



UNM4 MCCB
Molded Case Circuit Breaker

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Products Introduction	01
Marking & Configuration	02
General Selection Table (UNM4F)	03-04
General Selection Table (UNM4A)	05-06
General Selection Table (UNM4L)	07-08
Product Characteristics	09
Built-In Accessory	10-11
Built-Out Accessory	12
Characteristics Curve	13
Temperature Compensation Curve	14
Outline Dimensions	15-16



UNION ELECTRICS

UNM4 Series Molded Case Circuit Breaker



Standards

UNM4 series circuit breakers and auxiliaries comply with the following international standard:

IEC/EN 60947-1

Low-voltage switchgear and controlgear-Part 1:General rules

IEC/EN 60947-2

Low-voltage switchgear and controlgear-Part 2:Circuit-breakers

UNM4 MCCB(Standard Of Environment For MCCB Application)

- 1)Ambient Temperature: -5 degrees~+55 degrees, avarage no more than 40 degrees within 24 hours.
- 2)Relative Humidity:45~85%.
- 3)Altitude:The altitude of the installation does not exceed 2000m.
- 4)Atmosphere Conditions:Where excessive steam,oil steam,smoke,dust,salt and other corrosive materials do not exist.

Type Guide

UNM4 MCCB	□ Type	□ Rated Current		□ Breaking Capacity	□ Pole
		125	250		
	F(Fixed type)	16A	/	S	2-pole
	A(Adjustable type)	20A	100A	H	3-pole
	L(Leakage type)	25A	125A		4-pole
		32A	160A		
		40A	180A		
		50A	200A		
		63A	225A		
		80A	250A		
		100A	/		
		125A	/		

Remark:

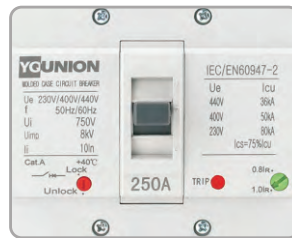
UNM4 (125A) has 2-pole/3-pole/4-pole;

UNM4 (250A)has 3-pole/4-pole.

Marking & Configuration



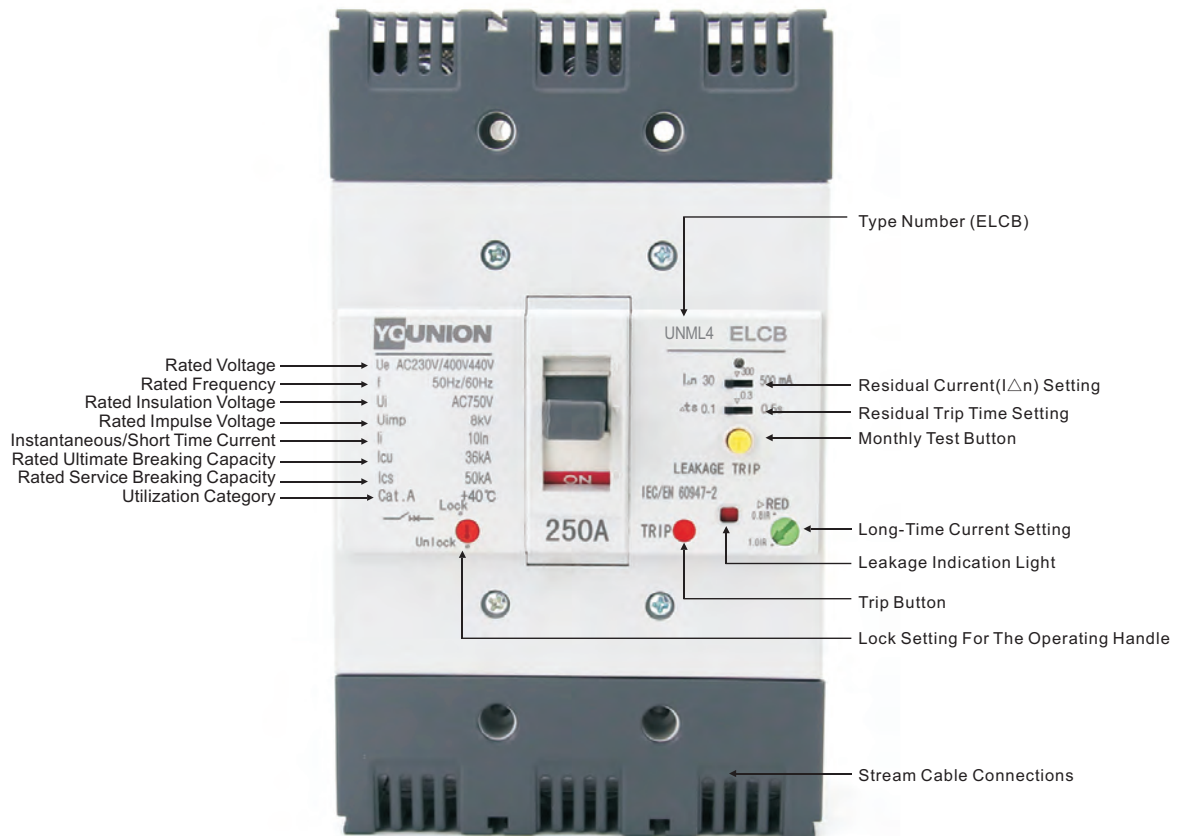
UNM4F



UNM4A



UNM4L



General Selection Table (UNM4F-125 Fixed Type)



