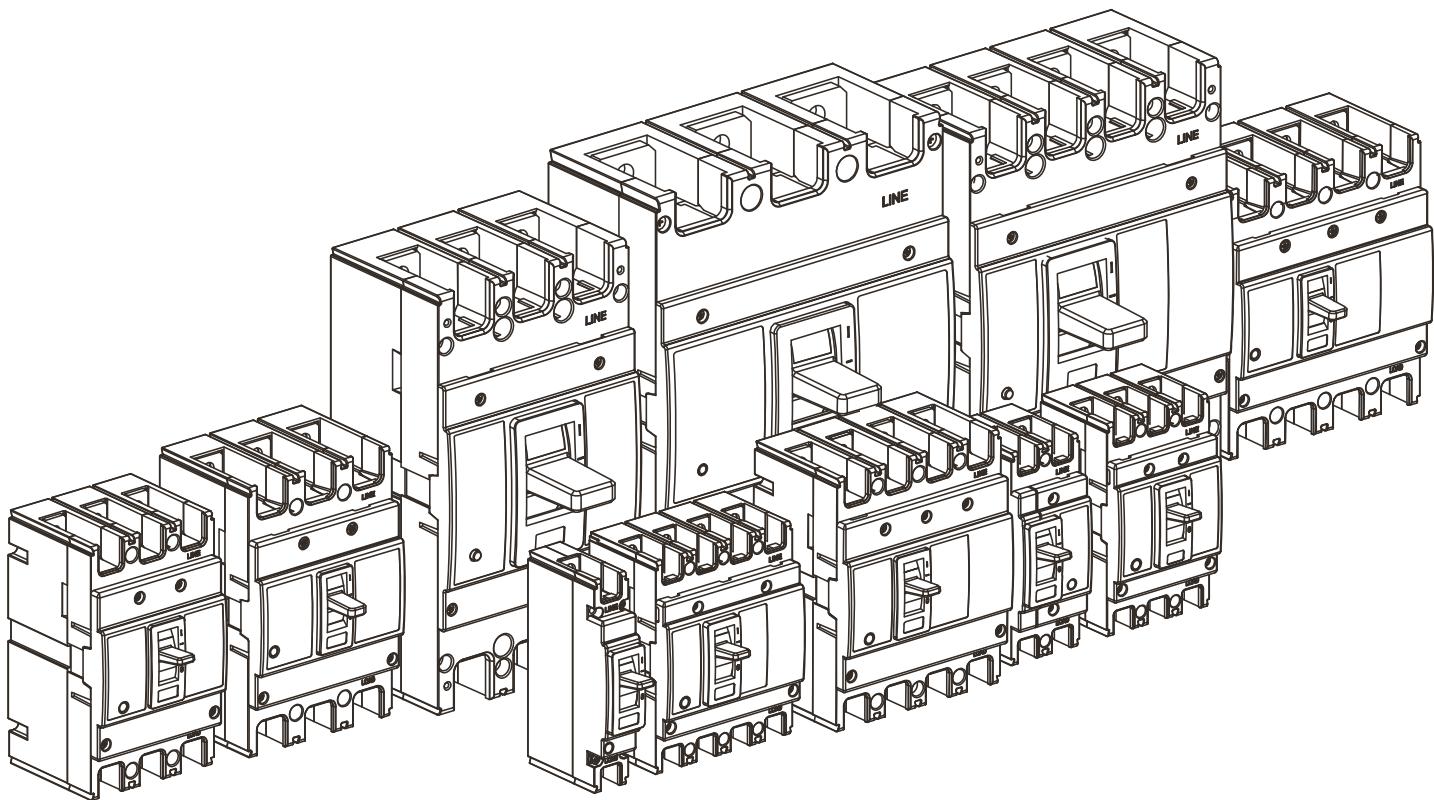


AKM

HASZNÁLATI ÚTMUTATÓ | USER MANUAL | BEDIENUNGSANLEITUNG
INSTRUKCJA UŻYTKOWANIA | INSTRUÇIUNI DE UTILIZARE |
KORISNIČKI PRIRUČNIK | NAVODILO ZA UPORABO | MANUALE
UTENTE | NÁVOD NA POUŽITIE | NÁVOD NA POUŽITÍ | KORISNIKI
PRIRUČNIK | MANUEL D'UTILISATION | MANUAL DE USUARIO

TRACON
.....ELECTRIC®

Moulded Case Circuit Breaker Product usage manual



Only skilled or instructed persons may
carry out the following operations



Electric Current!
Danger to life!

1., Application

Moulded case circuit breaker is suitable for the circuit with AC 50/60HZ, rated voltage can be 690V and below, the rated current up to 630A. Generally, if the rated current under 630A, the circuit breaker can be used as motor protection. Normally the breakers can be used as circuit of infrequency conversion and motor infrequently starting.

2., The working environment

Temperature: -5~+40 centigrade, Average temperature cannot exceed +35 centigrade in 24 hours.

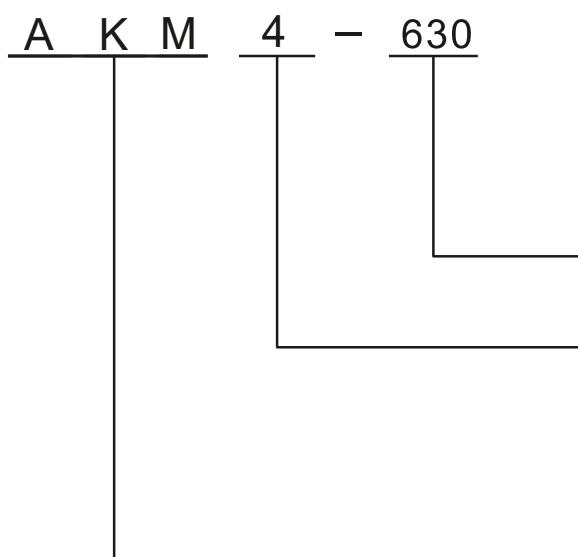
Relative humidity: the highest temperature is 40 centigrade, cannot be more than 50%, Relatively low temperature allows relatively high humidity, such as: 20 centigrade, humidity is 80%

The altitude must not exceed 2000 meters.

