circuit breaker body and related accessories

## 3 Terminology

术语	描述
Type AC CBR	The residual sinusoidal alternating current of the non-DC component, whether applied suddenly or slowly, is guaranteed to trip the CBR
Type A CBR	The residual sine current and the residual pulsating direct current (with / without the superposition of the DC component) that are suddenly applied or slowly raised can ensure that the CBR

## 4 Reference

NO	文档名称
1	P12001-NDM2L-125/250/400/630 MCCB Product package requirements table
2	P12001-NDM2L-125-630 MCCB Conceptual scheme

## 5 Basic Require

### 5.1 Application Range

NDM2L series molded case leakage circuit breaker, the rated insulation voltage of 1000V, for AC 50Hz or 60Hz, rated working voltage 380V / 400V / 415V, do not frequent conversion and the motor is not frequent use. Circuit breakers with overload, short circuit and undervoltage protection, to protect the line and power equipment from damage. AC-type leakage circuit breakers, to ensure that they are tripped with the remaining sinusoidal alternating current of the DC component without any sudden or slow rise. Type A leakage circuit breakers are guaranteed to be tripped with respect to the residual sinusoidal current and the residual pulsating direct current (with or without specified superposed DC component) that is suddenly applied or slowly raised.

NDM2L-125 products, with A and AC-type leakage protection, 3P breaking capacity M, H-type, 4P breaking capacity with the M-type.

NDM2L series of leakage circuit breakers, product structure requirements are integrated structure with leakage alarm does not trip function.

## 5.2 Specification Type



ND M 2 L-         /       /                       

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

No.	Implication	NDM2L
1	Brand Code	ND Nader 牌低压电器
2	Product Code	M
3	Design Code	2
4	Derivation code	L: Electric leakage protection function
5	Frame size	125
6	Grade of rated ultimate short circuit breaking capacity	Type M
		Type H
		4P: No code
7	Operation method	No code: Direct handle operation
		P: Motor operation
		Z: Rotary handle operation
8	The Tripped type of residual current	No code: AC type residual current protective device;
		A: A type residual current protective device.
9	Type of time delay	No delay: X Delay: Y
10	The Tripped type of residual current	Type V
11	Trip unit	3: Thermal magnetic
12	Number of poles	3、4
13	Accessory Code	Details in Page 14: Accessory Require

14	Application	No code: Power distribution
15	N-pole type of four pole production	A: N-pole is always close without overload release B: N-pole is open or close together with other three poles and without overload release C: N-pole is open or close together with other three poles and with overload release
16	Rated current (In)	16/20/25/32/40/50/63/80/100/125

### 5.3 Working Environment

Environment	Details
Working Temperature	-35~70°C
Altitude	≤2000m
Pollution level	III
Salt fog level	Satisfied 48 hours

## 6 Function Require

### 6.1 Rated Residual Operating Current

NDM2L-125 Type A 和 AC Electric leakage protection function

Function		Residual Operating V	
Residual Type		AC	A
Current	Non-Delay X	30mA、100mA、300mA、500mA	
	Delay Y	100mA、300mA、500mA	
Rated residual non-operating current		$1/2 * I_{\Delta n}$	
Rated residual current making/breaking capacity		$1/4 * I_{cu}$	

### 6.2 Rated Residual Operating Time

Residual Current		$I_{\Delta n}$	$2 * I_{\Delta n}$	$5 * I_{\Delta n}$	$10 * I_{\Delta n}$
Non-Delay	Max. Breaking Time (s)	0.2	0.1	0.04	0.04
Delay	Max. Breaking Time (s)	0.5/1.15/2.15	0.35/1/2	0.25/0.9/1.9	0.25/0.9/1.9
	Limiting non-driving time $\Delta t$ (s)	---	0.1/0.5/1	---	---