UNM4F-125			
Type		S-Type	H-Type
Pole			2-pole
			3-pole
			4-pole
Rated current, I _n	A	16、20、25、32、40、50、63、80、100、125、160	
Adjustable parts	Long-time current setting(0.8I _n ~1.0I _n)	-	-
	Lockup device for operating handle	-	-
Rated voltage, U _e	AC(V)	230、400、440	
Rated insulation voltage, U _i	V	750V	
Rated impulse voltage, U _{imp}	kV	8	
Standard		IEC/EN 60947-2	
Rated frequency	Hz	50 / 60	
Rated short-circuit breaking capacity(I _{cu})kA			
AC	230V	50kA	65kA
	400V	25kA	35kA
	440V	22kA	25kA
I _{cs} =%*I _{cu}		50~100	50~100
Mechanical life(circle)		20,000 / 8,500(As defined by IEC/EN 60947-2)	
Electrical life(circle)		4,000 / 1,500(As defined by IEC/EN 60947-2)	
Dimensions H*W*D (mm)	2P	140 * 50 * 60	
	3P	140 * 75 * 60	
	4P	140 * 100 * 60	

General Selection Table (UNM4F-250 Fixed Type)



UNM4F-250			
Type		S-Type	H-Type
Pole		-	
		3-pole	
		4-pole	
Rated current, I _n	A	100、125、160、180、200、225、250	
Adjustable parts	Long-time current setting(0.8I _n ~1.0I _n)	-	-
	Lockup device for operating handle	-	-
Rated voltage, U _e	AC(V)	230、400、440	
Rated insulation voltage, U _i	V	750V	
Rated impulse voltage, U _{imp}	kV	8	
Standard		IEC/EN 60947-2	
Rated frequency	Hz	50 / 60	
Rated short-circuit breaking capacity(I _{cu})kA			
AC	230V	65kA	80kA
	400V	35kA	50kA
	440V	25kA	35kA
I _{cs} =%*I _{cu}		50~100	50~100
Mechanical life(circle)		20,000 / 7,000(As defined by IEC/EN 60947-2)	
Electrical life(circle)		4,000 / 1,000(As defined by IEC/EN 60947-2)	
Dimensions H*W*D (mm)	2P	-	
	3P	175 * 105 * 60	
	4P	175 * 140 * 60	

General Selection Table (UNM4A-125 Adjustable Type)



UNM4A-125			
Type		S-Type	H-Type
Pole			2-pole
			3-pole
			4-pole
Rated current, I _n	A	10-16A、16-20A、20-25A、25-32A、32-40A、40-50A、50-63A、63-80A、80-100A、100-125A、125-160A	
Adjustable parts	Long-time current setting(0.8I _n ~1.0I _n)	√	√
	Lockup device for operating handle	-	-
Rated voltage, U _e	AC(V)	230、400、440	
Rated insulation voltage, U _i	V	750V	
Rated impulse voltage, U _{imp}	kV	8	
Standard		IEC/EN 60947-2	
Rated frequency	Hz	50 / 60	
Rated short-circuit breaking capacity(I _{cu})kA			
AC	230V	50kA	65kA
	400V	25kA	35kA
	440V	22kA	25kA
I _{cs} =%*I _{cu}		50~100	50~100
Mechanical life(circle)		20,000 / 8,500(As defined by IEC/EN 60947-2)	
Electrical life(circle)		4,000 / 1,500(As defined by IEC/EN 60947-2)	
Dimensions H*W*D (mm)	2P	140 * 50 * 60	
	3P	140 * 75 * 60	
	4P	140 * 100 * 60	

General Selection Table (UNM4A-250 Adjustable Type)