Should use in a place where without explosion danger medium in the air, no corrosive action on metals and damage insulation and without conductive dust.

Also cannot use in place where will be attacked by snow and rain, The pollution level is level 3.

3., Circuit breaker model



Rated current

Frame class

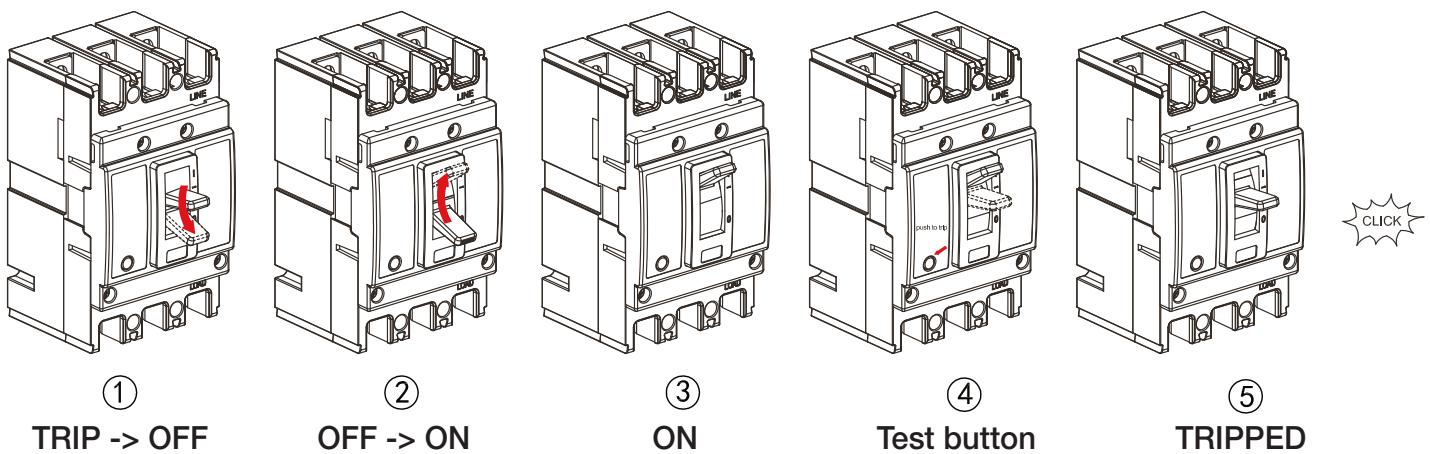
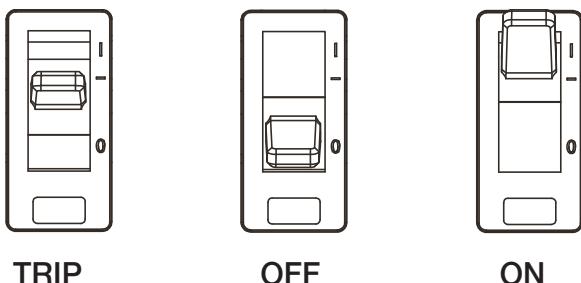
Fixed type

