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Catalog 2023

Molded-Case Circuit Breakers

Collecting energy management
for safety protection





iALM5-250



iALM5-630

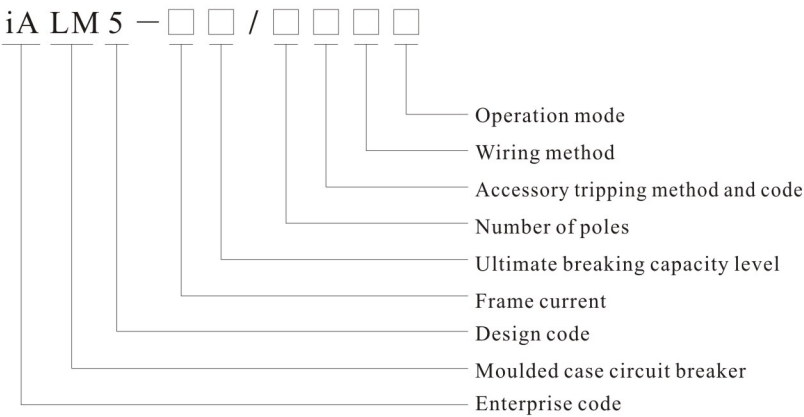


iALM5-1600

Feature

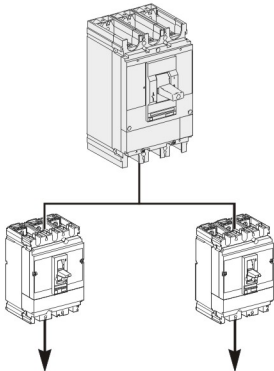
- The iALM5 series moulded case circuit breaker (hereinafter referred to as the circuit breaker) is one of the new circuit breakers researched and developed by our company. This product has the features of compact structure, small size, no arc and strong short-circuit breaking capacity.
- There are two options for users to choose from in the release control part of the iALM5-250 moulded case circuit breaker, one is thermal magnetic release, and the other is release.
- The iALM5-250 thermomagnetic moulded case circuit breaker uses a combination of heating element and bimetallic component, which has a simple structure and reduces product costs.
- The iALM5-630-1250 moulded case circuit breaker adopts a release, greatly reducing the power consumption and temperature rise of the circuit breaker itself.
- Built-in microprocessor has high sensitivity and wide range of trip value setting. Due to the absence of heating element and magnetic tripping mechanism inside, the product is less affected by environmental temperature and is not constrained by installation direction.
- The iALM5 moulded case circuit breaker has flexible overload current setting, adjustable accuracy and adjustable short-circuit current (short delay) multiple.

Classification of circuit breaker



Applicable scope

- The iALM5 intelligent circuit breaker is suitable for the following working environments.
 1. The altitude of the installation site shall not exceed 2000m.
 2. The temperature of the surrounding medium shall not be higher than 40℃ and not lower than -25℃.
 3. In a medium without explosion risk, and in a place where the medium with gas and conductive dust is not sufficient to corrode metal and damage insulation.
 4. In places free from rain and snow.
 5. Pollution level 3.
 6. Installation category III.
- The installation method, position and angle of the circuit breaker are optional.



Low voltage distribution system protection

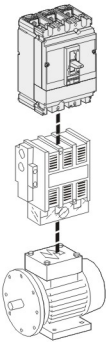
Protection:

- Transformer power supply and distribution system.
- Generator power supply and distribution system.
- IT and TN system long cable protection.

Installation:

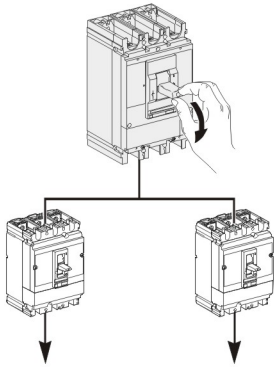
- In the distribution panel.
- DIN rail.

The entire series of iALM5 circuit breaker provide reliable contact indication and isolation function, and comply with IEC6094-1.2 standard.



Motor circuit protection

When combined with motor starter, the iALM5 circuit breaker provides short circuit protection for the cable and starter. When equipped with electronic release, the iALM5 circuit breaker can provide overload protection for cable, starter and motor. The unique current limiting capability of the iALM5 circuit breaker ensures Class 2 coordination with the starter and complies with the IEC60947-4-1 standard.



Control and isolation

The iALM5 switch is used for control and isolation of power distribution circuit. All additional functions are applicable to the iALM5 switch, including:

- Ground fault protection
- Manual/electric operating mechanism
- Auxiliary switch
- Shunt/undervoltage coil

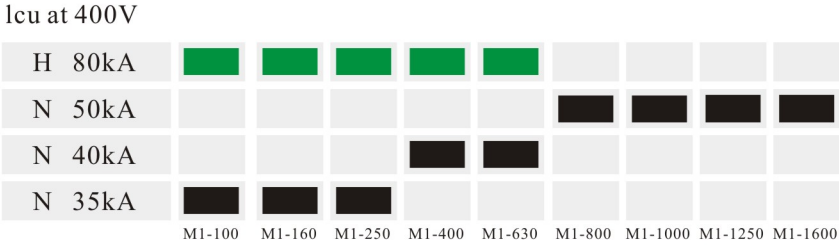
Ground fault protection

Additional ground fault protection avoids personal and property damage caused by insulation fault during installation. Adding leakage module to the circuit breaker can achieve ground fault protection.

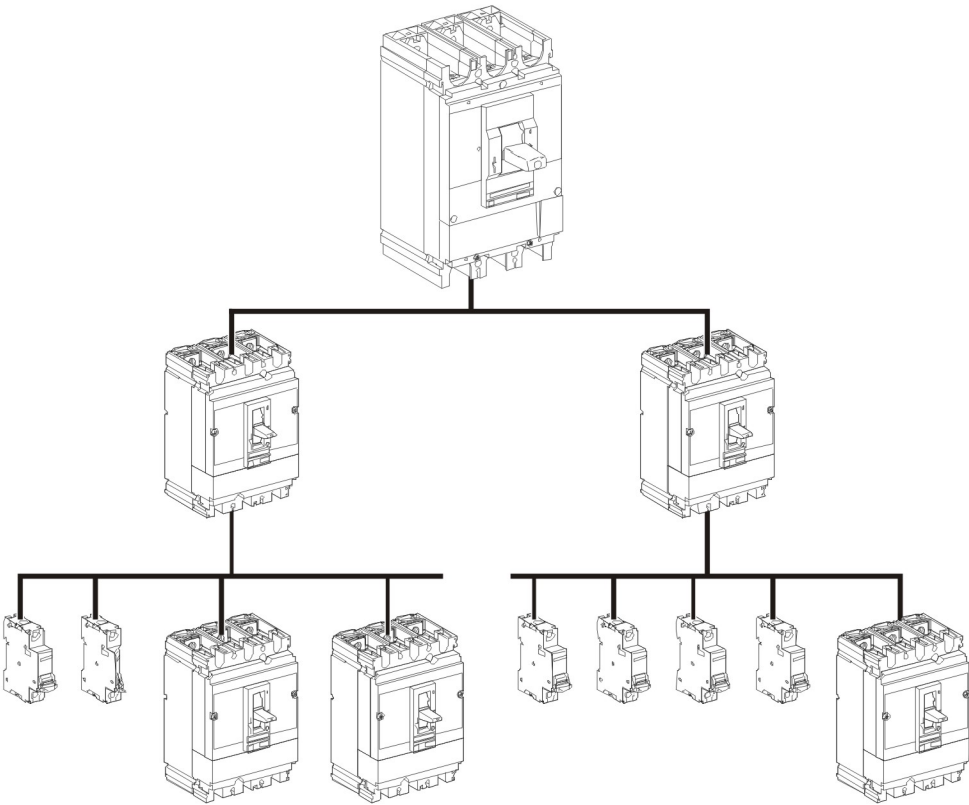
The rated working current range of iALM5 circuit breaker is 16 to 1600A:

- iALM5-100 to 630A: fixed type, plug-in type, front connection, rear connection, manual operation and electric operation.
- iALM5-800 to 1600A: fixed type, front connection, rear connection and manual operation.

