NO:2022.06

CHINT ELECTRICS

NM8N High-voltage (HV) Series Molded Case Circuit Breaker

User Instruction

Standards: IEC/EN 60947-2

⚠ Safety Alert

1. It is strictly prohibited to install the product in the environment containing flammable & explosive gas and wet condensation, and it is strictly prohibited to operate the product with wet hand.
2. Do not touch the conductive part of the product during product operation stage .
3. When installing, repairing and maintaining the product, ensure that the line is powered off.
4. Do not install in place where gas medium can corrode metal and damage insulation.
5. In order to avoid dangerous accident , the product must be installed and fixed in strict accordance with the requirements of this Instruction Manual.

CHINT ELECTRICS

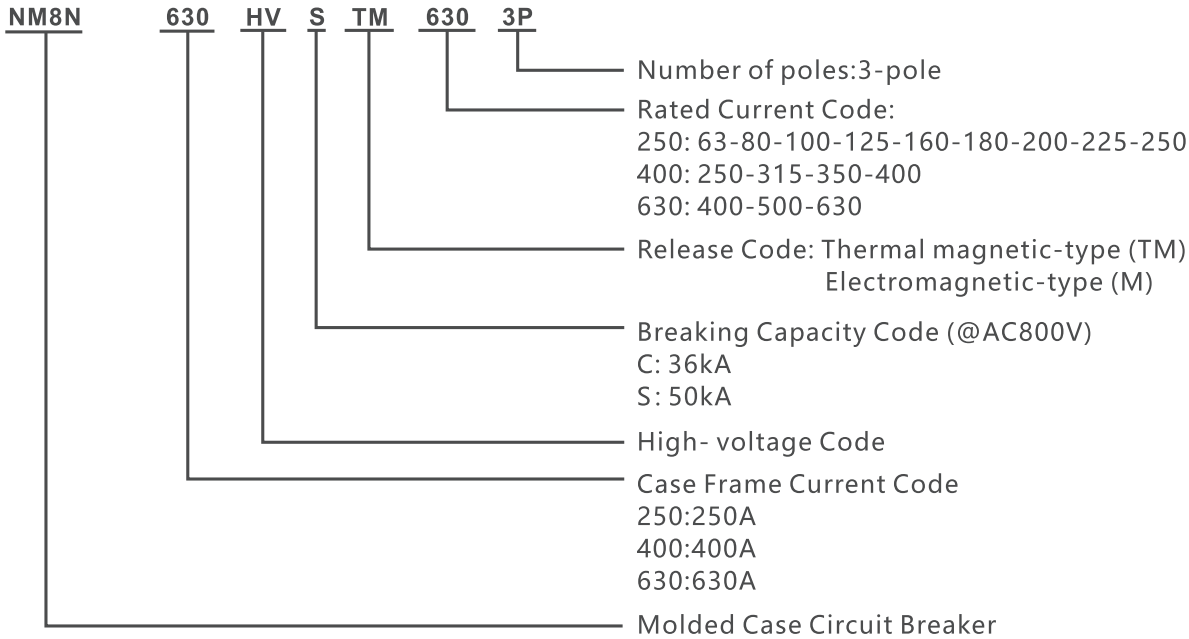
Contents

1 Main Purpose and Scope of Application

This is the Instruction Manual for the NM8N High-voltage (HV) Series Molded Case Circuit Breaker, hereafter referred to as the Circuit Breaker. The Manual specifies the conditions and environments where the product is expected to be operated within, and it outlines the main specifications, technical parameters, the overall and installation dimensions, and other matters for this Circuit Breaker.

This Instruction Manual gives the specification and the operation of the Molded Case Circuit Breaker NM8N High-voltage (HV) Series (Hereinafter referred to as the Circuit Breaker), which is designed solely for making and breaking electrical circuits of AC 50Hz/60Hz electrical systems, and any other systems with maximum AC voltage 1150V at maximum rated current of 630A. The Circuit Breaker can reliably protect the electrical system when the electrical loading of the system is overloaded, short-circuited or under-voltage; and it also provides short-circuit protection for starting up of electrical motor infrequently.

2 Model, Specification and Meaning



3 Conditions and Environments for Normal Service, Installation, and Transportation & Storage

3.1 Ambient Air Temperature

The operating and storage temperature of the Circuit Breaker is -40℃~+70℃, and the average value in 24h shall not exceed +35℃. When the ambient temperature is -40℃~+ 70℃, the User/s shall consider capacity reduction or temperature compensation.

When the maximum temperature is +40℃, the relative humidity of the air shall not exceed 50%. At a lower temperature, a higher relative humidity can be allowed (For example: Up to 90% at +20℃). Special measures shall be taken for occasional condensation due to temperature change.

The altitude of the installation site for the product shall not exceed 2000m;Note: When the altitude of the installation site for the product exceeds 2000m, please use it according to the Altitude Derating Correction Factor.

Please see the attached Tables for the product Inverse Time Characteristics, Temperature Compensation Curves and Altitude Derating Correction Factor.

Pollution Class: Class 3;

Installation Category: Class III.

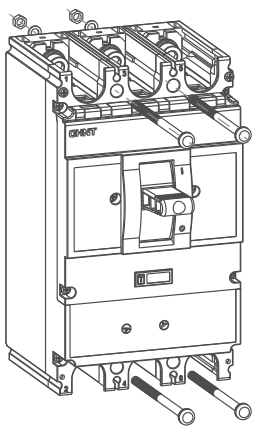
3.2 Conditions and Environments for Installation

Under the conditions of Safety Alert of this Instruction Manual, it shall be installed in a place without shaking, impact and vibration; The inclination between the mounting surface and the vertical surface for the product shall not be greater than ±5%.

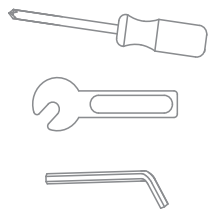
3.3 Transportation & Storage Conditions

The applicable temperature range for the product is from -40℃ to+70℃. The storage place for the product shall be ventilated and dry, and shall not be attacked by rain, snow and shall not be exposed to direct sunlight.