Thermomagnetic adjustable

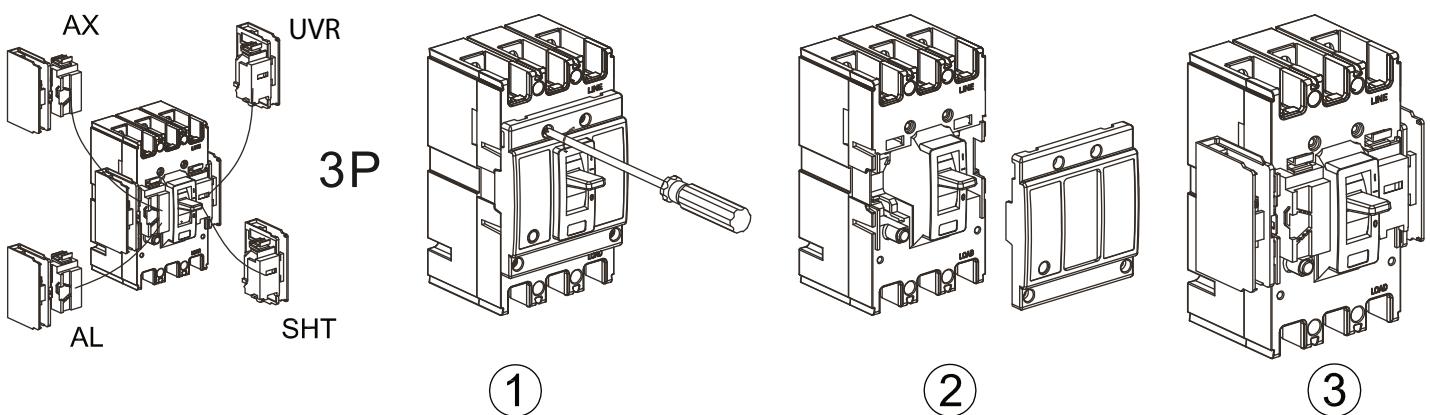
Moulded Case Circuit Breaker

Company code

A., Operation test



B., Internal accessories and installation

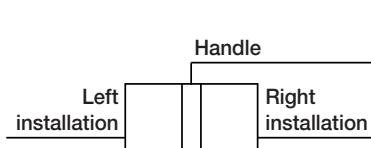


AX	Auxiliary Contact
AL	Alarm Contact
SHT	Shunt Release
UVR	Undervoltage Release

Accessories Table

Installation details of thermomagnetic internal accessories

	Accessory	Pole	Model		
			AKM1	AKM2	AKM3 / AKM4
300	Nothing		—	—	—
308	Alarm switch		□ □	□ □	□ □
310	Shunt release		□ ●	□ ●	□ ●
318	Shunt release + Alarm switch		□ ●	□ ●	□ ●
320	Single auxiliary switch		□ □	□ □	□ □
327	Double auxiliary switch		■ □	■ □	■ □
328	Single auxiliary switch + Alarm switch		■ □	■ □	■ □
329	Double auxiliary switch + Alarm switch		—	□ ■	□ ■
330	Undervoltage release		□ ○	□ ○	□ ○
338	Undervoltage release + Alarm switch		□ ○	□ ○	□ ○
340	Shunt release + Single auxiliaries switch		□ ●	□ ●	□ ●
341	Shunt release + Double auxiliaries switch		■ ●	■ ●	■ ●
348	Shunt release + Auxiliary alarm switch		■ ●	■ ●	■ ●
350	Shunt release + Undervoltage release		● ○	● ○	● ○
360	Two sets of single auxiliary switch		—	□ □	□ □
361	Single auxiliary switch + Double auxiliary switch		—	■ □	■ □
362	Two sets of double auxiliary switch		—	■ ■	■ ■
368	Single auxiliary switch + Auxiliary alarm switch		—	■ □	■ □
369	Double auxiliary switch + Auxiliary alarm switch		—	■ ■	■ ■
370	Undervoltage release + Single auxiliary switch		□ ○	□ ○	□ ○
371	Undervoltage release + Double auxiliary switch		■ ○	■ ○	■ ○
378	Undervoltage release + Auxiliary alarm switch		■ ○	■ ○	■ ○



□ Alarm switch

○ Undervoltage release

□ Single auxiliary switch (1NO 1NC)

● Shunt release (Mechanical)

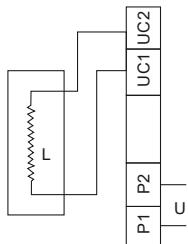
■ Double auxiliary switch (2NO 2NC)

Note:

Code 350, AKM2 requires customized left shunt

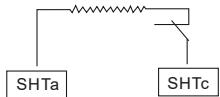
Internal Accessories

Internal accessories of AKM1, AKM2, AKM3, and AKM4 series: undervoltage release, shunt release and auxiliary alarm release, their main technical parameters and wiring diagram are as follows:



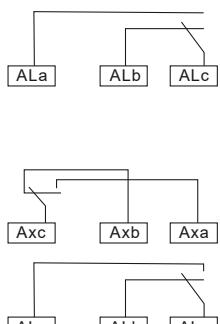
Undervoltage release

Rated voltage of power supply	Main features
AC230 AC400	<p>A., Undervoltage release should act when voltage drops to within 70% and 35% of the rated voltage.</p> <p>B., The undervoltage release should not be able to close to prevent the circuit breaker from closing when voltage is lower than 35% of the rated voltage.</p> <p>C., The undervoltage release should ensure to be closed and ensure reliable closing of the circuit breaker when voltage is equal to or greater than 85% of the rated voltage.</p>



Shunt release

Rated voltage of power supply	Main features
DC24, AC230, AC400	Shunt release can work reliably when the rated voltage value is at 70% and 110%.



Auxiliary alarm contact

Rated voltage of power supply	Main features
Auxiliary switch	Provides distinctive signals for the circuit breaker at „ON” and „OFF” positions.
Alarm switch	Provides distinctive signals for the circuit breaker at „normal work” and „trip” positions.
Auxiliary alarm switch	Provides distinctive signals for the circuit breaker at „close”, „open” and „trip” positions.

C., Internal accessories and installation

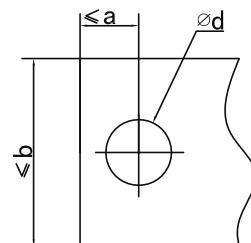
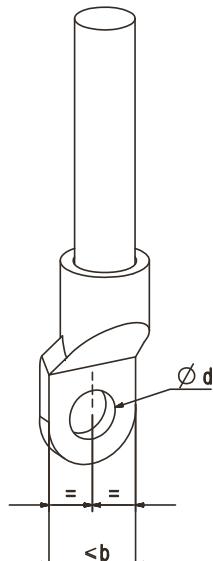
AKM1
AKM2

Attention:

- (1) If an undervoltage release is used, then it must be energized to circuit breaker can be switched on.
- (2) Undervoltage release cannot be installed with shunt release at the same time.
- (3) Shunt, undervoltage release needs to install from the right side, auxiliaries and alarming contact need to install from the left side.