iALM5-100~1250 Breaking capacity



Complete selectivity as a standard characteristic



iALM5	125	L	Z	4	3	10	2	B	T	125	AC230V
Product model	Rated frame current code	Breaking capacity	Operation mode	Number of poles	Tripping method	Internal accessory	Purpose	N-pole code	Additional Information	Rated current	Accessory voltage
iALM5 moulded case circuit breaker	63-63A 125A-125A 250A-250A 400A-400A	L: standard type M: medium type H: high breaking type	Default: direct operation	2: 2 poles	2: thermomagnetic release	00: no accessory 10: shunt release 10F: prepaid release 20: auxiliary contact	Default: distribution protection	A: three protective poles, the zero line is always connected and does not break together with other poles	T: transparent cover	10A 1600A	AC380/400V AC220/230V DC24V
	630-630A 800A-800A 1250A-1250A 1630A-1630A		Z: rotating handle operation	3: 3 poles	3: electronic release	30: undervoltage release 40: shunt+auxiliary 40F: prepaid release 50: auxiliary contact+undervoltage	2: motor protection	B: three protective poles, the zero line breaks together with other poles			When there are multiple accessory voltages, it should be described separately (such as shunt AC230V, undervoltage AC400V)
			P: electric operation	4: 4 poles		60: Two sets of auxiliary contact 70: undervoltage+auxiliary 08: alarm contact 18: shunt+alarm		B: four protective poles, the zero line breaks together with other poles			
						28: auxiliary+alarm 38: undervoltage+alarm 48: Shunt+auxiliary+alarm		D: four protective poles, the zero line breaks together with other poles			
						68: two sets of auxiliary contact+alarm 78: undervoltage+auxiliary+alarm					

Electrical auxiliary devices

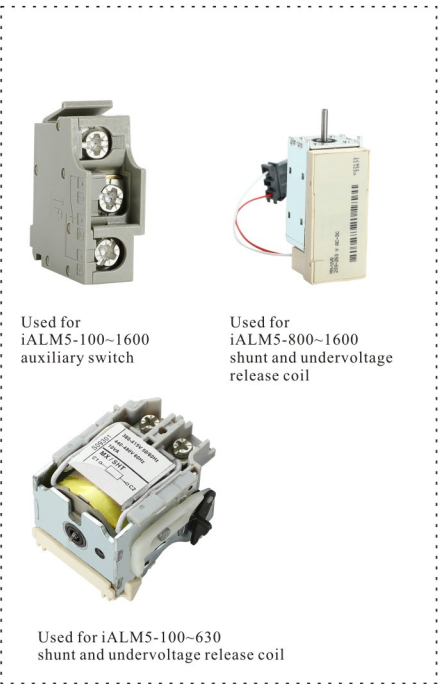
■ Auxiliary switch

Suitable for the full range of iALM5 circuit breaker, it provides four different functions: contact indication/(OF), alarm indication (SD), fault alarm indication (SDE) and Vigi leakage fault display (SDV).

■ Shunt and undervoltage release

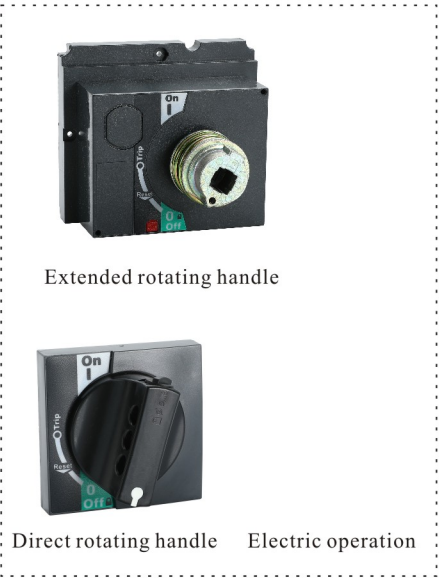
The following circuit breakers have their own commonly used undervoltage release coil (MN) and shunt release coil (MX).

- ☐ iALM5-100~630
- ☐ iALM5-800~1600



Operating mechanism

- The iALM5 series circuit breaker can change the operation mode of the circuit breaker by rotating the handle, and when the circuit breaker is installed in the distribution box, the operation can be extended to external operation.
- The electric motor mechanism can achieve remote opening and closing of the circuit breaker and local operation of the circuit breaker.



Vigi leakage fault protection module

- The Vigi module can provide leakage fault protection on iALM5-100~630 circuit breaker.
- The Vigi module is directly installed on the outgoing line terminal of the circuit breaker, and the addition of the Vigi module does not affect other operating characteristics of the circuit breaker.



Executive standard

The iALM5 circuit breaker and auxiliary equipment comply with the following national standards:

- IEC60947-1 《Low-voltage switchgear and controlgear -Part 1: General rules》
- IEC60947-2 《Low-voltage switchgear and controlgear -Part 2: Circuit-breakers》
- IEC60947-3 《Low-voltage switchgear and controlgear-Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units》
- IEC60947-5.1 《Low-voltage switchgear and controlgear -Part 5-1: Control circuit devices and switching elements-Electromechanical control circuit devices》
- GB/T14048.1-2006 《Low-voltage switchgear and controlgear- Part 1 :General rules》
- GB/T14048.2-2008 《Low-voltage switchgear and controlgear-Part 2: Circuit-breakers》
- GB/T2828-2003 《Sampling procedures and tables for lot-by-lot inspection by attributes
- GB/T5169.10-1997 《Fire hazard testing for electric and electronic products-Test methods-Glow-wire test methods- General》
- GB/T13384-1992 《General specifications for packaging of mechanical and electrical products》

Damp heat resistance measures

The iALM5 moulded case circuit breaker should comply with the strict environmental conditions specified in the following standards for testing:

- IEC68-2-1- 《Environmental testing-Part 2-1: Tests-Test A: Cold(-55℃)》
- IEC68-2-2- 《Environmental testing-Part 2-2:Tests -Test B: Dry heat (+85℃)》
- IEC68-2-30- 《Environmental testing-Part 2-30: Tests - Test Db: Damp heat, cyclic (12h + 12h cycle) (humid heat conditions: 55℃, 95% relative humidity)》
- IEC68-2-52 《Environmental testing -Part 2-52: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution) 》

Pollution level

The pollution level of the iALM5 circuit breaker is confirmed to be level three, meeting the definition in IEC60947 (Industrial Environment).

Environment condition

1. The altitude of the installation site shall not exceed 2000m;
2. Temperature range of surrounding medium: -25℃~40℃;
3. In a medium without explosion risk, and in a place where the medium with gas and conductive dust is not sufficient to corrode metal and damage insulation;
4. In places free from rain and snow;
5. Pollution level 3;
- 6: Installation category III.

Isolation function

The isolation function of the iALM5 circuit breaker should comply with the IEC60947-2 standard

- Isolation position at "O" (OFF)
- The operating handle can only indicate the "O" (OFF) position when the contact of the circuit breaker is fully open

Guarantee of isolation function

- Mechanical reliability of contact indication system
- No leakage current
- Overvoltage withstand capacity between incoming and outgoing terminals

Installation of category II switchgear

The iALM5 circuit breaker with rotating handle and electric mechanism can be installed in the switchgear with protection class II (according to IEC60664 standard), which will not reduce the insulation level of the switchgear, because the iALM5 circuit breaker provides class II insulation panel to insulate all internal lines.