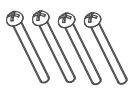
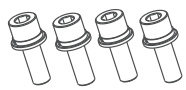
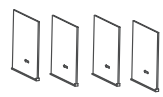
4 Check and Test



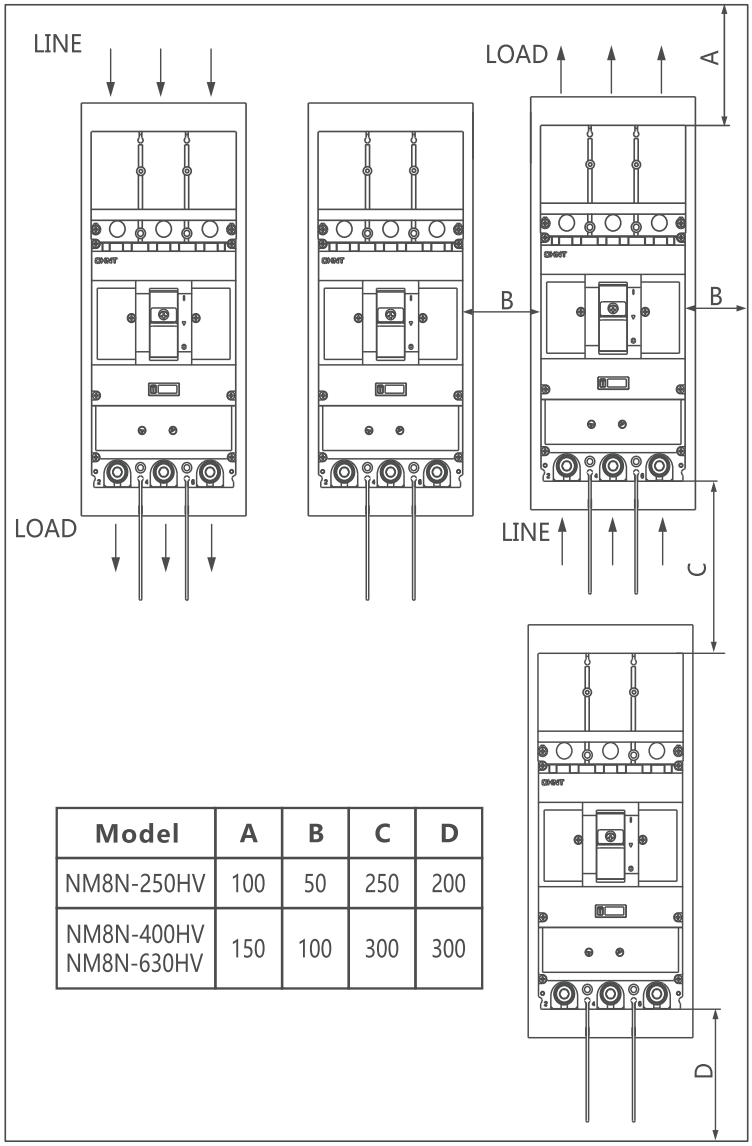
Essential Tools



Check

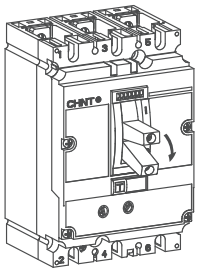
Model							
NM8N-250HV	M5x110	ø5	ø5	M5	M8x20	—	—
NM8N-400HV NM8N-630HV	M5x110	ø5	ø5	M5	M10x30	—	—

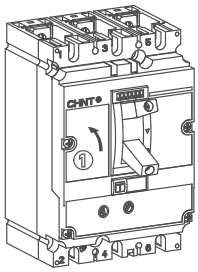
1. To determine the technical parameters of the product;
2. The installation, operation, repair and maintenance of the product can be only carried out by professional qualified personnel.

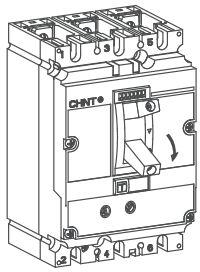


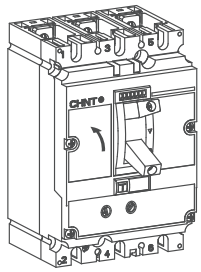
Model	A	B	C	D
NM8N-250HV	100	50	250	200
NM8N-400HV NM8N-630HV	150	100	300	300