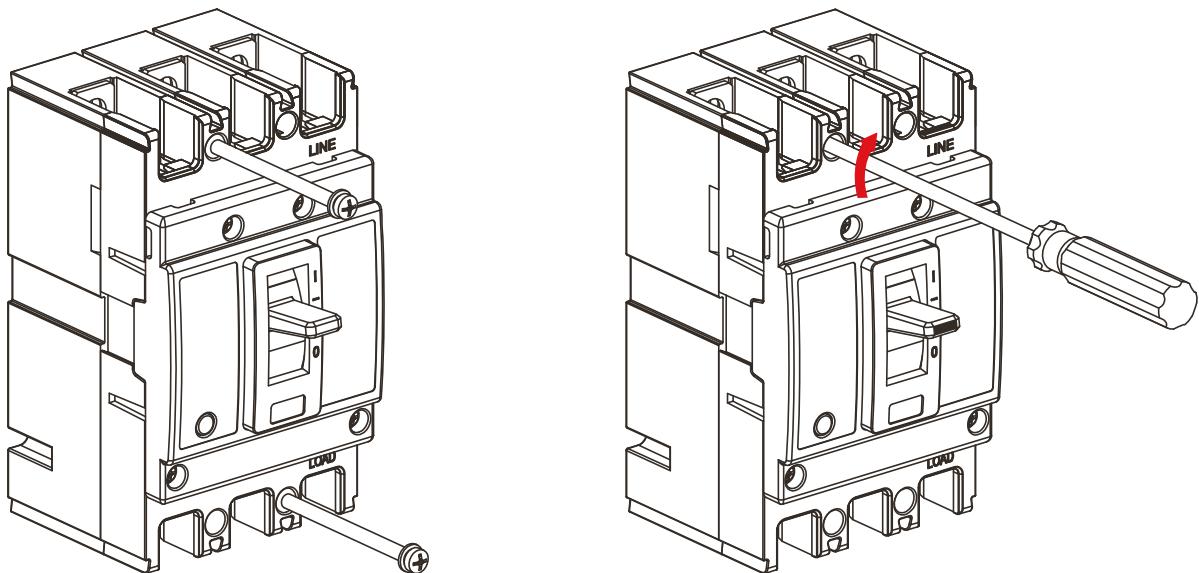
AKM3
AKM4

- (1) If an undervoltage release is used, then it must be energized to circuit breaker can be switched on.
- 2) Alarming contact need to install from the left side; auxiliaries shunt, under voltage device can be installed both left and right.

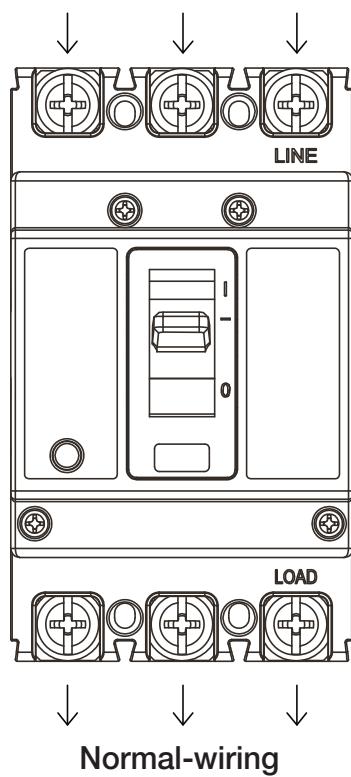


	Type	Width of Wiring Terminal (mm)	Bore of Wiring Terminal (mm)
1	AKM1	17	Ø 9
2	AKM2	22	Ø 9
3	AKM3	28	Ø 11
4	AKM4	28	Ø 11