iALM5-100~630 technical parameter

iALM5 circuit breaker				iALM5-100	iALM5-160	iALM5-250	iALM5-400	iALM5-630
Number of poles				3,4	3,4	3,4	3,4	3,4
Control	Manual	Toggle handle		■	■	■	■	■
		Direct or extended rotating handle		■	■	■	■	■
	Electric		■	■	■	■	■	
Connection	Fixed	Front connection		■	■	■	■	■
		Rear connection		■	■	■	■	■
	Plug-in type	Front connection		■	■	■	■	■
		Rear connection		■	■	■	■	■
The electrical performance should comply with IEC60947-2 and GB14048.2								
Rated current (A)		In	40℃	100	160	250	400	630
Rated insulation voltage (V)		Ui		750	750	750	750	750
Rated impulse voltage (KV)		Uimp		8	8	8	8	8
Rated working voltage (V)		Ue	AC50/60Hz	400	400	400	400	400
Circuit breaker type				N H	N H	N H	N H	N H
Ultimate breaking capacity (KA)		Icu	AC50/60Hz 400V	35 80	35 80	35 80	35 80	35 80
Service breaking capacity		Ics	%Icu	100%	100%	100%	100%	100%
Isolation function				■	■	■	■	■
Application category				A	A	A A	A A	
Maximum expected maintenance value (C-O cycle)	Mechanical			50000	40000	20000	15000	15000
	Electrical	440V	In/2	50000	40000	20000	12000	8000
			In	30000	20000	10000	6000	4000
Test life		On-load/off-load/total number		1000/8500/9500	850/7000/9500	850/7000/7850	850/4000/4850	850/4000/4850
Protection								
Release				TED(Thermal-magnetic)	STK22SE(electronic)		STK23SE(electronic)	STK53UE(electronic)
Overload protection		Long delay	Ir(In×...)	■	■		■	■
Short circuit protection		Short delay	Isd(Ir×...)					
		Instant	Ii(In×...)	■	■		■	■
Leakage protection		Vigi module		■	■		■	■
Indication and control accessory								
Auxiliary switch				■	■		■	■
MX shunt and MN undervoltage coil				■	■		■	■
Installation								
Accessory		Terminal expansion and extension		■	■		■	■
		Terminal interphase partition		■	■		■	■

iALM5-100~630 technical parameter

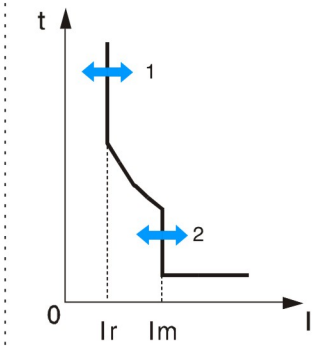


iALM5-800~1600 technical parameter

iALM5 circuit breaker				iALM5-800	iALM5-1000	iALM5-1250	iALM5-1600
Number of poles				3,4	3,4	3,4	3,4
Control	Manual	Toggle handle		■	■	■	■
Connection	Fixed	Front connection		■	■	■	■
		Rear connection		■	■	■	■
The electrical performance should comply with IEC60947-2 and GB14048.2							
Rated current (A)	In	50℃		800		1250	1600
		65℃		750		1000	1000
Rated insulation voltage (V)	Ui			8		750	750
Rated impulse voltage (KV)	Uimp			690		8	8
Rated working voltage (V)	Ue	AC50/60Hz		N		690	690
Circuit breaker type				50			
Ultimate breaking capacity (KA)	Icu	AC50/60Hz		440V	75%		
Service breaking capacity	Ics	%Icu		25			
Short time withstand current (KA rms) VAC 50/60Hz	Icw	0.5s		17			
		1s					
Isolation function				■			
Application category				B			
Maximum expected maintenance value (C-O cycle)	Mechanical			50000			
	Electrical	440V	In/2	6000		5000	
			In	5000		4000	
		690V	In/2	4000		3000	
			In	2000		2000	
Pollution level				III			
Protection							
Interchangeable control units				SKT2.0	SKT5.0		
Overload protection	Long delay	Ir(In×...)		■	■		
Short circuit protection	Short delay	Isd(Ir×...)		—	■		
	Instant	Ii(In×...)		■	■		
Control accessory							
Auxiliary switch				■			
MX shunt and MN undervoltage coil				■			

iALM5-800~1600 technical parameter

The iALM5-100~250 circuit breaker is equipped with thermomagnetic (TED) and electronic (STK22SE) releases.

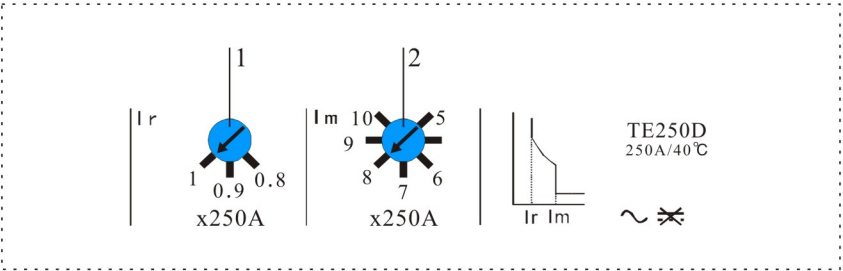


- 1. Overload thermal protection adjustable setting value (1)
- 2. Short circuit fault protection adjustable or fixed setting value (2)

iALM5-100~250 release

Trip module	Protection type	Power protection type	Low voltage distribution network protection type	Generator protection type
Thermomagnetic type		TE□M	TE□D	—
Electronic		STK□□ME	STK□□SE	STK□□GE

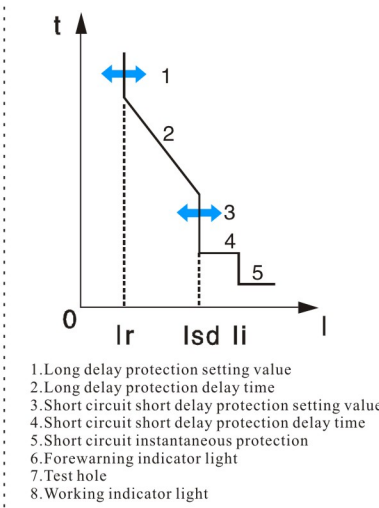
Thermomagnetic release TED



Protection

- The protection function can be adjusted through knob
- Overload protection
- Short circuit protection
- According to current specifications, the magnetic protection can be classified into fixed and adjustable types
- The release of a four pole circuit breaker can be classified into neutral line protection or not:
- 4P 3d type (no neutral line protection)
- 4P 4d type (neutral line protection Ir)

iALM5-100~250 tripping mechanism		TE16D~250D												
Rated value (A)	In	16	25	32	40	50	63	80	100	125	160	200	225	250
Circuit breaker	iALM5-100	■	■	■	■	■	■	■	■	-	-	-	-	-
	iALM5-160	-	-	-	-	■	■	■	■	■	■	-	-	-
	iALM5-250	-	-	-	-	-	-	■	■	■	■	■	■	■
Overload protection (thermal protection)														
Tripping current value (A)	Ir	Adjustable range 0.8~1×In												
Short circuit current protection (electromagnetic trip)														
Short circuit current value (A)	Im	Fixed										Adjustable		
	iALM5-100	190	250	320	400	500	630	800	1000	1250	1600	5...10XIn		
	iALM5-160/250					500	630	800	1000	1250	1600			
Neutral line protection														
No neutral line protection	4P 3d	No protection												
Neutral line protection In	4P 4d	1×Ir												



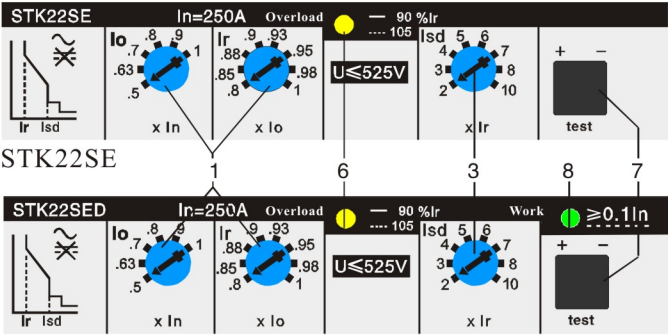
- 1. Long delay protection setting value
- 2. Long delay protection delay time
- 3. Short circuit short delay protection setting value
- 4. Short circuit short delay protection delay time
- 5. Short circuit instantaneous protection
- 6. Forewarning indicator light
- 7. Test hole
- 8. Working indicator light



Neutral line protection

iALM5-100~250 release

STK22SE electronic release



STK22SED

Protection

- LT (long delay) overload protection adjustable Ir setting value (1)
- ST (short delay) short circuit current protection
- Isd action value adjustable
- With fixed delay (4)
- INST short-circuit instantaneous current protection, with fixed action value (5)
- 4-pole circuit breaker, neutral line protection adopts a sealed 3-gear setting:4P3d (without neutral line protection), 4P 3d+N/2 (neutral line protection action value 0.5Ir), 4P 4d (neutral line action protection value Ir)

Indication

- Overload indication (6)
- When the working current is greater than 90% Ir, the indicator light remains on
- When the working current is greater than 105% Ir, the indicator light flashes
- Working indication (8) (STK22SED)
- When the working current is ≥ 0.1In, the working indicator light starts to flash, indicating that the electronic release is working normally.