UNM4A-250			
Type		S-Type	H-Type
Pole		-	
		3-pole	
		4-pole	
Rated current, I _n	A	100-125A、125-160A、160-180A、 180-200A、200-250A	
Adjustable parts	Long-time current setting(0.8I _n ~1.0I _n)	√	√
	Lockup device for operating handle	√	√
Rated voltage, U _e	AC(V)	230、400、440	
Rated insulation voltage, U _i	V	750V	
Rated impulse voltage, U _{imp}	kV	8	
Standard		IEC/EN 60947-2	
Rated frequency	Hz	50 / 60	
Rated short-circuit breaking capacity(I _{cu})kA			
AC	230V	65kA	80kA
	400V	35kA	50kA
	440V	25kA	35kA
I _{cs} =%*I _{cu}		50~100	50~100
Mechanical life(circle)		20,000 / 7,000(As defined by IEC/EN 60947-2)	
Electrical life(circle)		4,000 / 1,000(As defined by IEC/EN 60947-2)	
Dimensions H*W*D (mm)	2P	-	
	3P	175 * 105 * 60	
	4P	175 * 140 * 60	

General Selection Table (UNM4L-125 Adjustable-Leakage Type)



UNM4L-125						
Type	S-Type			H-Type		
Pole	2-pole	3-pole	4-pole	2-pole	3-pole	4-pole
Protective function	Overload & Short-circuit & Ground fault					
Rated current, I _n	A 10-16A、16-20A、20-25A、25-32A、32-40A、40-50A、50-63A、63-80A、80-100A、100-125A、125-160A					
Rated residual current	Operating, I _{Δn} (mA)		30、50、100、200、500			
	Non-Operating, I _{Δno} (mA)		15、25、50、100、250			
Adjustable parts	Long-time current setting(0.8I _n ~1.0I _n)		✓		✓	
	Lockup device for operating handle		-	✓	✓	✓
	Residual current(I _{Δn}) setting		30mA / 300mA / 500mA			
	Residual trip time setting		0.1s / 0.3s / 0.5s			
Rated voltage, U _e	AC(V)		230、400、440			
Rated insulation voltage, U _i	V		750V			
Rated impulse voltage, U _{imp}	kV		8			
Residual current off-time at I _{Δn}	Sec		0.1 / 0.3 / 0.5			
Standard	IEC / EN 60947-2					
Rated frequency	Hz		50 / 60			
Rated short-circuit breaking capacity(I _{cu})kA						
AC	230V		50kA		65kA	
	400V		25kA		35kA	
	440V		22kA		25kA	
I _{cs} =%*I _{cu}		50~100		50~100		
Mechanical life(circle)		20000 / 8500(As defined by IEC/EN 60947-2)				
Electrical life(circle)		4000 / 1500(As defined by IEC/EN 60947-2)				
Dimensions H*W*D(mm)	2P		140 * 50 * 60			
	3P		140 * 75 * 60			
	4P		140 * 100 * 60			

General Selection Table (UNM4L-250 Adjustable-Leakage Type)

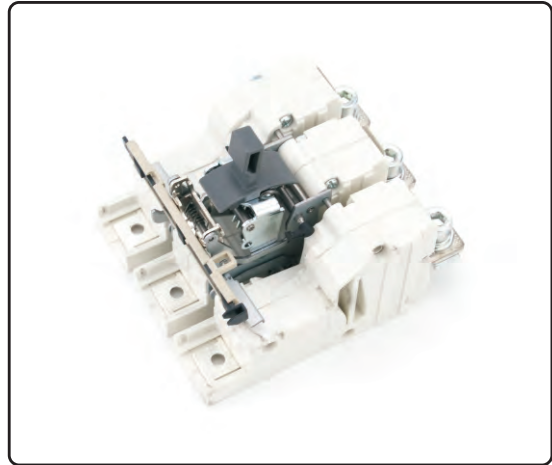


		UNM4L-250			
Type		S-Type		H-Type	
Pole		3-pole	4-pole	3-pole	4-pole
Protective function		Overload & Short-circuit & Ground fault			
Rated current, I _n	A	100-125A、125-160A、160-180A、180-200A、200-250A			
Rated residual current	Operating, I _{Δn} (mA)	30、50、100、200、500			
	Non-Operating, I _{Δno} (mA)	15、25、50、100、250			
Adjustable parts	Long-time current setting(0.8I _n ~1.0I _n)	✓		✓	
	Lockup device for operating handle	✓	✓	✓	✓
	Residual current(I _{Δn}) setting	30mA / 300mA / 500mA			
	Residual trip time setting	0.1s / 0.3s / 0.5s			
Rated voltage, U _e	AC(V)	230、400、440			
Rated insulation voltage, U _i	V	750V			
Rated impulse voltage, U _{imp}	kV	8			
Residual current off-time at I _{Δn}	Sec	0.1 / 0.3 / 0.5			
Standard		IEC /EN 60947-2			
Rated frequency	Hz	50 / 60			
Rated short-circuit breaking capacity(I _{cu})kA					
AC	230V	65kA		80kA	
	400V	36kA		50kA	
	440V	25kA		36kA	
I _{cs} =%*I _{cu}		50~100		50~100	
Mechanical life(circle)		20000 / 7000(As defined by IEC/EN 60947-2)			
Electrical life(circle)		4000 / 1000(As defined by IEC/EN 60947-2)			
Dimensions H*W*D(mm)	2P	-			
	3P	175 * 105 * 60			
	4P	175 * 140 * 60			

Product Characteristics

Security

The module housing is made of high-strength heat-resistant material. Achieve electrical isolation between phases and operating mechanisms. To ensure the safety of users and eliminate phase-to-phase current short circuit.