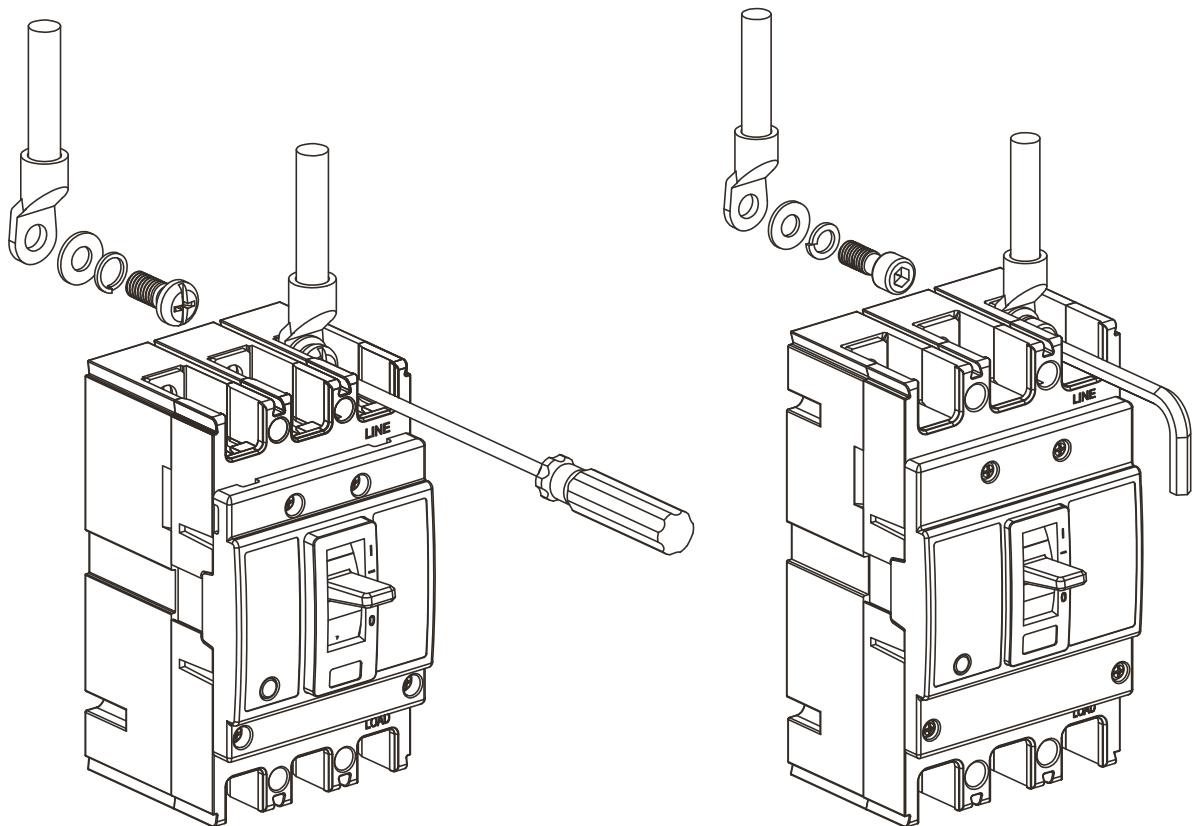
D., Installation



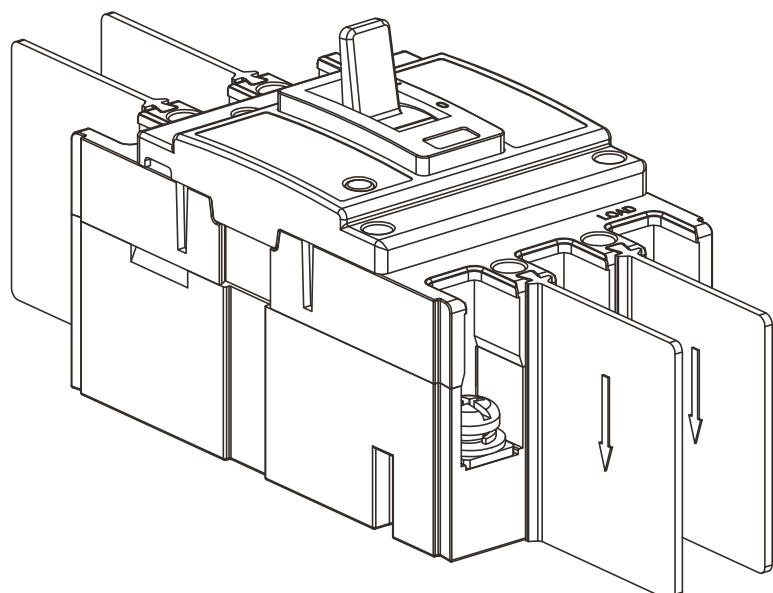
E., Wiring



F., Wire connection

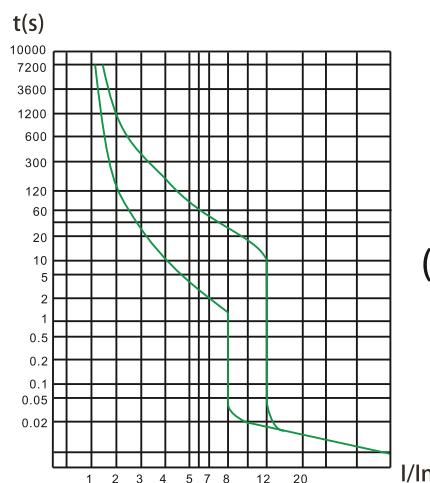


G., Arc shield mounting



CHARACTERISTICS CURVES

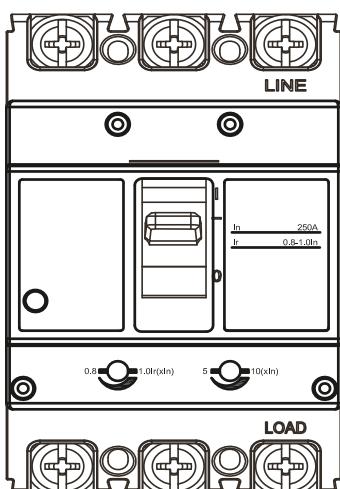
AKM1, AKM2, AKM3, AKM4						
	Thermal Tripping			Magnetic Tripping		
Standard IEC60947-2	No tripping current	Tripping current	Time	Holding current	Trip current	Time Limits
10-63 A	1.05 × In		≥1h	8 × In		≥0.2 s
		1.30 × In	<1h		12 × In	<0.2 s
80-630 A	1.05 × In		≥2h	8 × In		≥0.2 s
		1.30 × In	<2h		12 × In	<0.2 s



(8-12In)

AKM series mechanically adjustable circuit breaker technical description

No	In (A)	Description	Requirement
1	160-630	Overload long delay time release setting current	0.8-1.0 In Adjustable
2		Short circuit instantaneous release setting current	5 In-10 In Adjustable
3		Short circuit protection	while 0.8*(5 In/10 In), In 0.2 s not release
4			while 1.2*(5 In /10 In), In 0.2 s release



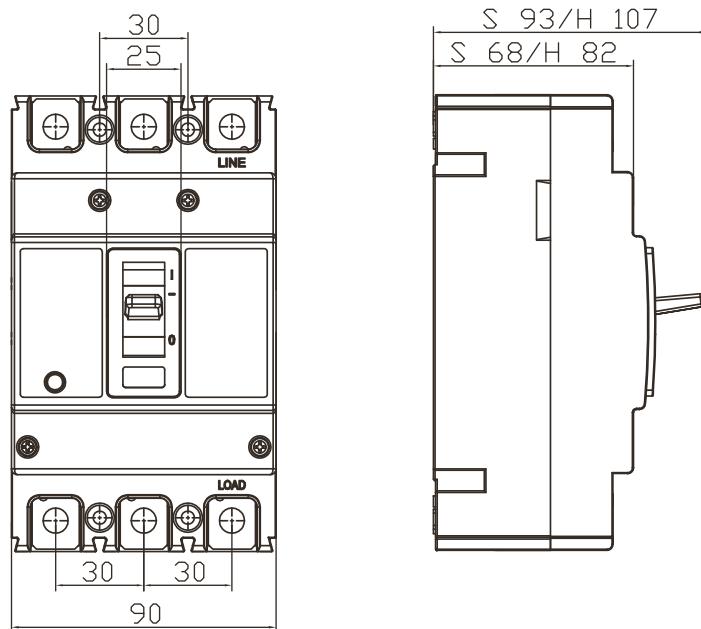
Thermal
adjustable



Magnetical
adjustable

AKM1

Dimensions (mm)