Test

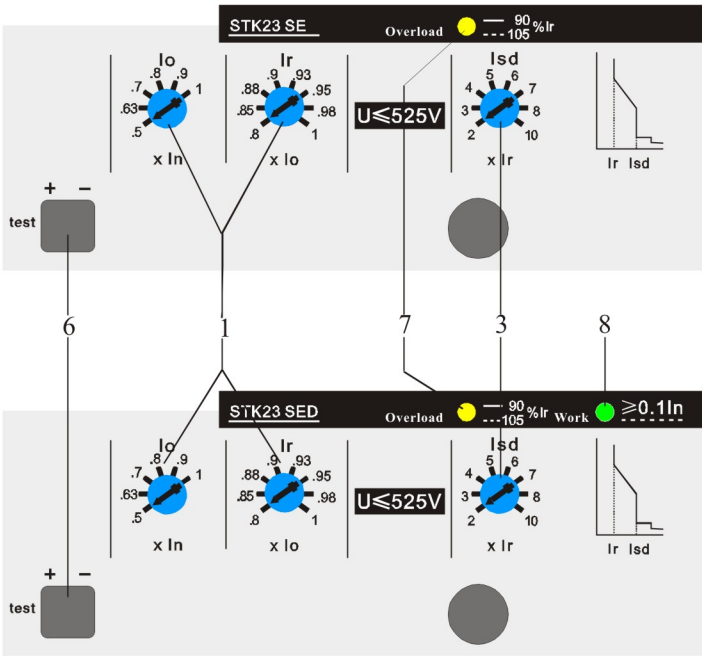
Test hole (7) can be connected to 16~20V DC power supply to check whether the circuit breaker trips normally.

iALM5-100~250 tripping mechanism		STK22SE				STK22SED			
Rated value (A)	In	40	100	160	250	40	100	160	250
Circuit breaker	iALM5-100	■	■	—	—	■	■	—	—
	iALM5-160	—	■	■	—	—	■	■	—
	iALM5-250	—	■	■	■	—	■	■	■
Normal operation indication		—	—	—	—	—	—	—	—
Overload protection (long delay)									
Setting value of tripping current (A)	$I_r=I_n \times \cdots$	0.4...1 Adjustable (48 points)							
Tripping time (S) (min... max)	at $1.5 \times I_r$	90...180							
	at $6 \times I_r$	5...7.5							
	at $7.2 \times I_r$	3.2...5.0							
Short circuit current protection (short delay)									
Setting value of tripping current (A)	$I_{sd}=I_r \times \cdots$	2...10							
Accuracy $\pm 15\%$		Adjustable (48 points)							
Delay time (ms)		Fixed							
Maximum overcurrent tripping time		≤ 60							
Total breaking time		≤ 100							
Short circuit current protection (instant)									
Tripping current value (A)	I_i	11 I_n							
Neutral line protection									
No neutral line protection	4P 3d	No protection							
Neutral line half protection 0.5 I_n	4P 3d+N/2	0.5 $\times I_r$							
Neutral line protection I_r	4P 4d	1 $\times I_r$							

The iALM5-400~630 circuit breaker can be equipped with an electronic release STK23SE or STK53UE.

1. Long delay protection setting value
2. Long delay protection delay time
3. Short circuit short delay protection setting value
4. Short circuit short delay protection delay time
5. Short circuit instantaneous protection setting value
6. Test hole
7. Forewarning indicator light
8. Working indicator light

STK23SE and STK23SED electronic release



Protection

The protection function is set through the setting knob.

Overload protection

The threshold value of overload long delay protection is adjustable, and the tripping delay time is fixed:

- Coarse adjustment (0.5~1, 6 points adjustable)
- Fine adjustment (0.8-1, 8 points adjustable)

Short circuit protection

- The current setting value of short circuit short delay is adjustable, and the tripping delay time is fixed
- Short-circuit instantaneous protection current setting value is fixed

4-pole protection

Standard 4-pole circuit breaker, the neutral line protection is set through 3 gears, including 4P3d (without neutral line protection), 4P3d+N/2 (neutral line protection action value is 0.5Ir), and 4P4d (neutral line protection action value is Ir).

Indication

Overload indication (7):

- When it is greater than 90% Ir, the LED light is on
- When it is greater than 105% Ir, the LED flashes

Operation indicator (8): (Only available for STK23SED)

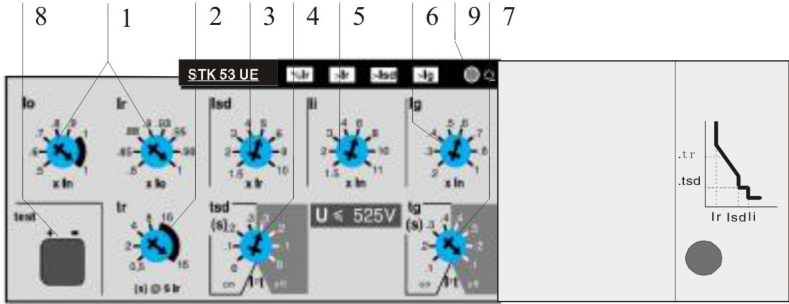
- When the working current is $\geq 0.1I_n$, the working indicator light starts to flash, indicating that the electronic release is working normally

Test

The test hole is on the panel (6) to check whether the circuit breaker trips normally.

1. Long delay protection setting value
2. Long delay protection delay time
3. Short circuit short delay protection setting value
4. Short circuit short delay time
5. Short circuit instantaneous protection setting value
6. Single-phase grounding protection setting value
7. Single-phase grounding protection delay time
8. Test hole
9. Indicator light test button

STK53UE electronic release



Protection

The protection function is set through the setting knob.

Overload protection

The threshold value of overload long delay protection is adjustable, and the tripping delay time is fixed:

- Coarse adjustment (0.5~1, 6 points adjustable)
- Fine adjustment (0.8-1, 8 points adjustable)

Short circuit protection

Short circuit short delay and instantaneous protection

- The protection setting value of short circuit short delay is adjustable, and the tripping delay time is fixed
- The setting value for short-circuit instantaneous protection is adjustable

4-pole protection

Standard 4-pole circuit breaker, the neutral line protection is set through 3 gears, including 4P3d (without neutral line protection), 4P3d+N/2 (neutral line protection action value is 0.5Ir), and 4P4d (neutral line protection action value is Ir).

Overload indication

- When it is greater than 90% Ir, the LED light is on
- When it is greater than 105% Ir, the LED flashes

Fault indication

LED light indicates the type of fault causing tripping

- Overload (LT protection) or internal overhigh temperature ($>I_r$)
- Short circuit (ST or instantaneous protection) ($>I_{sd}$)
- Ground fault (with ground fault protection option) ($>I_g$) light on
- The microprocessor fault (both ($>I_r$) and ($>I_m$) lights are on, and if equipped with ground fault protection option, the ($>I_g$) light is also on) indicator light is powered by the battery, and the backup battery is in the junction box. When fault occurs, the LED light indicates the type of fault and continuously displays for 10 minutes, while the information is stored in the internal memory. When the test button (9) is pressed, the LED light will turn on again. When the circuit breaker is reset, the LED light automatically turns off and clears the memory.