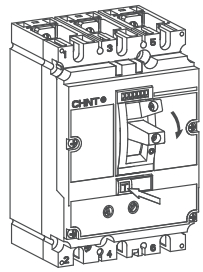
To ensure minimum installation distance


Back to the LOCK postion


ON


OFF


ON


TRIP

Test

5 Overall and Installation Dimensions

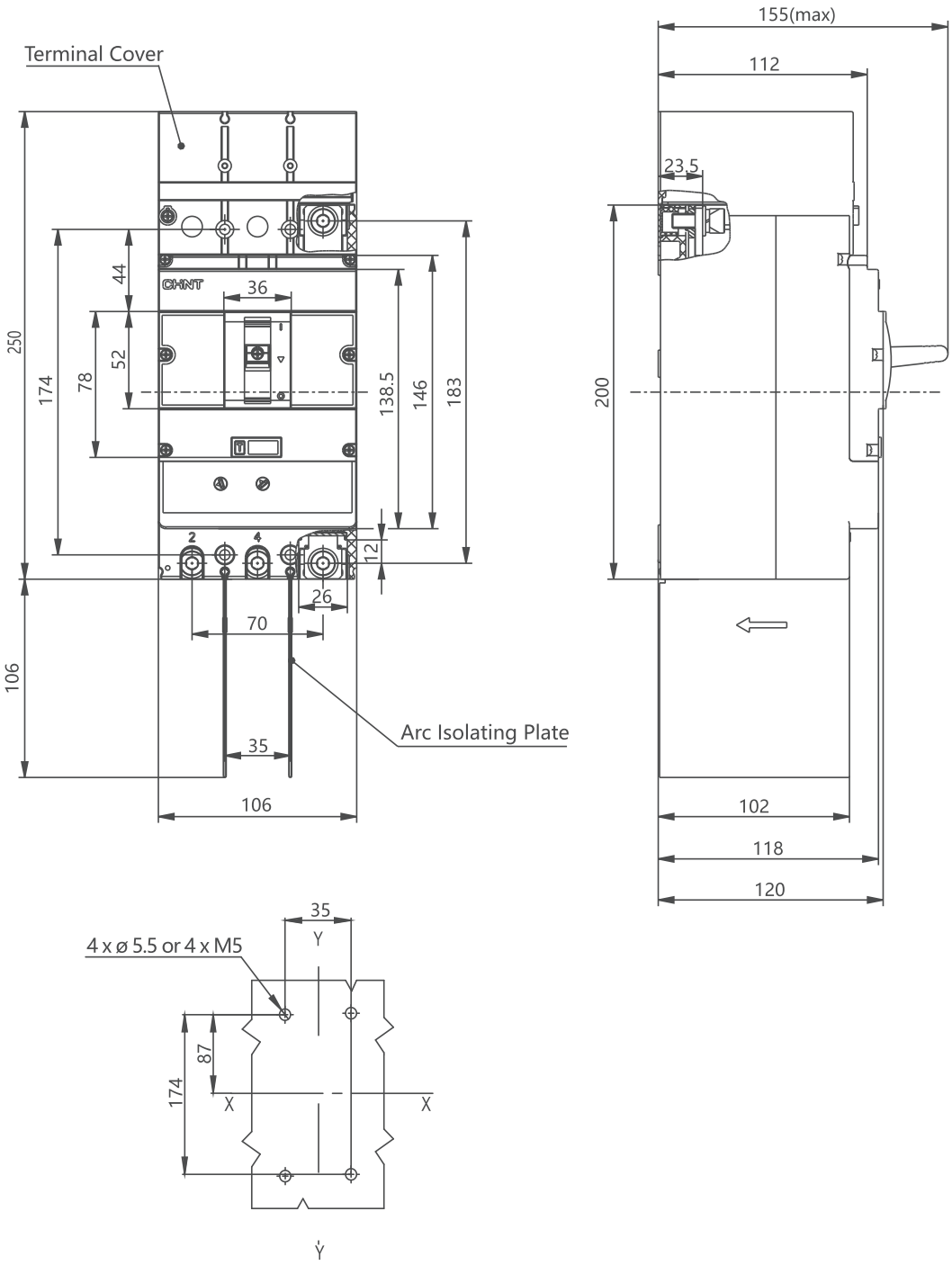


Fig 1 Overall and Installation Dimensions for NM8N - 250 HV

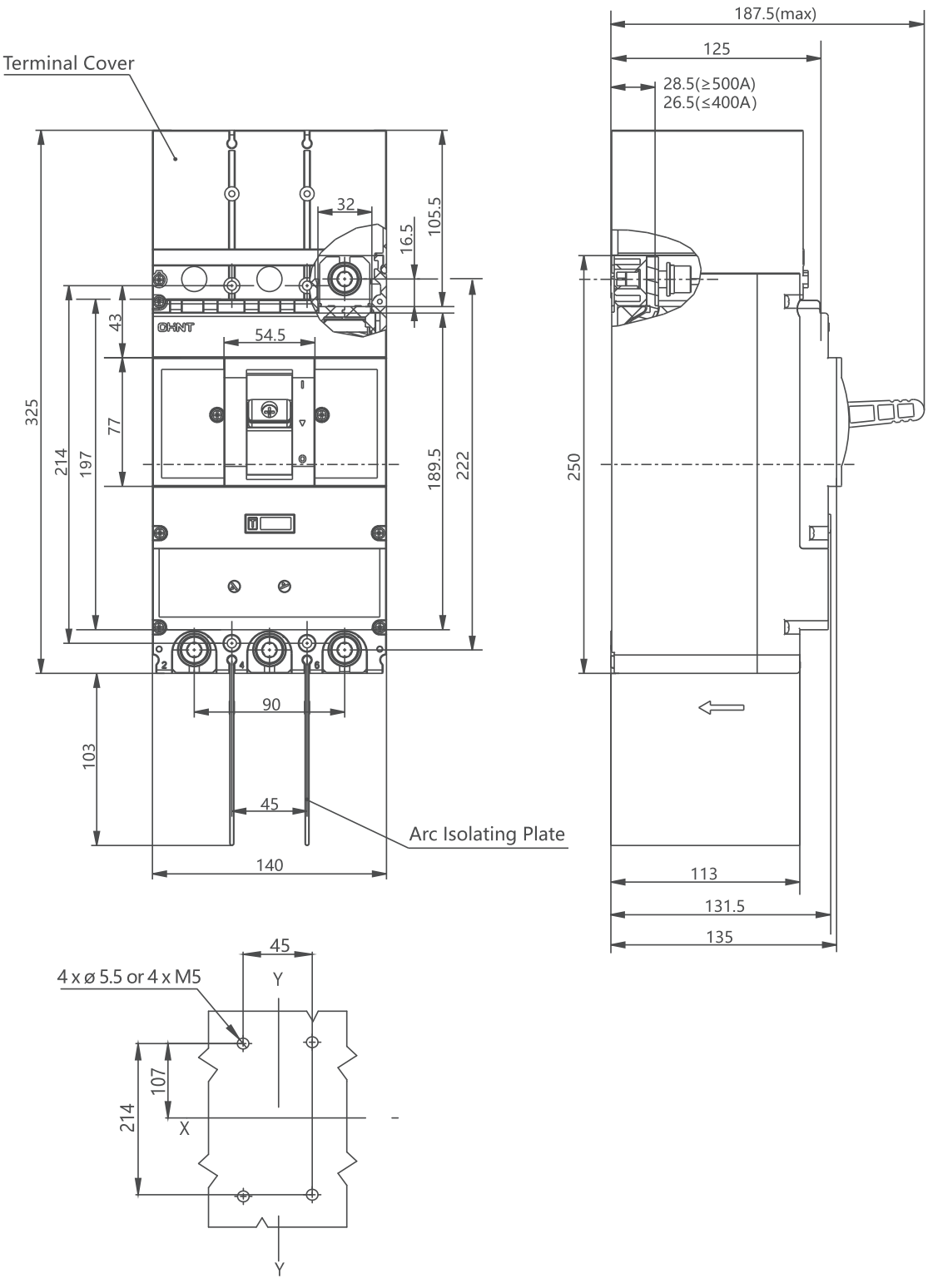


Fig 2 Overall and Installation Dimensions for NM8N - 400/630 HV

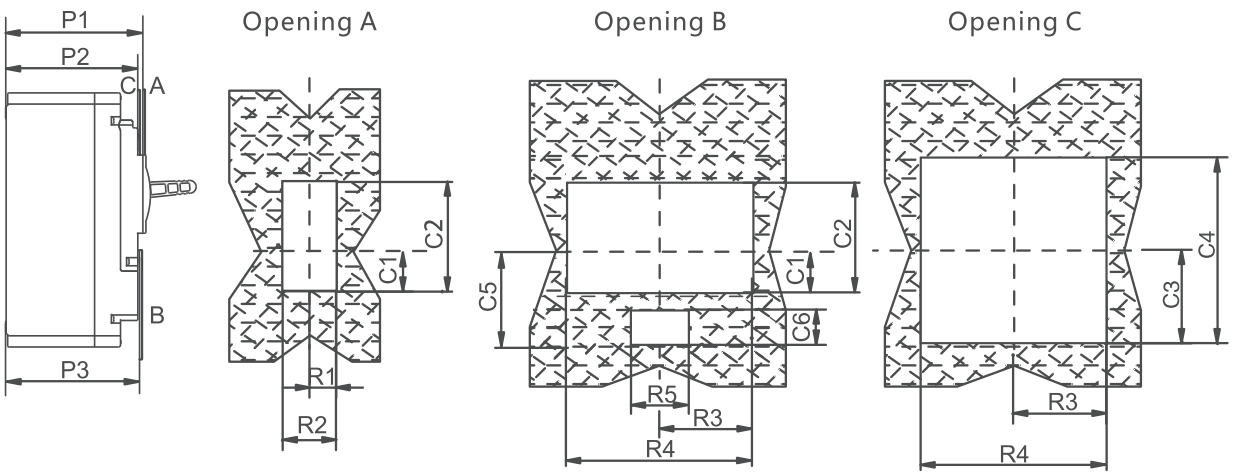


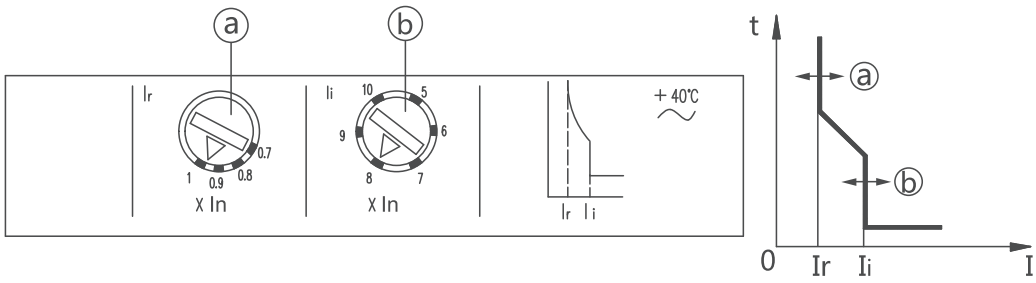
Fig 3 Opening Sizes in front of NM8N - 250 ~ 630 HV Cover

Unit: mm

Size Category	Size Code	Model	
		NM8N - 250HV	NM8N - 400HV/630HV
Opening sizes in front of Cover	P1	121	136
	P2	112.5	126
	P3	118.5	132
	R1	18.5	28
	R2	37	56
	R3	53.5	70.5
	R4	107	141
	R5	29	/
	C1	9.5	13.5
	C2	53	78
	C3	73.5	99
	C4	139.5	190
	C5	35.5	/
	C6	12	/

Table 1 Opening Sizes in front of NM8N - 250 ~ 630 HV Cover

6 Release