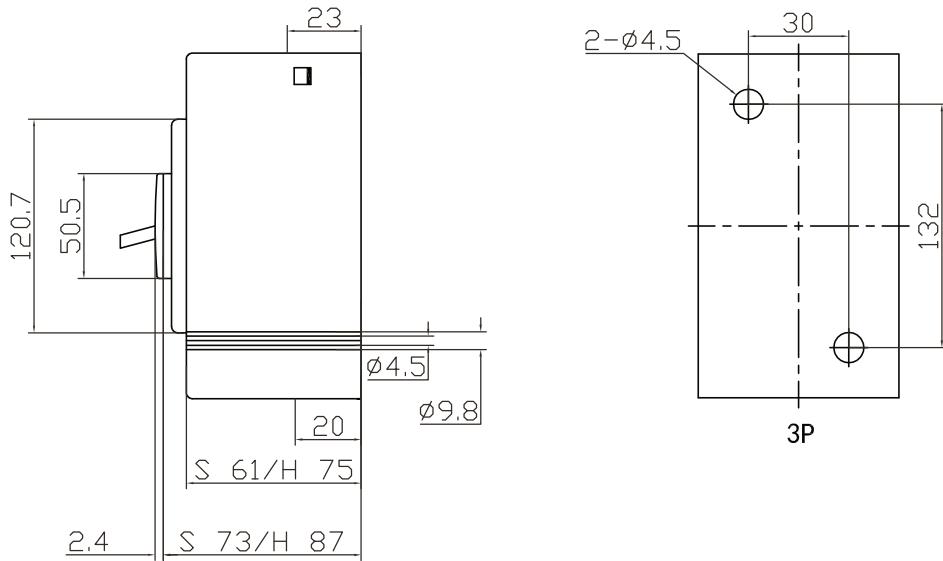
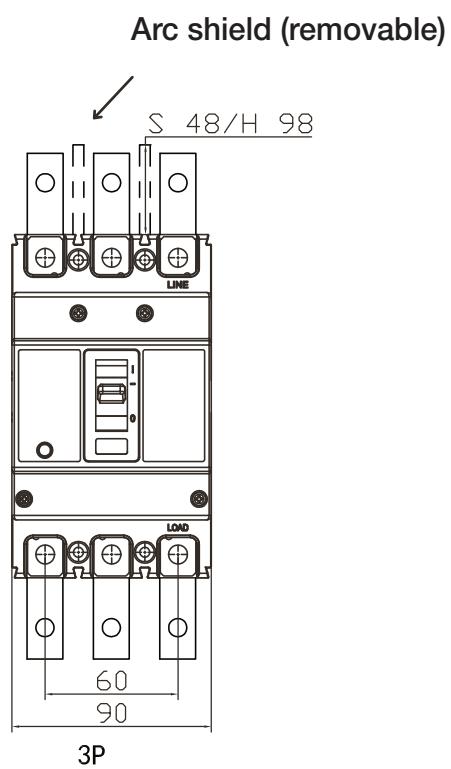


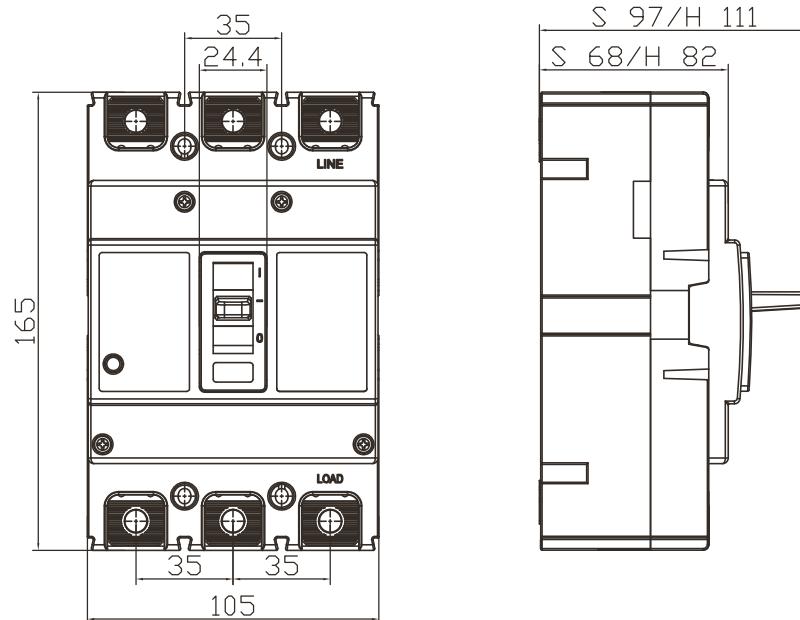
Accessories

Name	Size	Quantity	Diagram
Mounting screw	M4 X 40 M4 nut bolt	3P	
		2	
Arc shield		4	