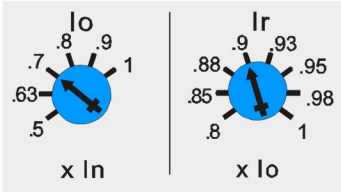
Test

- The test hole is located on the panel (8) for testing the operation of the release
- The test button (9) is used to check (% Ir), ($>I_m$) and ($>I_g$) LED light and battery

Release		U≤525V		STK23SE				STK53UE			
Rated value (A)		In		320	400	500	630	320	400		630
Circuit breaker	iALM5-400		■	■	—	—		■	■		—
	iALM5-630		—	■	■	■		—	■		■
Overload protection (long delay)											
Tripping current value (A)		Ir=In × ...		0.4...1 48 points adjustable				48 points adjustable			
Tripping delay (s)				Fixed				Fixed			
(Min...max)	1.5×Ir		90...18				8...15 34...50 69...100 277...400				
	6×Ir		5...7.5				0.4...0.5 1.5...2 3...4 6...8 12...16				
	7.2×Ir		3.2...5.0				0.2...0.74 1...1.4 2...2.8 4...5.5 8.2...11				
Short circuit current protection (short delay)											
Tripping current (A)		Isd=Ir×...		2...10				1.5...10			
Accuracy ±15%				8 points adjustable				8 points adjustable			
Time delay (ms)								Fixed 4 points + I²t normal temperature			
Maximum overcurrent time before tripping				≤40				≤40 ≤60 ≤140 ≤230			
Total breaking time				≤60				≤60 ≤140 ≤230 ≤350			
4-pole protection											
No neutral line protection		4P 3d		No protection				No protection			
Neutral line 0.5In		4P 3d+N/2		0.5×Ir				0.5×Ir			
Neutral line In		4P 4d		1×Ir				1×Ir			

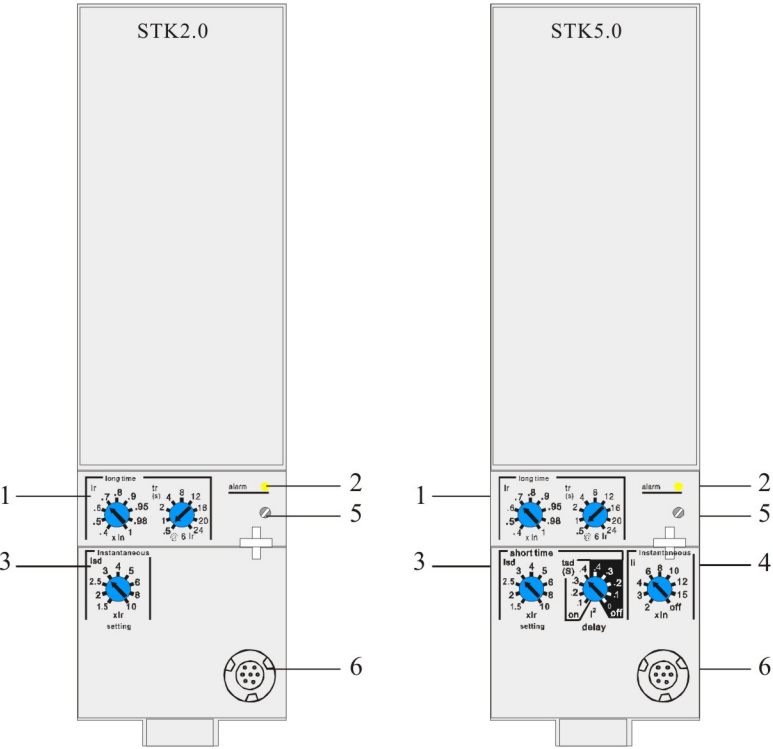
Example of setting current settings

What is the overload protection current value I when iALM5-400 and STK23SE release are selected with Io=0.7 and Ir=0.9?
Answer: I=In×Io×Ir=400×0.7×0.9=252A
What is the overload protection current value I when iALM5-630 and STK23SE release are selected with Io=0.7 and Ir=0.9?
Answer: I=In×Io×Ir=630×0.7×0.9=396.9A



- 1.long delay, current setting value and tripping delay
- 2.Overload signal (LED)
- 3.Short delay, current setting value and tripping delay
- 4.Instantaneous protection current setting
- 5.Long delay setting module fixing screws
- 6.Test hole

STK2.0 and 5.0 control units protect the power circuit
STK5.0 provides time selectivity for short circuit short delay



Protection

The protection threshold and delay time are all set though the adjustment knob. It provides standard long delay setting module.

Overload protection

Thermal memory: The accumulation of heat before and after tripping.

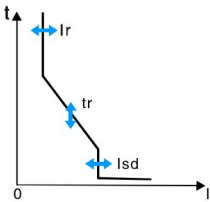
Short circuit protection

In terms of delay, I²t can be selected (ON or OFF).
I²t ON: Short circuit short delay action time acts with I²t inverse time limit.
I²t OFF: Short circuit short delay time acts with definite time limit.

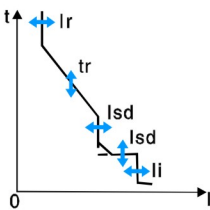
Indication

Overload indication is achieved through the alarm LED on the panel. When the current exceeds the long delay setting threshold, the LED lights up.

Protection		STK2.0									
Long delay											
Current setting (A)		$I_r=I_{nx}\cdots$	0.4	0.5	0.6	0.7	0.8	0.9	0.95	0.98	1
Tripping between 1.05 and 1.20 I_r			Replacing the long delay setting module can change the setting range or cancel the function								
Delay		$tr(S)$	0.5	1	2	4	8	12	16	20	24
Delay (S)	Accuracy 0 to -30%	$1.5\times I_r$	12.5	25	50	100	200	300	400	500	600
	Accuracy 0 to -20%	$6\times I_r$	$0.7^{(1)}$	1	2	4	8	12	16	20	24
	Accuracy 0 to 20%	$7.2\times I_r$	$0.7^{(2)}$	0.69	1.38	2.7	5.5	8.3	11	13.8	16.6
Thermal memory			20 minutes before and after tripping								
(1)0~-40% (2)~-60%											
Instantaneous											
Setting value (A)	$I_{sd}=I_{rx}\cdots$		1.5	2	2.5	3	4	5	6	8	10
Accuracy $\pm 10\%$											
Delay			Maximum setting time: 20ms, maximum breaking time: 60ms								



Protection		STK5.0										
Long delay												
Current setting (A)		$I_r=I_{nx}...$	0.4	0.5	0.6	0.7	0.8	0.9	0.95	0.98	1	
Tripping between 1.05 and 1.20 I_r			Replacing the long delay setting module can change the setting range or cancel the function									
		tr(S)	0.5	1	2	4	8	12	16	20	24	
Delay (S)	Accuracy 0 to -30%	$1.5\times I_r$	12.5	25	50	100	200	300	400	500	600	
	Accuracy 0 to -20%	$6\times I_r$	$0.7^{(1)}$	1	2	4	8	12	16	20	24	
	Accuracy 0 to 20%	$7.2\times I_r$	$0.7^{(2)}$	0.69	1.38	2.7	5.5	8.3	11	13.8	16.6	
Thermal memory		20 minutes before and after tripping										
(1)0~-40% (2)~-60%												
Short delay												
Setting value (A)	$I_{sd}=I_{rx}...$		1.5	2	2.5	3	4	5	6	8	10	
Accuracy $\pm 10\%$												
Delay time tsd (s)	Setting	I^2t Off	0	0.1	0.2	0.3	0.4					
		I^2t On		0.1	0.2	0.3	0.4					
Delay (ms) at 10 I_r (12t off or 12t on)	tsd (maximum overcurrent time)		20	80	140	230	350					
	tsd (maximum breaking time)			80	140	230	350					
Instantaneous												
Setting value (A)	$I_i=I_{rx}...$		2	3	4	6	8	10	12	15	off	
Accuracy $\pm 10\%$												
Delay		Maximum setting time: 20ms, maximum breaking time: 60ms										



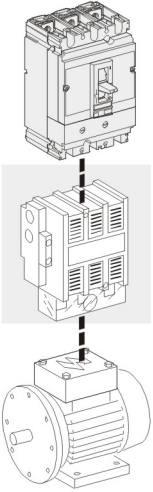
Derating coefficient and ambient temperature

The release time and critical value of the electronic release are not affected by temperature fluctuations. However, the maximum allowable current of the circuit breaker still depends on the ambient temperature. The table below provides the maximum operating current corresponding to different ambient temperatures of the circuit breaker.

iALM5-100	40℃	45℃	50℃	55℃	60℃	65℃	70℃
In16-100A	No derating					0.95	0.95
iALM5-160	No derating			0.98	0.95	0.9	0.85
iALM5-250	40℃	45℃	50℃	55℃	60℃	65℃	70℃
In 100A	No derating						
In 160A	No derating						
In 250A	No derating		242A	237A	230A	222A	213A
Derating coefficient	1	1	0.97	0.95	0.92	0.89	0.85
iALM5-400	40℃	45℃	50℃	55℃	60℃	65℃	70℃
	No derating		398A	380A	368A	352A	340A
Derating coefficient	1	1	0.98	0.95	0.92	0.88	0.85
iALM5-630	40℃	45℃	50℃	55℃	60℃	65℃	70℃
	No derating	567A	561A	542A	529A	510A	504A
Derating coefficient	1	0.9	0.89	0.86	0.84	0.81	0.8

When the ambient temperature of thermomagnetic circuit breaker exceeds 40℃,the overload protection characteristic will change, so the derating coefficient at high temperature should be considered in practical applications. The following table explains the detailed derating coefficients for each specification at different temperatures.