ⓐ The setting value of over-current protection are adjustable.
ⓑ The setting value of short-circuit protection are adjustable.

Example: Take NM8N-250HVS TM 250 3P as an example:

ⓐ: Knob for adjusting long-delay current setting

In 250A

↓

Ir | 0.7 | 0.8 | 0.9 | 1.0 |

↓

Ir=1.0X250A(In)=250A

ⓑ: Knob for instantaneous current setting

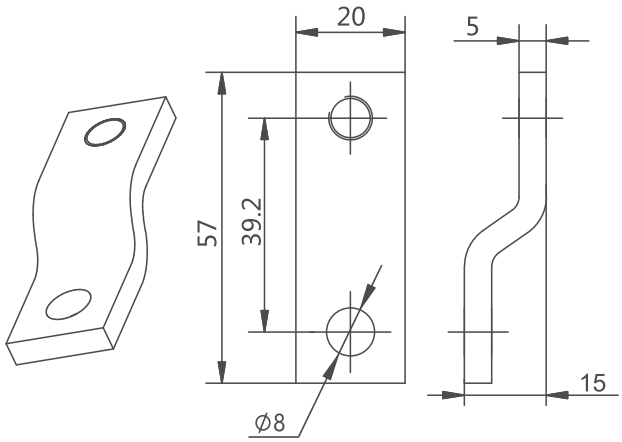
Ii | 5 | 6 | 7 | 8 | 9 | 10 |

↓

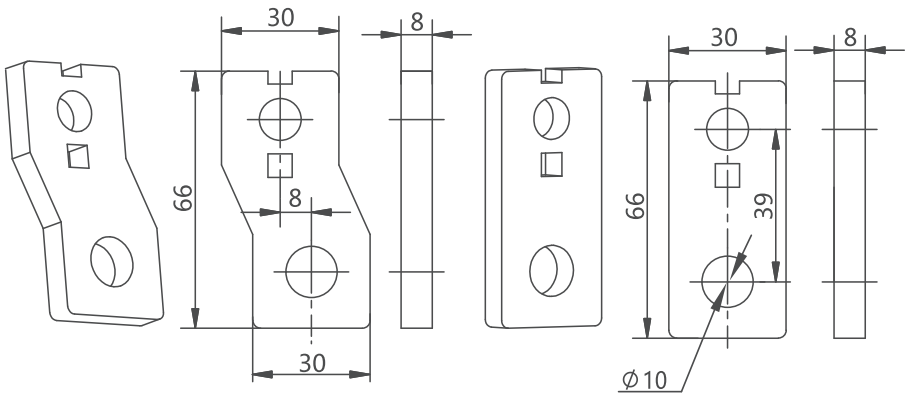
Ii=8X250A(In)=2000A

Product Model	Number of poles	Setting Value of Thermal Magnetic-type Release	
		Over-load Protection (Thermal Protection)	Short-circuit Protection (Magnetic Protection)
NM8N-250HV	3P	0.7~1.0In	10 In (Power distribution 63A~100A) 7~12In (Power distribution 125A~160A) 5~10In (Power distribution 180A~250A) 12In (Motor63A~100A) 9~14In (Motor 125A~250A)
NM8N-400HV NM8N-630HV	3P	0.7~1.0In	5~10In (Power distribution) 9~14In (Motor)