## 7 Technical Indicators

### 7.1 Standard Conformed

GB / T 2423.4-2008	Environmental testing for electric and electronic products Part 2: Test methods - Test Db: alternating hot and humid
GB/T 4207-2003	Measurement of Electrical Traces and Resistance Tracing Indexes of Solid Insulating Materials in Humid Conditions
GB14048.1-2006	Low voltage switchgear and controlgear - Part 1: General (IEC 60947-1: 2001, MOD)
GB14048.2-2008	Low voltage switchgear and controlgear - Part 2: Low - voltage circuit - breakers (IEC 60947-2: 2006, IDT)
GB14048.5-2008	Low voltage switchgear and controlgear - Part 5-1: Control circuits Electrical and switching elements Electromechanical control circuits (IEC 60947-5-1:2003, MOD)
GB/T 14092.3-2009	Mechanical products Environmental conditions High altitude
GB/T 19608.3-2004	Classification of special environmental conditions Part 3: Plateau
GB/T 20645-2006	Technical requirements for low - voltage electrical appliances for high altitude in special environmental conditions
GB/T 20626.3-2006	Special environmental conditions Plateau electronic products Part 3 Protection of lightning foul condensation
JB/T 834-1999	Technical requirements for tropical low - voltage electrical appliances

### 7.2 Technical Parameters

#### 7.2.1 Electrical Characteristics

NDM2L-125 Type A 和 AC Electric leakage protection MCCB

Name	Details
Poles	3P/4P
Rated Current (A)	16/20/25/32/40/50/63/80/100/125
Rated Voltage (V)	380/400/415
Rated insulation Voltage Ui (V)	1000
Frame Size	125
Rated ultimate breaking capacity Icu (kA)	NDM2L-125M&4P:52.5kA NDM2L-125H:85kA
Rated operated breaking capacity	NDM2L-125M&4P:35kA NDM2L-125H:50kA

Ics(kA)	
Operating cycles(times)	Charged:8000 uncharged:20000
Pollution level	III
Rated insulation voltage Uimp	8kV

## 7.2.2 Cable Contents

**Note: The default dimension for "D" is 150mm. It can be also customized.** <sup>Note1</sup>

### Sectional Area of Connecting Bus and Cable

Rated current (A)	10	16 20	25	32	40 50	63	80	100	125 140	160	180 200 225	250	315 350	400
Sectional Area of Connecting Wire(mm <sup>2</sup> )	1.5	2.5	4.0	6.0	10	16	25	35	50	70	95	120	185	240

### Selection of Cable

Rated current (A)	Sectional Area of Cable		Dimension of Copper Bar	
	Quantity	Sectional Area of Cable (mm <sup>2</sup> )	Quantity	Dimension (mm <sup>2</sup> )
500	2	150	2	30×5
630	2	185	2	40×5
700, 800	2	240	2	50×5 <sup>Note2</sup>

## 8 Constraint

NDM2L-125 development of type A and AC leakage circuit breaker two;  
Product structure as a whole.

Leakage function to increase leakage instructions, and NDM3L series of leakage circuit breaker consistent.

The above products are subject to the latest requirements of the company.

## 9 Special Require

### 9.1 Environment

Normal working environment:

▲ can withstand the impact of humid air, salt spray, oil mist.

▲ The maximum inclination is 22.5 °.

- ▲ in the absence of explosive media, and the media is not enough to corrode the metal and damage the insulation of the gas and conductive dust place.
- ▲ should be installed in the absence of rain and snow invasion of the place.