Rated value (TEM, TED)	40℃		45℃		50℃		55℃		60℃		65℃		70℃	
16A	16	1.0	15.6	0.975	15	0.95	15	0.93	14.5	0.90	14	0.875	13.6	0.85
20A	20	1.0	19.5	0.975	19	0.95	18.5	0.93	18	0.90	17.5	0.875	17	0.85
25A	25	1.0	24.5	0.975	24	0.95	23	0.93	22.5	0.90	22	0.875	21	0.85
32A	32	1.0	31	0.975	30.4	0.95	30	0.93	269	0.90	28	0.875	27	0.85
40A	40	1.0	39	0.975	38	0.95	37	0.93	36	0.90	35	0.875	34	0.85
50A	50	1.0	49	0.975	47.5	0.95	46.5	0.93	45	0.90	44	0.875	42.5	0.85
63A	63	1.0	61.5	0.975	60	0.95	58.5	0.93	57	0.90	55	0.875	53.5	0.85
80A	80	1.0	78	0.975	76	0.95	74	0.93	72	0.90	70	0.875	68	0.85
100A	100	1.0	97.5	0.975	95	0.95	93	0.93	90	0.90	87.5	0.875	85	0.85
125A	125	1.0	122	0.975	119	0.95	116	0.93	112.5	0.90	109	0.875	106	0.85
160A	160	1.0	156	0.975	152	0.95	149	0.93	144	0.90	140	0.875	136	0.85
200A	200	1.0	195	0.975	190	0.95	186	0.93	180	0.90	175	0.875	170	0.85
225A	225	1.0	219	0.975	241	0.95	209	0.93	203	0.90	197	0.875	191	0.85
250A	250	1.0	244	0.975	238	0.95	233	0.93	225	0.90	219	0.875	213	0.85



Feature of circuit breaker:

- It provides short-circuit protection
- Isolation function complies with IEC947-2 standard

Motor overload protection should include the motor and its control equipment:

- Circuit breaker
- Independent TE thermal relay

The control device may be a direct starter (reversible or irreversible) or a star-delta starter.

The combination method should comply with IEC947-4 standard.

iALM5-100~630 motor protection

iALM5 circuit breaker				iALM5-100	iALM5-160	iALM5-250	iALM5-400	iALM5-630	
Number of poles				3,4	3,4	3,4	3,4	3,4	
Control	Manual	Toggle handle		■	■	■	■	■	
		Direct or extended rotating handle		■	■	■	■	■	
	Electric			■	■	■	■	■	
The electrical performance meets IEC947-2 and GB14048.2									
Rated current (A)	In	65℃		100	100	100	100	100	
Rated insulation voltage (V)	Ui			750	750	750	750	750	
Rated impulse withstand voltage (kV)	Uimp			8	8	8	8	8	
Rated working voltage (V)	Ue	AC50/60Hz		400	400	400	400	400	
Circuit breaker type				N	H	N	H	N	H
Ultimate breaking capacity (kA)	Icu	AC50/60Hz	400V	35	80	35	80	40	80
Service breaking capacity	Ice	(%Icu)		100%	100%	100%	100%	100%	100%
Utilization category				A	A	A	A	A	A
Isolation function				■	■	■	■	■	■
Maximum expected maintenance value	Mechanical			50000	40000	20000	15000	15000	
	Electrical			50000	40000	20000	12000	8000	
	440V-In			30000	20000	10000	6000	4000	
Test life	On-load/off-load/total number			1000/8500/9500	850/7000/7850	850/7000/7850	850/4000/4850	850/4000/4850	
Protection									
Release				TEM (Thermomagnetic)	STK22ME (electronic)		STK23ME (electronic)		
Overload protection	Long delay	Ir(In×··)		—	■		■		
Short circuit protection	Instantaneous	Ii(In×··)		■	Fixed		Fixed		
Ground fault protection	Additional Vigi module			■	■		■		
Installation and connection									
Fixed/front panel connection				■	■		■		
Fixed/rear panel connection				■	■		■		
Plug-in type (on the base plate)				■	■		■		
Control auxiliary device									
Auxiliary switch				■	■		■		
Auxiliary tripping element				■	■		■		
Electric mechanism				■	■		■		
Rotating handle (direct, extended)				■	■		■		
Installation and connection accessory									
Accessory	Terminal expansion			■	■		■		
	Interphase partition			■	■		■		

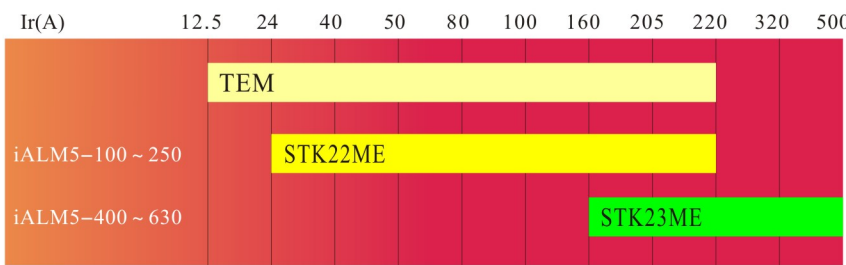
iALM5-100~630 motor protection

Overview

When protecting the motor, the BTEM1 circuit breaker should be installed with:

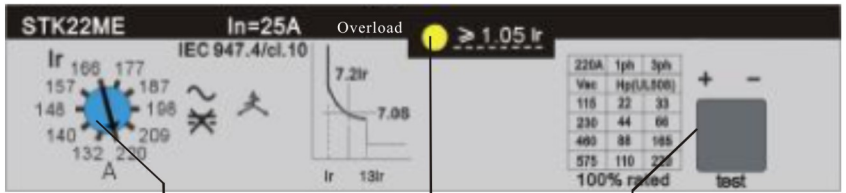
- Electromagnetic release providing short-circuit fault protection
- Electronic release
- ☐ Short circuit protection
- ☐ Overload protection
- ☐ Phase failure protection

Release

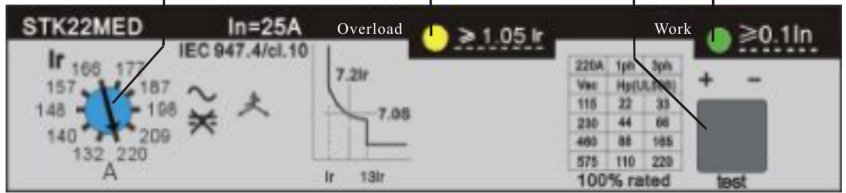


Release		STK22ME						STK23ME		
Rated value	20~70℃	40	50	80	100	150	220	200	320	500
	iALM5-100N/H	■	■	■	■					
	iALM5-160N/H	■	■	■	■	■				
	iALM5-250N/H	■	■	■	■	■	■			
	iALM5-400N/H							■	■	
	iALM5-630N/H									■
Overload protection (long delay)										
Release	Ir	Adjustable						Adjustable		
Current(A)		(10 position)						(10 position)		
		0.6...1xIn						0.6...1xIn		
Tripping time		Fixed						Fixed		
Tripping type (IEC947-4)		10						10A,10,20		
Phase failure protection										
Built in release		■						■		
Tripping time		Between 3.5s and 6s						4s±10%		
Phase fault (s)										
Short circuit current protection (short delay)										
Tripping current adjustment fixed value (A)		Fixed						Adjustable		
		13xIr						(8 position)		
	Accuracy	± 20%						6...13xIr		
Tripping time under maximum short-circuit current (ms)		Fixed						Fixed		
		20						20		
Total tripping time (ms)		60						60		
Short circuit protection (instant)										
Tripping current	Ii	Fixed						Fixed		
Setting value (A)		13In						13In		

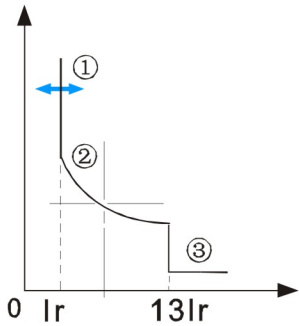
Electronic release STK22ME



STK22SE



STK22SED



- 1. Long delay protection setting value
- 2. Long delay protection delay time
- 3. Short circuit protection setting value
- 4. Instantaneous short circuit protection
- 5. Overload indicator light
- 6. Test hole
- 7. Working indicator light (only for STK22MED)