7 Installation and Wiring

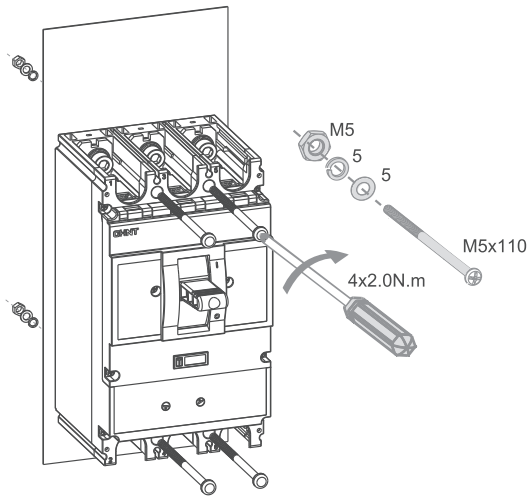


NM8N-250HV

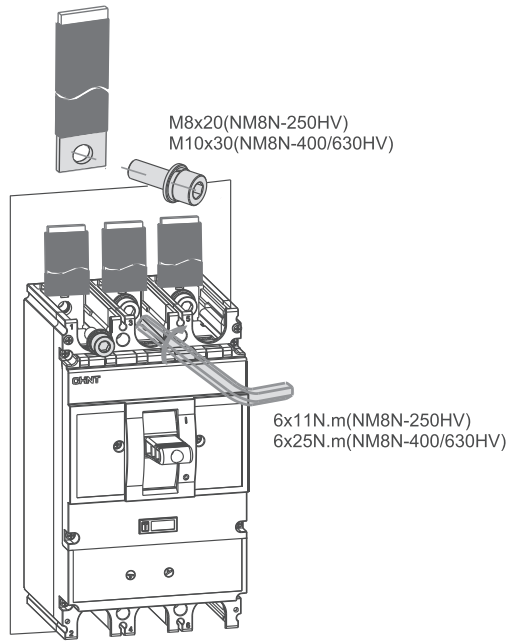


NM8N-400/630HV

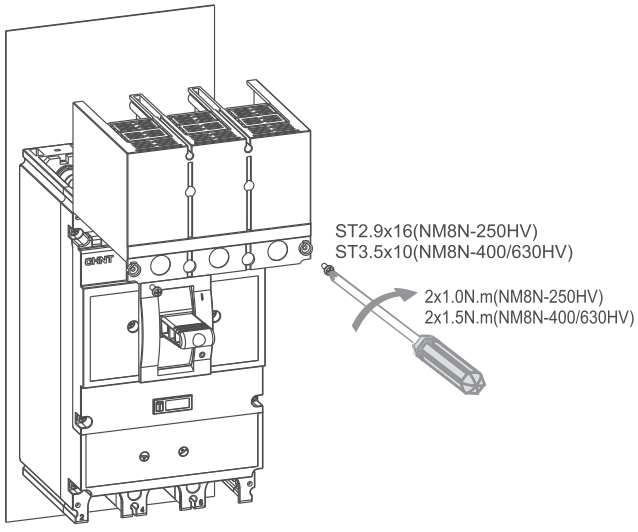
Sizes for Front Connection Plate and Conductor


M5
5
5
M5x110
4x2.0N.m

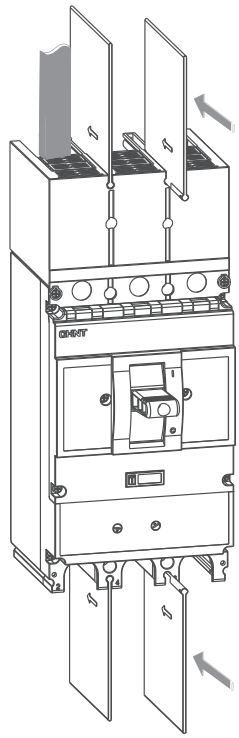
1


M8x20(NM8N-250HV)
M10x30(NM8N-400/630HV)
6x11N.m(NM8N-250HV)
6x25N.m(NM8N-400/630HV)

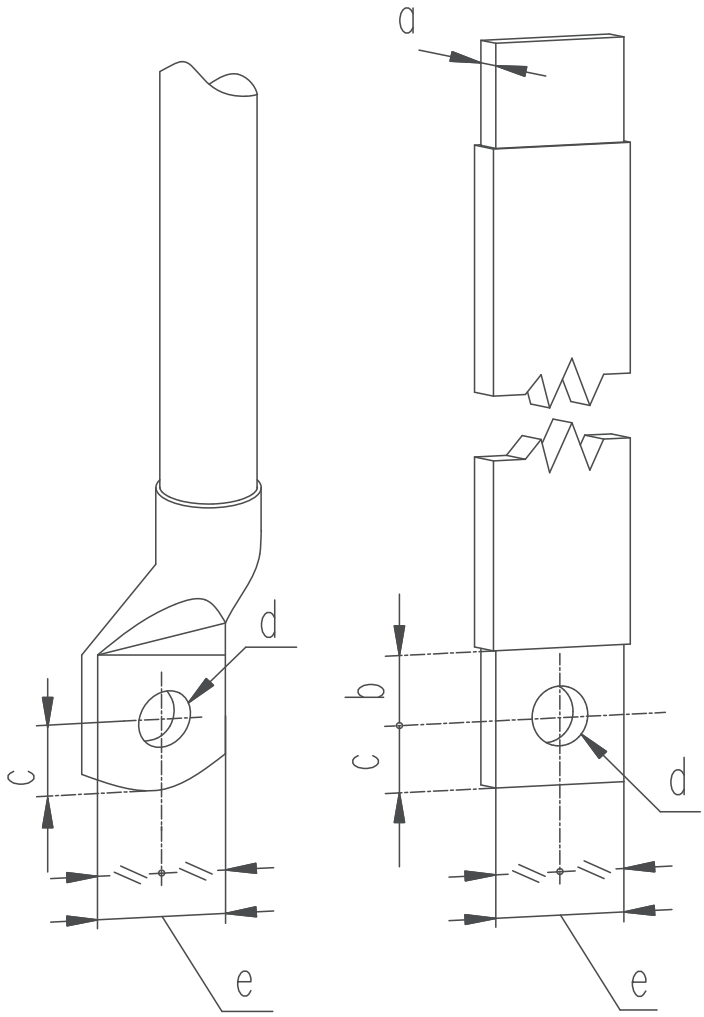
2


ST2.9x16(NM8N-250HV)
ST3.5x10(NM8N-400/630HV)
2x1.0N.m(NM8N-250HV)
2x1.5N.m(NM8N-400/630HV)

3



4



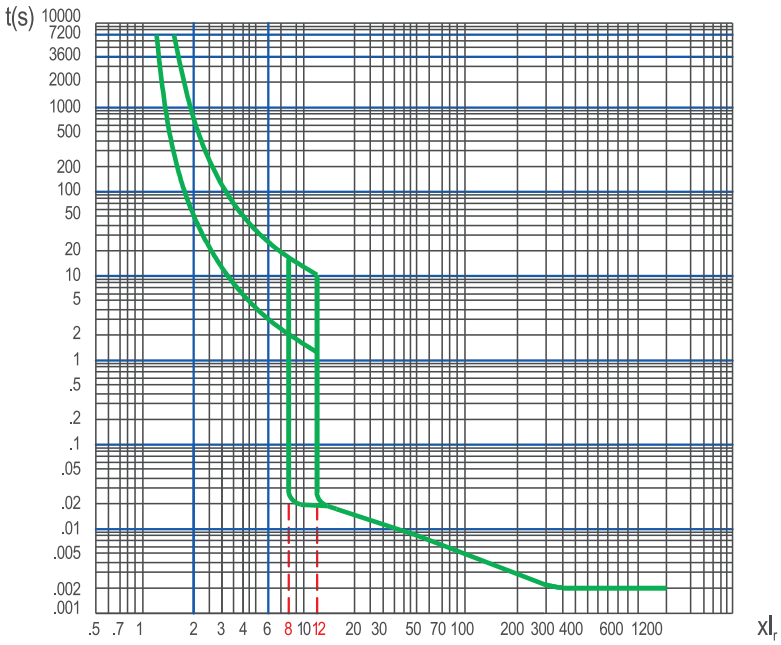
Size	a(mm)	b(mm)	c(mm)	d(mm)	e(mm)
NM8N-250HV	6	≥9.5	≤12	ø8.5	≤25
NM8N-400HV NM8N-630HV	8	≥15	≤12.5	ø10.5	≤30