Reliability

The closed structure design further protects the rotating and moving conductors from the external environments and makes the electrical contacts more reliable.

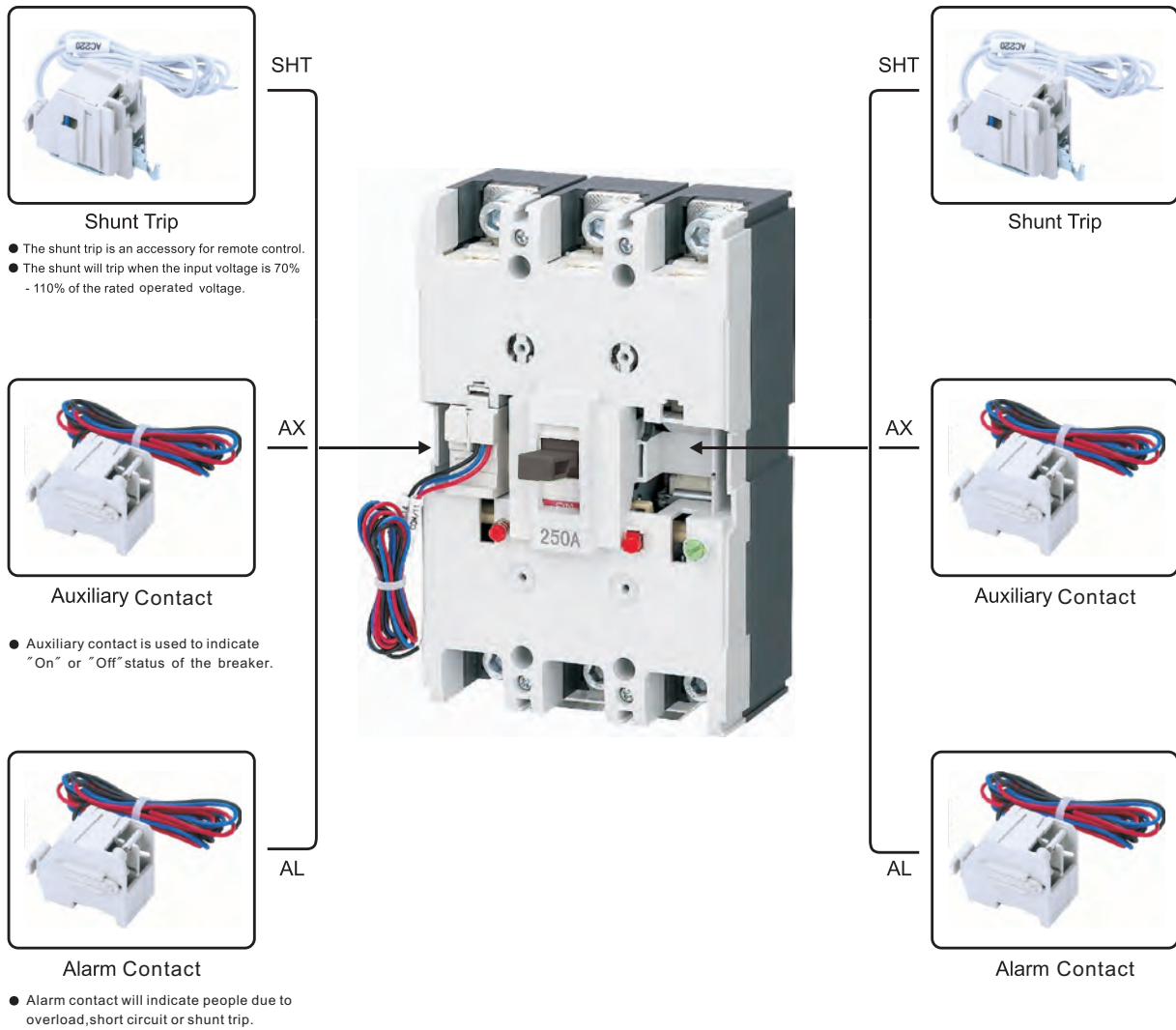


High Performance

Gas-producing material is adopted in the module to produce gas flow when the gas-producing short-circuit current is generated. Obviously improve the effect of air blowing, to achieve a better current limiting effect, the product break index increased significantly.