Protection

- LT (long delay) overload protection Ir action value adjustable (1); it complies with IEC60947-4(2) tripping level 10
- Phase failure protection (tripping delay between 3.5-6 s)
- ☐ Fixed tripping current setting value (13xIr) (3)
- INST (instantaneous) short circuit protection, fixed tripping current setting value (15xIn) (4)
- Phase failure protection shall comply with relevant clauses of IEC947-4.1, and act when single-phase current imbalance ≥ 40%

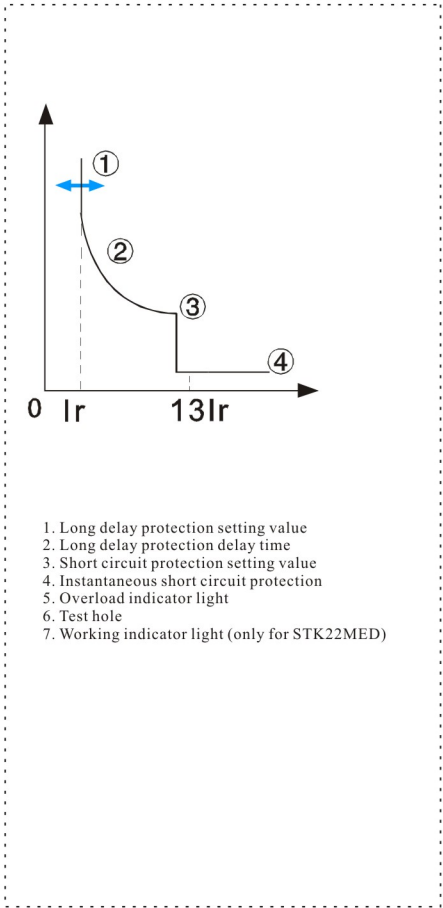
Release STK22ME										
Rated value (A)	Setting value of tripping current (A)									
40	24	25.5	27	28.5	30	32	34	36	38	40
50	30	31.5	33.5	35.5	37.5	40	42.5	45	47.5	50
80	48	51	54	57	60	64	68	72	76	80
100	60	63	67	71	75	80	85	90	95	100
150	90	95	101	107	113	120	127	135	142	150
220	132	140	148	157	166	177	187	198	209	220

Other functions

- Display
- (5) Overload indicator light (LED) on the panel:
 - It's off when I<1.05xIr
 - It flashes when I ≥ 1.05xIr
- (7) Working indicator light (LED) on the panel (only for STK22MED release)

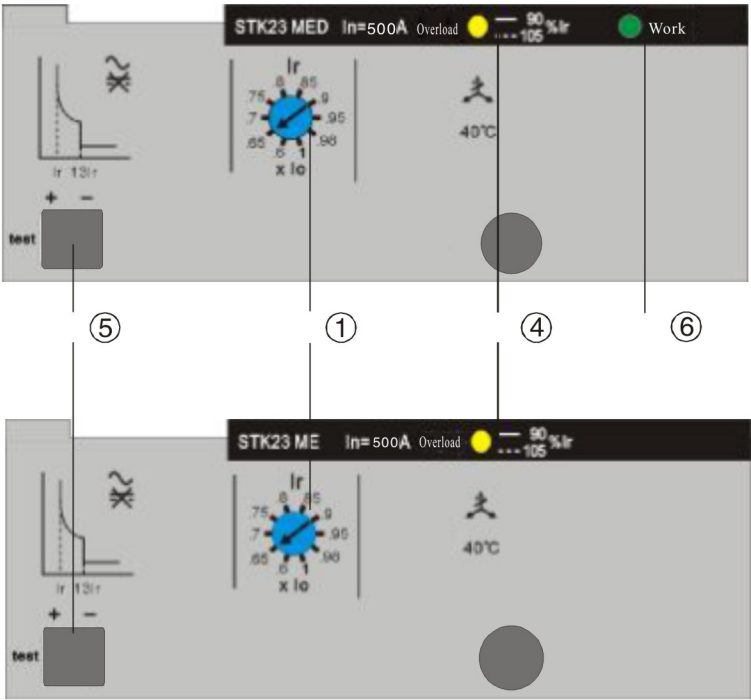
Test

(6) on the panel is the socket for the test connector,it's used to connect small tester or calibrate the test box, and check the operation of the release.



iALM5-100~630 release motor protection

STK23ME electronic release



Protection

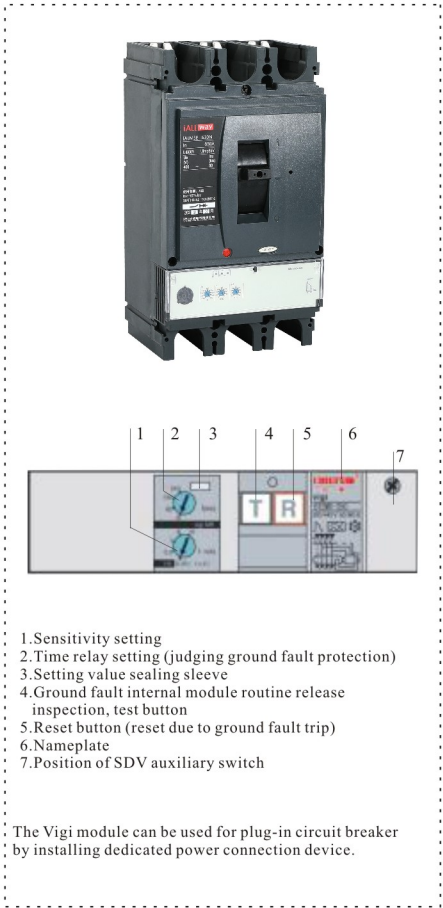
- LT (long delay) overload protection Ir action value adjustable (1); it complies with IEC60947-4(2) tripping level 10
- Phase failure protection (tripping delay between 3.5-6 s)
- ☐ Fixed tripping current setting value (13xIr) (3)
- INST (instantaneous) short circuit protection, fixed tripping current setting value (15xIn) (4)
- Phase failure protection shall comply with relevant clauses of IEC947-4.1, and act when single-phase current imbalance ≥ 40%

Other functions

- Display
- (5) Overload indicator light (LED) on the panel:
- It's off when $I < 1.05 \times I_r$
 - It flashes when $I \geq 1.05 \times I_r$
- (7) Working indicator light (LED) on the panel (only for STK22MED release)

Test

(6) on the panel is the socket for the test connector, it's used to connect small tester or calibrate the test box, and check the operation of the release.



iALM5-100~630 ground fault protection

The iALM5-100~630 circuit breaker achieves ground fault protection through the "Vigi" ground fault module installed on the circuit breaker end. The added Vigi module does not affect the characteristic of the circuit breaker.

- Executive standard
- Protection level, panel class II insulation
- Isolation function complies with IEC947-2
- Electrical characteristic
- Release characteristic
- Installation and connection method
- Indicating and measuring control auxiliary device
- Installation and connection accessory

Size and weight	iALM5-100/160	iALM5-250	iALM5-400/630
Size	3P	105x236x86	135x355x110
WxHxD(mm)	4P	140x236x86	180x355x110
Weight (kg)	3P	2.5	2.8
	4P	3.2	3.4
			8.8
			10.4

Vigi leakage protection module

- Executive standard
- IEC 60947-2
 - IEC 60255-4 and IEC 60801-2-5, it has the ability to withstand transient overvoltage, lightning, switching overvoltage, electrostatic discharge and radio frequency interference
 - IEC60755, Class A, with anti-interference ability of 6mA for DC component
 - VDE664, it can operate below -25°C

Remote indication

The Vigi module equipped with SDV auxiliary switch remotely indicates that the circuit breaker trips in case of ground fault.

Power supply

The Vigi module is self powered, and can still continue to operate when there is only A and C two-phase power supply.