NM8N-250HV,400HV and 630HV

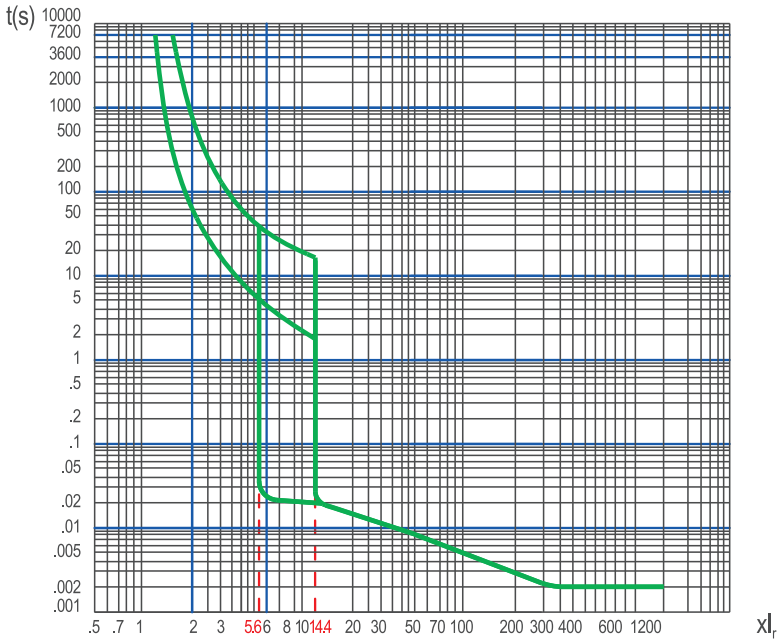
8 Tripping Characteristic Curves

8.1 Thermal Magnetic Tripping Characteristic Curves of Distribution Protection

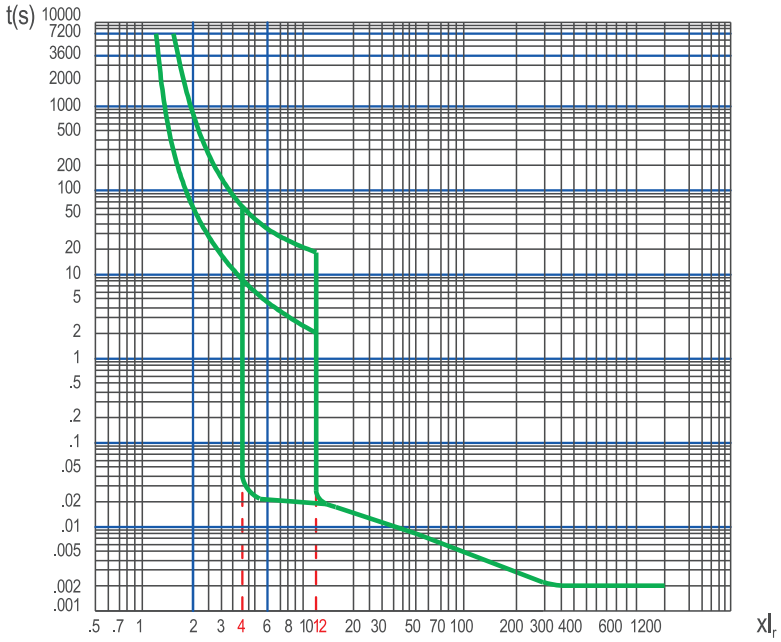
NM8N-250HV(63A,80A and 100A)



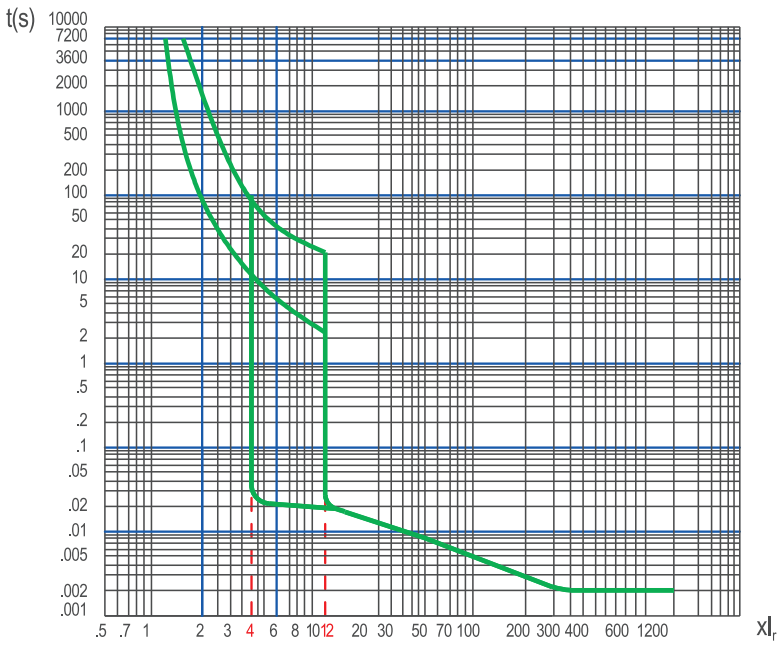
NM8N-250HV(125A and 160A)



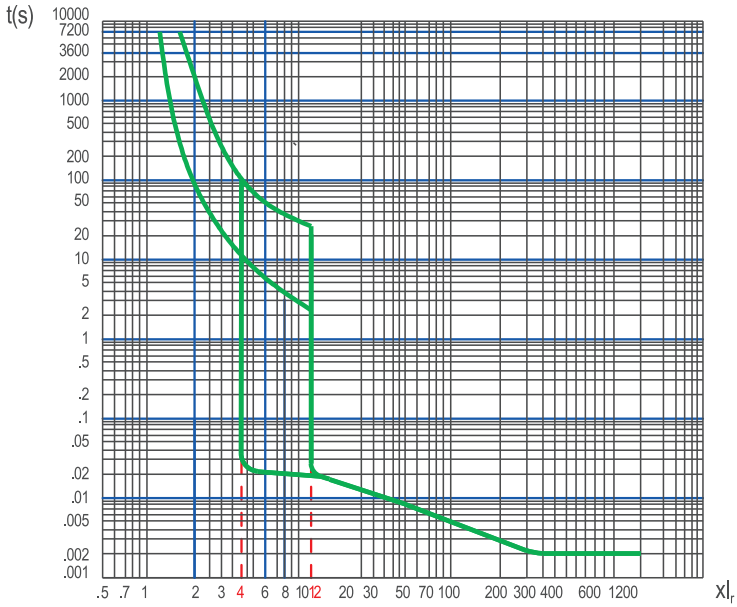
NM8N-250HV(180A,200A,225A and 250A)