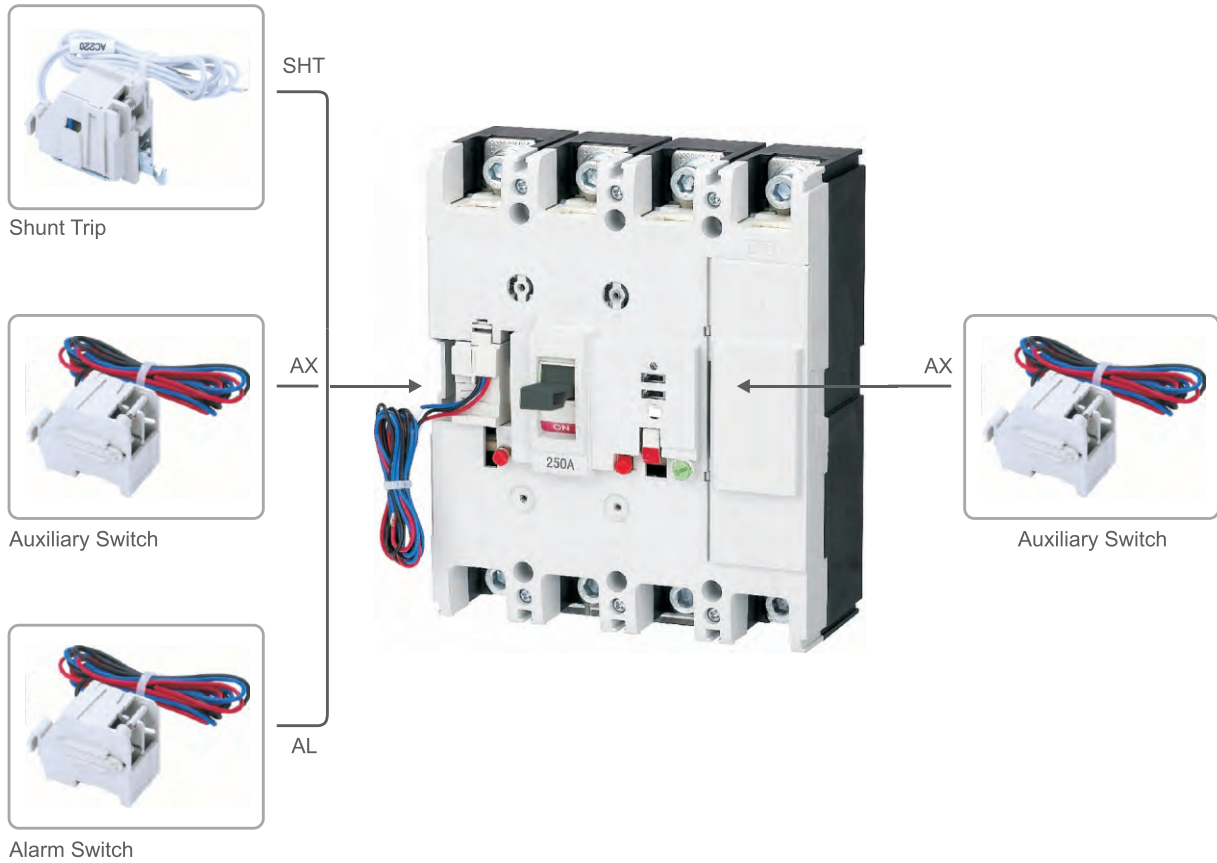


Built-in Accessory(UNM4A/UNM4F)



Type	Pole	Left hole position					Right hole position				
		AX	AL	SHT	AX+AX	AX+AL	AX	AL	SHT	AX+AX	AX+AL
UNM4F(A) -125	2P	-	-	-	-	-	√	√	√	√	√
	3P	√	√	√	√	√	√	√	√	√	√
	4P	√	√	√	√	√	√	√	√	√	√
UNM4F(A) -250	3P	√	√	√	√	√	√	√	√	√	√
	4P	√	√	√	√	√	√	√	√	√	√

Built-in Accessory(UNM4L)



Type	Pole	Left hole position					Right hole position					
		AX	AL	SHT	AX+AX	AX+AL	AX	AL	SHT	AX+AX	AX+AL	
UNM4L-125	2P	-	-	-	-	-	-	-	-	-	-	-
	3P	√	√	√	√	√	-	-	-	-	-	-
	4P	√	√	√	√	√	√	-	-	-	-	-
UNM4L-250	3P	√	√	√	√	√	-	-	-	-	-	-
	4P	√	√	√	√	√	√	-	-	-	-	-