Necessary Tools

Hexagon wrench	Screwdriver
mm 	mm

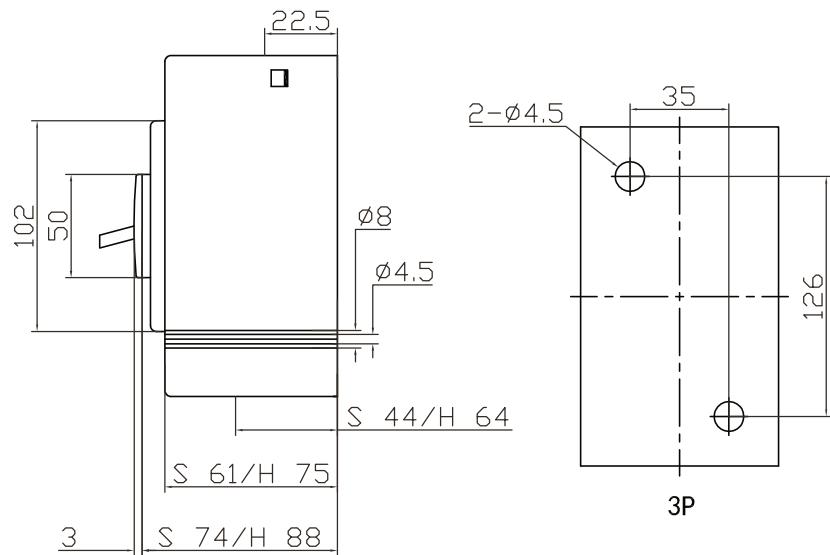
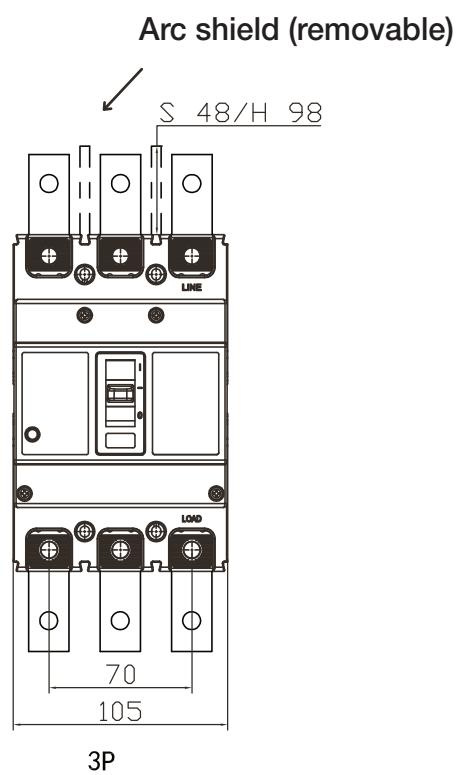
Installation dimension (mm)**Dimension of front-board wiring (mm)**

Dimensions (mm)**Accessories**

Name	Size	Quantity	Diagram
Mounting screw Arc shield	S M4 X 55 H M4 X 80 M4 nut bolt	3P	
		2	
Arc shield		4	

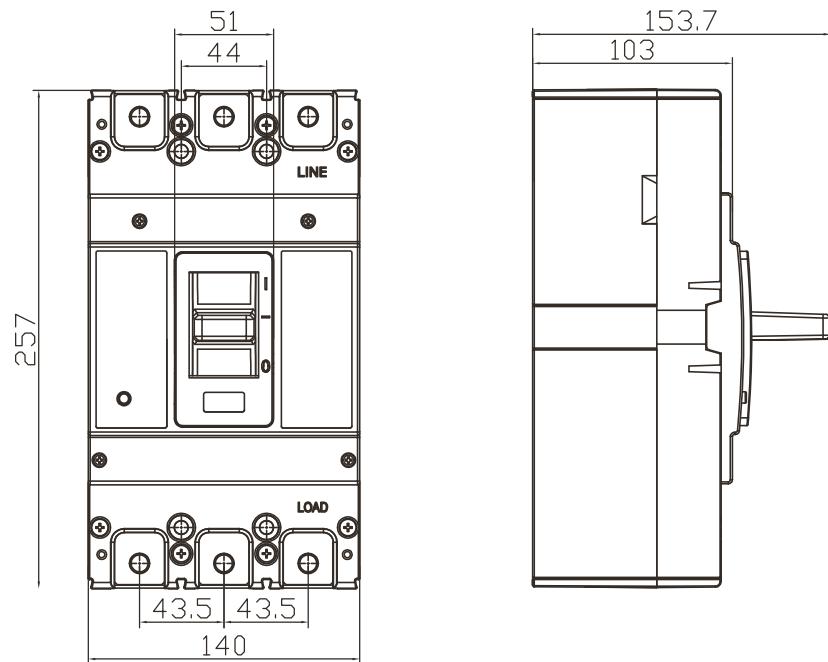
Necessary Tools

Hexagon wrench	Screwdriver
mm 	mm

Installation dimension (mm)**Dimension of front-board wiring (mm)**

AKM3
AKM4

Dimensions (mm)



Accessories

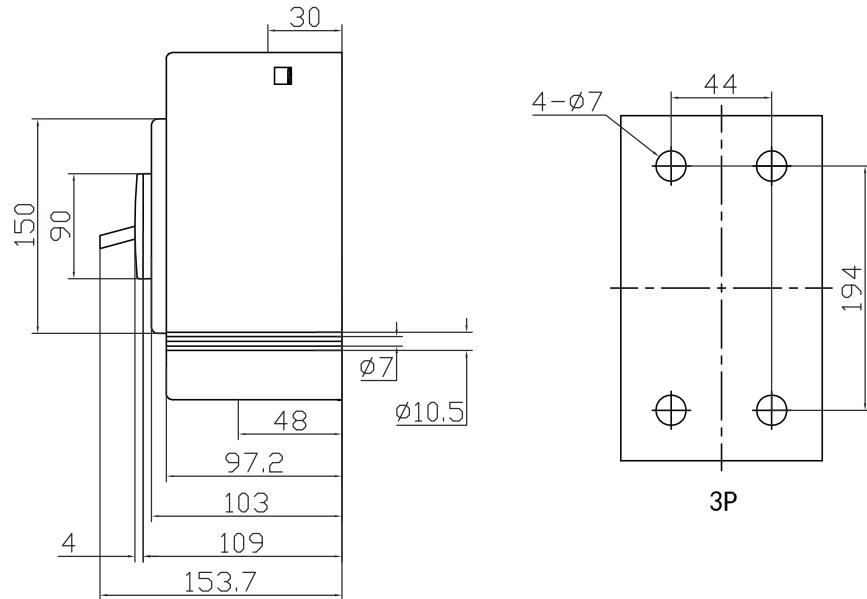
Name	Size	Quantity	Diagram
Mounting screw	M6 X 75 M4 nut bolt	3P	
		4	
Arc shield		4	