NM8N-400HV(250A,315A,350A and 400A)

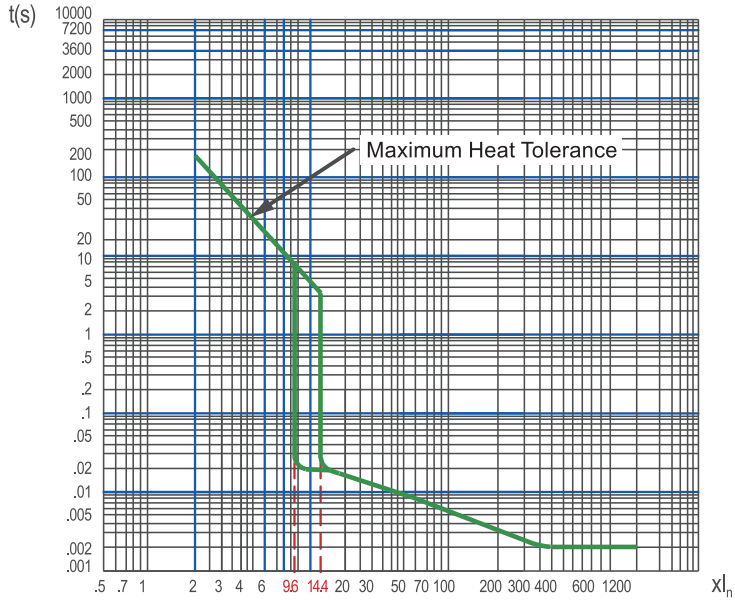


NM8N-630HV(400A,500A and 630A)

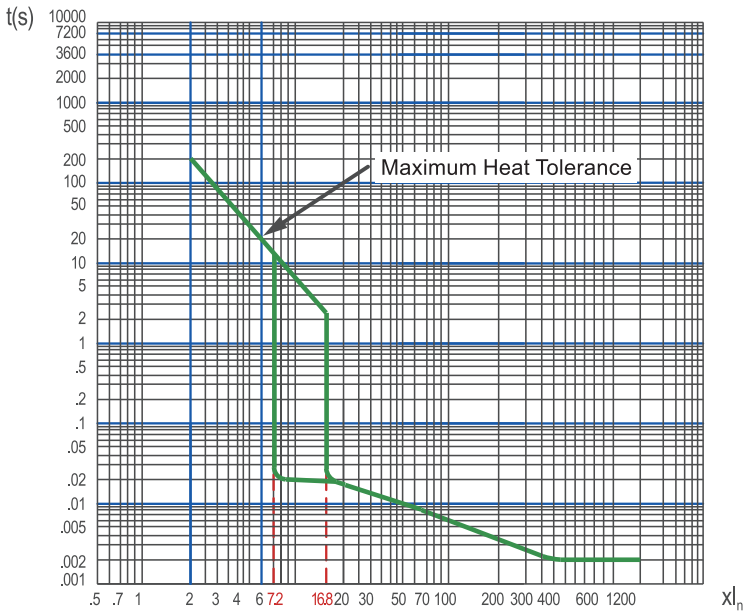


8.2 Electromagnetic Tripping Characteristic Curve of Motor Protection

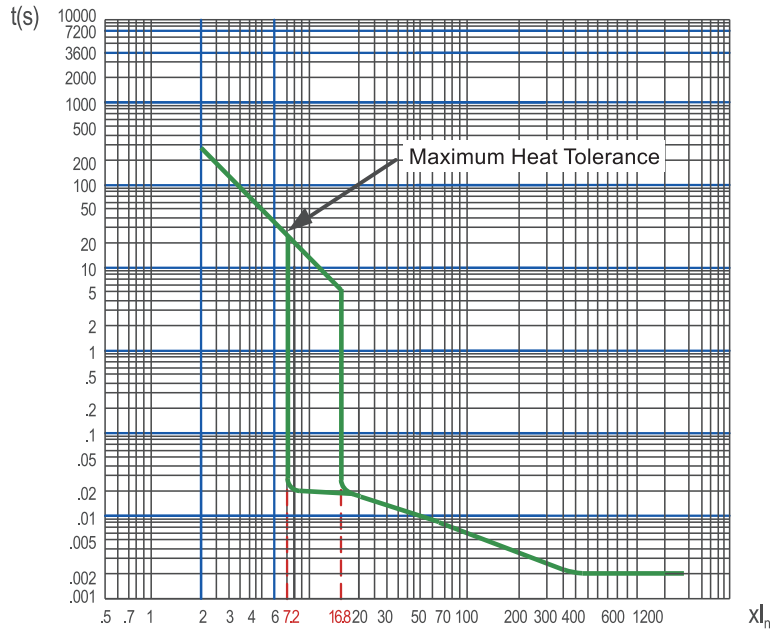
NM8N-250HV(63A,80A and 100A)



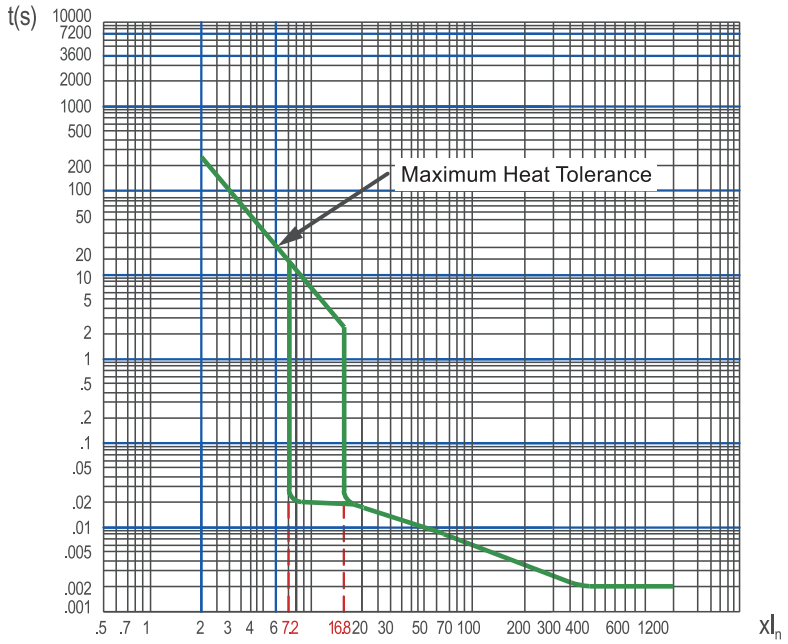
NM8N-250HV(125A,160A,180A,200A,225A and 250A)