Built-out Accessory



Built-Out Accessory



Inter-phase Insulation Barrier

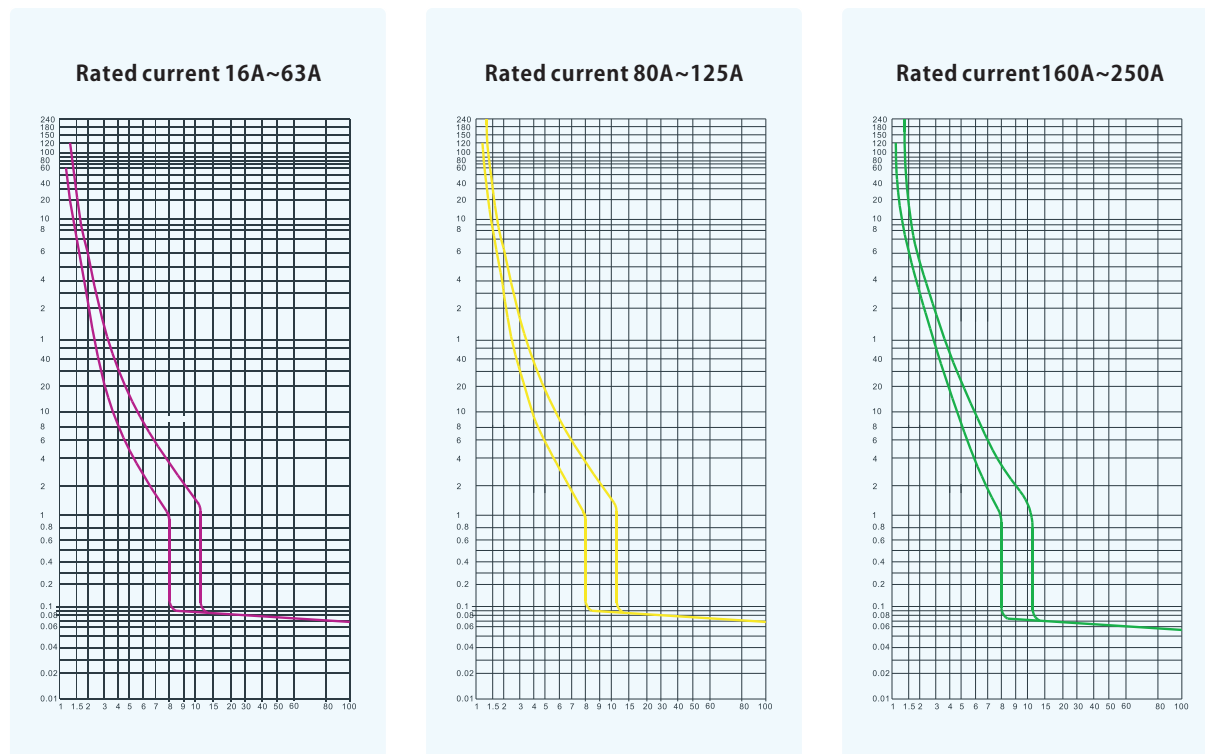
- Inter-phase insulation barrier is a kind of safety accessory, which is used for the insulation between the phases. It can guarantee the best insulation of the wiring terminal.
- They are compatible with both the short terminal covers. And it is ok to mount the inter-phase insulation barrier in both UNM1A&UNM1Lseries and every phase(2P,3P and 4P).



Short Terminal Cover

- Short terminal cover is insulation accessory ,which is used to prevent the direct contact between the terminal in circuit breaker and other live parts to ensure the safety of the users.
- All the terminal cover is designed with holes which can be knocked off to connect the cables of various wires and the copper platens.
- They are compatible with both the interphase insulation barrier and phase & ampere frames.

Characteristics Curve



• Remark: When $I_n \leq 32$,
 $I_i = 400A (\pm 20\%)$.

• Remark: When $I_n > 32$,
 $I_i = 10 * I_n (\pm 20\%)$.

• Remark: When $I_n > 32$,
 $I_i = 10 * I_n (\pm 20\%)$.