Necessary tools

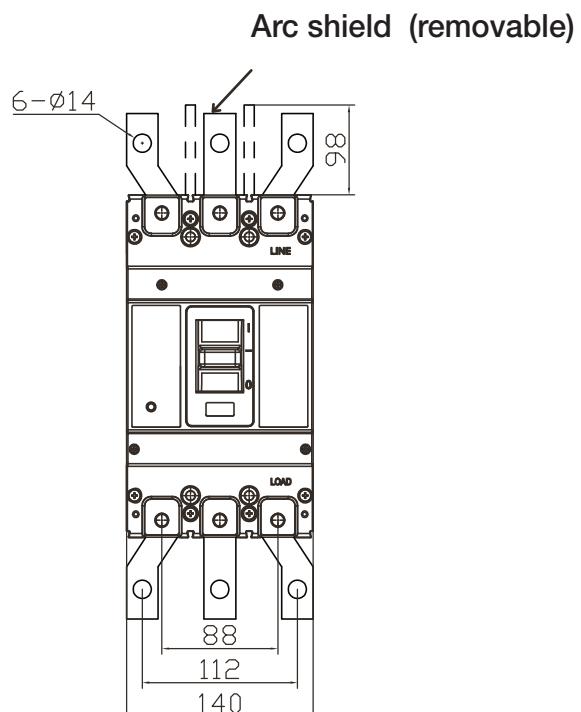
Hexagon wrench	Screw driver
mm 	mm

AKM3
AKM4

Installation Dimension (mm)



Dimension of front - board wiring (mm)



3P

Installation

1. Check whether the nameplate of the circuit breaker meets the requirements before installation. The cross section of the copper wire must match the rated rating of the circuit breaker current.
2. All screws must be tightened during installation.
3. The cover of circuit breaker can not be opened, it's parameters has been set and qualified in the factory, please do not adjust it!

Moulded Case Circuit Breaker Standard Tripping Characteristics Test

Rated current and standard connecting wire.

Number	Rated current	Standard connecting wire (mm ²)	Rated current	Standard connecting wire (mm ²)
1	0-8A	1.0	9-12A	1.5
2	13-15A	2.5	16-20A	2.5
3	21-25A	4.0	26-32A	6.0
4	33-50A	10.0	51-65A	16.0
5	66-85A	25.0	86-100A	35.0
6	101-115A	35.0	116-130A	50.0
7	131-150A	50.0	151-175A	70.0
8	176-200A	95.0	201-225A	95.0
9	226-250A	120.0	251-275A	150.0
10	276-300A	185.0	301-350A	185.0
11	351-400A	240.0	401-500A	2*150mm ²
12	501-630A	2*185mm ²	631-800A	2*240mm ²
13	801-1000A	2*300mm ²	1001-1250	2*400mm ²

Use and maintenance

- Read the instruction carefully before installation and use!
- Must be used under normal working conditions!
- Before installation, make sure that the type meets the requirements or not!
- After all the wires are connected, check and then turn on the power switch!
- Circuit breakers must be properly installed and must not be abnormal mechanical stress!
- Improper use, dropping, improper installation, external weather or natural disasters are not warranty cases!
- Before commissioning, the circuit breaker handle must be moved up and down several times. The structure must operate flexibly and reliably.
- In case of a general fault in the operating circuit, the circuit breaker trips and the handle is in the middle position.
- If users want to close breaker after release, firstly find cause and remove the fault, pull the handle down, in „OFF” position, then pull the handle to the „ON” position.
- The outer surface of the circuit breaker must always be cleaned of dust in order to maintain good insulation.



*Ez a dokumentum előzetes bejelentést nélkül megváltozhat! Naprakész információk a honlapon!
This document could be modified without notice. Updated Information on Website.*

*Änderungen am Dokument ohne Ankündigung möglich. Aktuelle Informationen finden Sie auf unserer Webseite.
Zastrzegamy możliwość zmiany niniejszego dokumentu bez uprzedzenia! Bieżące informacje można znaleźć na stronie internetowej!
Acest document poate fi modificat fără o notificare prealabilă! Informațiile actualizate pe pagina noastră de internet!
Ovaj dokument se može promeniti bez prethodne najave! Aktuelne informacije možete naći na web-sajtu!
Ta dokument se lahko spremeni brez predhodnega obvestila! Posodobljene informacije najdete na spletni strani!
Questo documento può cambiare senza preavviso. Informazioni aggiornate si trovano sul sito internet.
Tento dokument sa môže zmeniť bez predchádzajúceho oznamenia! Aktuálne informácie na web-stránke!
Tento dokument může být změněn bez předchozího oznámení! Aktuální informace na web-stranici!
Ovaj dokument se može promijeniti bez prethodne najave. Važeće informacije su na web stranici.
Ce document pourrait être modifié sans préavis. Mise à jour de l'information sur le site Web
Este documento puede ser modificado sin previo aviso. Información actualizada en la página web*