NM8N-400HV(250A,315A,350A and 400A)



NM8N-630HV(400A,500A and 630A)



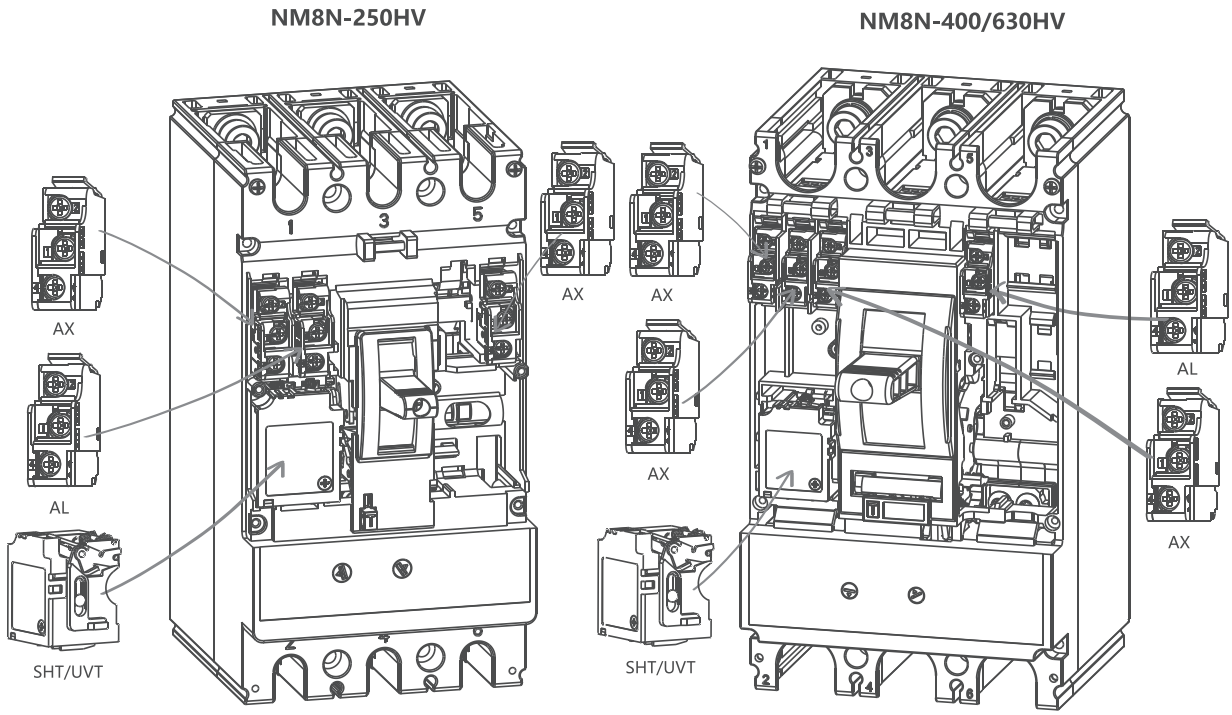
9 Table of Rated Working Current and Temperature Compensation Coefficient

Rated Current \ Air Temperature		-40℃	-35℃	-25℃	-15℃	-5℃	0℃	+10℃	+20℃	+30℃	+40℃	+50℃	+60℃	+70℃
NM8N-250HV	63A	88	86.5	83	80	77	75	72	69	66	63	58.5	53	46
	80A	112	110	106	102	98	96	92	88	84	80	74.5	67	56
	100A	140	137	132	127	122	120	115	110	105	100	93	84	80
	125A	175	172	165	159	153	150	144	137	131	125	118	106	96
	160A	224	220	212	204	196	192	184	176	168	160	152	136	120
	180A	252	247	238	229	220	216	207	198	189	180	171	157	144
	200A	280	275	265	255	245	240	230	220	210	200	190	175	166
	225A	315	309	300	288	276	270	259	247	236	225	213	196	180
	250A	350	343	332	319	306	300	287	275	262	250	237	218	207
NM8N-400HV	250A	350	343	332	319	306	300	287	275	262	250	237	225	212
	315A	441	433	418	402	386	378	362	346	331	315	300	286	271
	350A	490	481	465	447	429	420	402	385	367	350	332	295	276
	400A	560	550	530	510	490	480	460	440	420	400	380	360	320
NM8N-630HV	500A	700	687	662	637	612	600	575	550	525	500	450	406	360
	630A	882	865	834	802	770	756	725	693	661	630	567	511	454

10 Altitude Derating Coefficient Table

Altitude (m)		2000 m	3000 m	4000 m	5000 m
Rated current (In)		1×In	0.96×In	0.93×In	0.9×In
Rated voltage Ue (V)		1150	1030	950	850
Rated insulation voltage Ui (V)		1250	1120	1000	880
Dielectric properties (V)		2550	2300	2050	1800
Rated insulation impulse voltage Uimp (kV)	NM8N-250HV	8	8	8	8
	NM8N-400HV NM8N-630HV	12	10	8	8

11 Internal Accessory and Installation



AX	Auxiliary Contact
AL	Alarm Contact
SHT	Shunt Release
UVT	Under-voltage Release

AX	ON	AX12 — AX14 — AX11
	OFF	AX12 — AX11, AX14 —
AL	OFF & ON	AL92 — AL94 — AL91
	TRIP	AL92 — AL94 — AL91

12 Warranty Period

12.1 Warranty Period

Under the normal storage & transportation conditions and this product package or this product itself is intact, the Warranty Period of this product is 36 months from the date of production.

The following conditions are not covered by the Warranty:

1) Damage caused by improper use, storage and maintenance of User.
2) Damage caused by disassembly and maintenance by User-self or by organization or personnel not designated by the Company.
3) The product exceeds the Warranty Period.
4) Damage caused by force majeure.

12.2 Protect the environment

In order to protect the environment, when this product or its part is scrapped, please treat it properly as industrial waste; Or to the recycling station for classified disassembly, recycling and reuse according to relevant national regulations.

CHINT

QC PASS

NM8N High-voltage (HV) Series
Molded Case Circuit Breaker
IEC/EN 60947-2,GB/T 14048.2

PD1 Inspecror 30

Test date: Please see the packing

ZHEJIANG CHINT ELECTRICS CO., LTD.

CHINT ELECTRICS

NM8N High-voltage (HV) Series Molded Case Circuit Breaker User Instruction

Zhejiang Chint Electrics Co., Ltd.

Add: No.1, CHINT Road, CHINT Industrial Zone,North Baixiang, Yueqing, Zhejiang 325603,P.R.China

E-mail: global-sales@chint.com

Website: http://en.chint.com