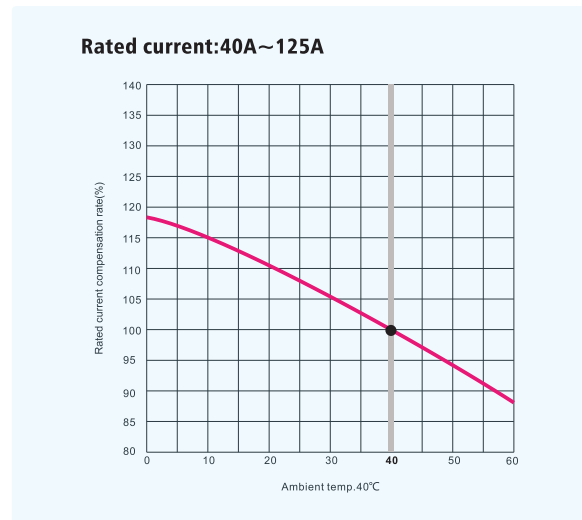
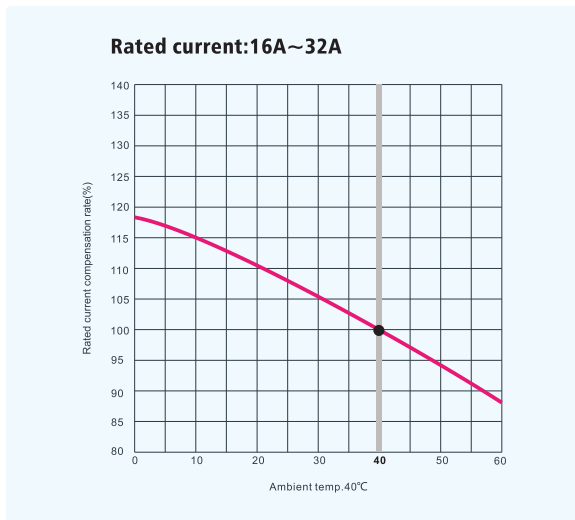
Characteristics Curve Table

Test No.	Load current	Rated current	Initial state	Time limit to trip	Estimated result
1.	1.05 I_n	$I_n \leq 63A$	cold state	$t \leq 1h$	Non tripping
		$I_n > 63A$		$t \leq 2h$	
2.	1.30 I_n	$I_n \leq 63A$	continuing the test	$t < 1h$	Trip
		$I_n > 63A$		$t < 2h$	

Short circuit

3.	400A*80%	$\leq 32A$	cold state	$t \leq 0.2s$	Non tripping
	400A*120%			$t < 0.2s$	Trip
4.	10 I_n *80%	$> 32A$	cold state	$t \leq 0.2s$	Non tripping
	10 I_n *120%			$t < 0.2s$	Trip

Temperature Compensation Curve

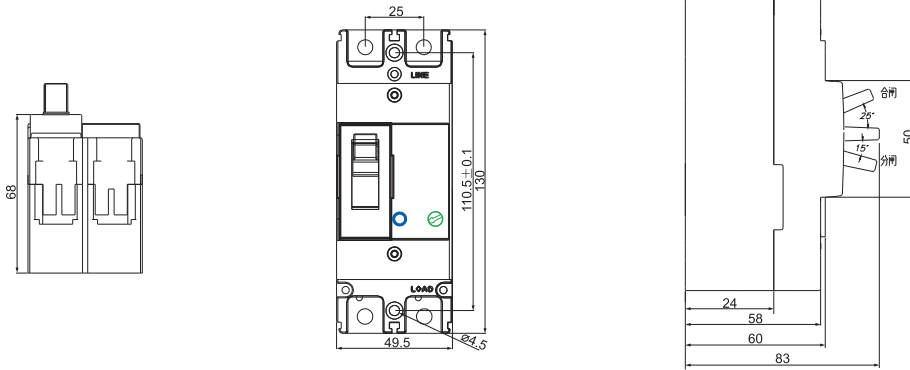


Temperature Compensation Table(IEC/EN 60947-2)

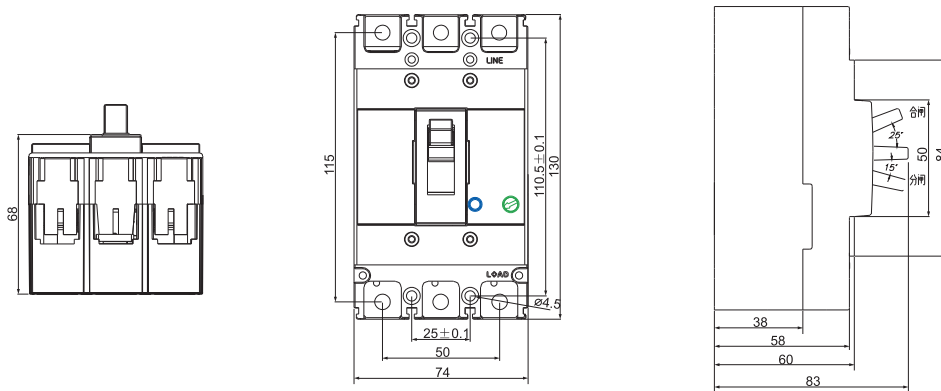
Type	Current range	Compensation Coefficient													
		-5°C	0°C	5°C	10°C	15°C	20°C	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
UNM4A-125	16-32A	1.18	1.17	1.16	1.14	1.12	1.09	1.07	1.05	1.03	1	0.97	0.95	0.92	0.87
	40-125A	1.16	1.16	1.15	1.14	1.12	1.10	1.08	1.06	1.03	1	0.97	0.94	0.87	0.82
UNM4A-250	100-250A	1.14	1.13	1.13	1.12	1.10	1.08	1.07	1.05	1.03	1	0.97	0.93	0.86	0.76