### 9.2 Electonmagnetic Compatibility

Meet the EMC performance requirements of GB14048.2

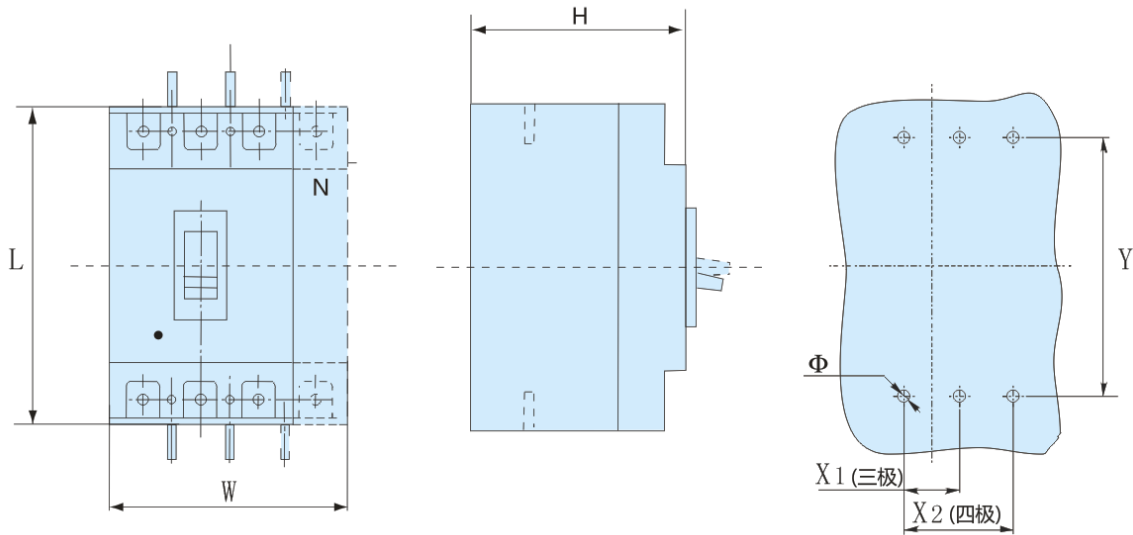
### 9.3 Protection

Protection class: IP20

## 10 External Interface

NDM2L series molded case leakage circuit breaker can increase the leakage alarm does not trip module

## 11 Appearance



Product Size Table (mm)

	L	W		H	Y	X1	X2	Φ
		3P	4P					
<b>NDM2L-125</b>	<b>150</b>	<b>92</b>	<b>122</b>	<b>92</b>	<b>129</b>	<b>30</b>	<b>60</b>	<b>4.5</b>

## 12 Installation

Can be installed horizontally, can also be installed vertically

## 13 Quality

### 13.1 Maintainability

The project of the circuit breaker for the new R & D content, manufacturing the site of the majority of production equipment, you can use existing products for maintenance

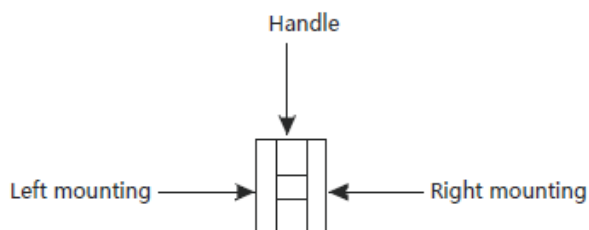
### 13.2 Manufacturability








Circuit breaker body internal zero, parts in the production site assembly, all production site assembly, equipment can borrow the product. Thermo-magnetic and leakage release for the new design, increase the relevant fixture, the use of mature technology for manufacturing

## 14 Attachment

### Accessory Code



#### Legends

-  Single auxiliary contact
-  Double auxiliary contacts
-  Alarm contact
-  Shunt Release
-  Undervoltage release

### Table 1 Accessory Code



Code	Mounting Position Name	Type Number of Pole	NDM2L-125		NDM2L-250		NDM2L-400		NDM2L-630	
			3	4	3	4	3	4	3	4
			00	No accessory	—	—	—	—	—	—
10	Shunt Release									
20	Double Auxiliary Contacts									
21	Single Auxiliary Contact									
30	Undervoltage Release									
40	Shunt Release and Double Auxiliary Contacts									
41	Shunt Release and Single Auxiliary Contact									
50	Shunt Release and Undervoltage Release									
60	Two Sets Double Auxiliary Contacts									
61	Two Sets Single Auxiliary Contact									
62	Double Auxiliary Contacts and Single Auxiliary Contact									
70	Undervoltage Release and Double Auxiliary Contacts									
71	Undervoltage Release and Single Auxiliary Contact									
08	Alarm Contact									
18	Shunt Release and Alarm Contact									
28	Double Auxiliary Contacts and Alarm Contact									
38	Undervoltage Release and Alarm Contact									
48	Shunt release, Single Auxiliary Contact and Alarm Contact									
58	Single Auxiliary Contact and Alarm Contact									
68	Double Auxiliary Contact, Single Auxiliary Contact and Alarm Contact									
78	Undervoltage Release, Single Auxiliary Contact and Alarm Contact									

- Note: 1.For 4-pole products, the accessory on the right side is installed by the position of N pole  
2. “—” mean no accessory  
3.For 3-pole products, it only can be installed one accessory on the left side

## 15 Environmental Protection

Conform to the RoHs directive

## 16 Certification

CCC certification

## 17 Packaging

Packing capacity of 1 / box (box), packaged into the box of the product, should be in the ambient temperature of  $-40 \sim 75$  °C, corresponding to the relative humidity of 80%, the surrounding air without acid, alkaline or other corrosive gas warehouse In the storage. Under the above conditions, the storage period is not more than 18 months from the date of manufacture