Outline Dimensions

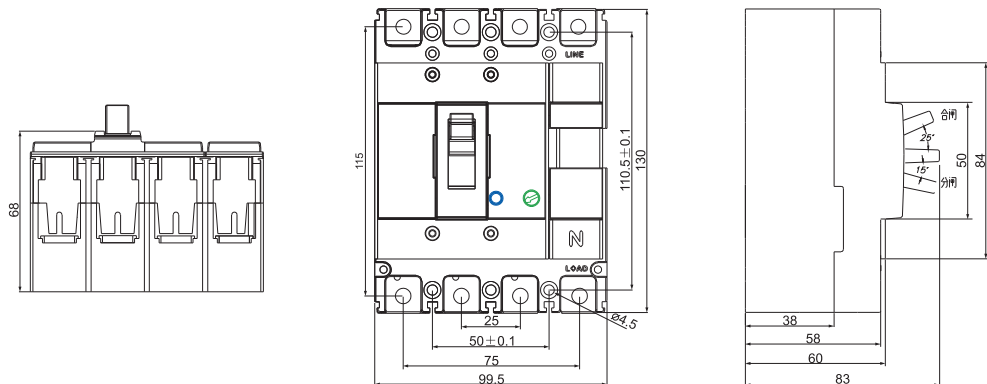
UNM4-125(2P)



UNM4-125(3P)

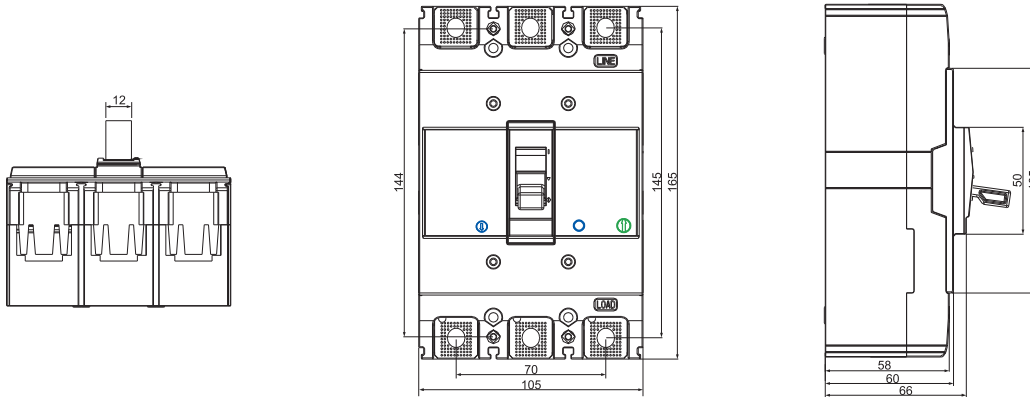


UNM4-125(4P)

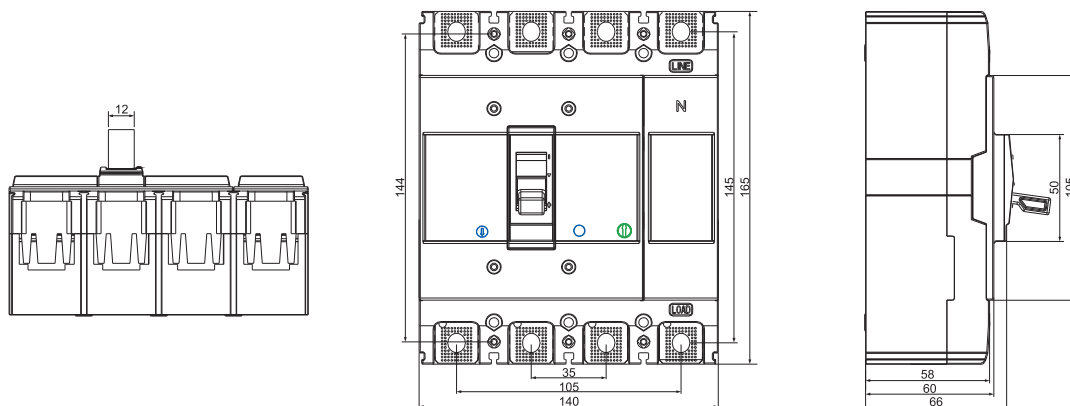


Outline Dimensions

UNM4-250(3P)



UNM4-250(4P)



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