Ground fault protection module

	Vigi ME	Vigi MH	Vigi MB
Number of poles	3,4 ⁽¹⁾	3,4 ⁽¹⁾	3,4 ⁽¹⁾
iALM5-100	■	■	—
iALM5-160	■	■	—
iALM5-250	—	■	—
iALM5-400	—	—	■
iALM5-630	—	—	■
Ground fault protection characteristic			
Sensitivity	Fixed	Adjustable	Adjustable
I△n(A)	0.3	0.03-0.3-1-3-10	0.3-1-3-10-30
Delay time	Fixed	Adjustable	Adjustable
Delay setting (ms)	<40	0 60 ⁽²⁾ 150 ⁽²⁾ 310 ⁽²⁾	0 60 150 310
Maximum breaking time (ms)	<40	<40 <140 <300 <800	<40 <140 <300 <800
Rated voltage (V)	200...440	200...440-440...550	200...440-440...550
AC 50/60Hz			

Note: If the sensitivity is set to 30mA, the release will instantly trip



The iALM5-100~1600 auxiliary switch can also be used to turn on and off weak current load.

iALM5-100~1600 accessory

Auxiliary switch

The auxiliary switch can remotely control circuit breaker for display, electrical interlocking, relay control, etc. It meets the requirements of IEC60947-5.

Function

- OF (switch) indicates the position of the contact of the circuit breaker
- SD (trip indication): circuit breaker trip indication
- ☐ Overload
- ☐ Short circuit
- ☐ Ground fault
- ☐ When the plug-in circuit breaker is in the working position, undervoltage tripping or button tripping can operate.

When the circuit breaker receives a reset signal,the SD contact resets

- SDE (fault display): it displays the tripping of the circuit breaker caused by fault
- ☐ Overload
- ☐ Short circuit
- ☐ Ground fault

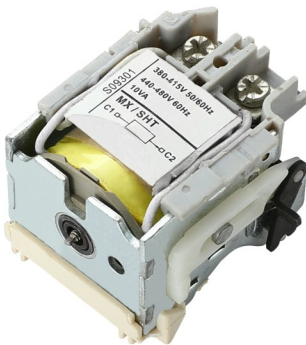
When the circuit breaker receives a reset signal, the SDE contact resets

- SDV (Vigid fault display) emits alarm signal when there is ground fault.
When the Vigi module is reset, the SDV contact is reset
- CAM (pre-open or pre-close function) indicates the position of the rotating handle
- Low load on/off: The above auxiliary switch can also be used to turn on/off weak current load (such as programmable controller or circuit)

Installation

- A universal auxiliary contact for OF, SD, SDE, and SDV is installed in different positions to achieve different functions. The auxiliary switch is clamped at the rear of the front panel of the circuit breaker (or clamped on the Vigi module with SDV function)
- iALM5-100~630, according to the position of the module installed on the circuit breaker, the SDE actuator is required in the circuit breaker to achieve functional thermomagnetic tripping
- CAM: Installed on the rotating handle unit (direct extension)

		Standard				Low power on/off			
Rated load current (A)		6				5			
Minimum load		100mA,24V				2mA,15V DC			
Utilization category (IEC 60947-5-1)		AC12	AC15	DC12	DC14	AC12	AC15	DC12	DC14
Working current (A)	24V	6	6	6	1	5	3	5	1
	48V	6	6	2.5	0.2	5	3	2.5	0.2
	110V	6	5	0.6	0.05	5	2.5	0.6	0.05
	220/240V	6	4	—	—	5	2	—	—
	250V	—	—	0.3	0.03	—	—	0.3	0.03
	380/440V	6	2	—	—	5	1.5	—	—
	480V	6	1.5	—	—	5	1	—	—
	660/690V	6	0.1	—	—	5	—	—	—



Used for iALM5-100~630 shunt and undervoltage trip coil

iALM5-100~630 accessory

Voltage trip

The voltage trip coil can trip the circuit breaker.
Undervoltage trip coil (MN)
■ When the control voltage drops below the set value of the release voltage, the circuit breaker trips
■ The setting range of the tripping voltage is 0.35-0.7 times the rated voltage
■ When the voltage exceeds 0.85 times the rated voltage, the circuit breaker can close
The circuit breaker trips through the MN coil, meeting the requirements of IEC 947-2.

Delay unit of MN coil

It ensures no action when the instantaneous voltage drop is ≤200ms.
■ 250V DC MN coil, control voltage: 220/240VAC
■ 48V DC MN coil, control voltage: 48VAC

Shunt coil (MX)

When the control voltage is greater than 07xUn, it enables the circuit breaker to trip.

Operation

- After tripping through MN or MX coil, the circuit breaker can be reset locally or remotely
- MN or MX tripping is faster than manual (or electric mechanism) disconnection. When there is a tripping command, do not perform other operations
- Service life:
☐ iALM5-100~630 circuit breaker generally has a 50% rated mechanical life

Installation and connection

- The rear of the circuit breaker panel is equipped with MX and MN coils
- The cross-sectional area of the connecting wire is 1.5mm²

Electrical characteristic

For iALM5		iALM5-100~630	
		AC	DC
Energy consumption	Pull-in (MX)	<10VA	<10W
	Holding (MN)	<5VA	<5W
Response time (ms)		<50	<50

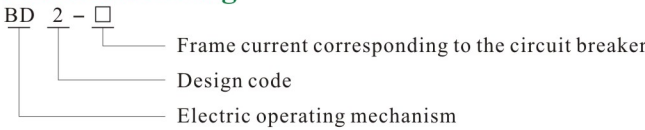
iALM5-100~630 electric mechanism

- The BD2 series electric operating mechanism (hereinafter referred to as electric operation) is a specialized accessory driven by small-sized permanent magnet DC motor for remote closing, breaking and re-tripping operations of 63-630A moulded case circuit breaker.
- The BD2 series electric operating mechanism is classified into two categories: BD2-250 and BD2-630.

Feature

- The BD2 series electric operation has compact structure, small size, convenient installation, reliable operation, and can also be manually operated with the operating handle.
- BD2 series electric operation is universal for AC and DC, with a wide application range of control circuit voltage and low working current.
- The BD2 series electrical operation can correctly display the closed, open and trip states of the circuit breaker.

Model Meaning



Rotating handle

- 2 types of rotating handles
- Handle style:
- Direct rotating handle
 - Extended rotating handle
 - Standard black handle

Direct rotating handle

Protection level: IP40, Ik07

Operation

- Function:
 - Isolation function
 - O (off), I (on) and trip three positions and indications
 - Tripping button

Installation

Remove the front cover of the circuit breaker and replace it with rotating handle. The iALM5-100~630 series direct rotating handle is used for the following situations:

- Motor control center (MCC) switchgear:
 - When the circuit breaker is connected, the door closes
 - When the door is open, the circuit breaker is prohibited from closing
 - Protection level: IP 43, Ik07
 - Machine tool control complies with CNOMO EO3.81.501N, with protection level of IP54, IK 08

Extended rotating handle

The circuit breaker installed on the switchgear can be operated through the front rotating handle.

Protection level: IP55, Ik08

Operation

- Function:
 - Isolation function
 - O (off), I (on) and trip three positions and indications
 - When the door is open, the release can be adjusted
- The circuit breaker cannot close when the door is open

Composition of extended rotating handle

- Remove the front cover of the circuit breaker and replace it with extended handle
- The handle and nameplate on the door are always installed in the same position, horizontal or vertical to the circuit breaker

Installation unrelated

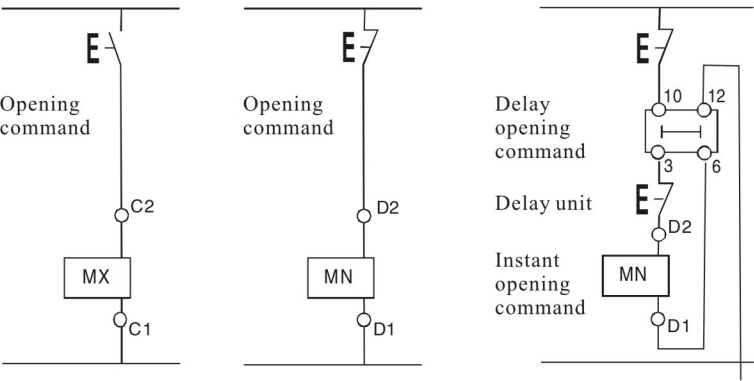
- The axis of the extended handle can be adjusted according to the distance from the back of the circuit breaker to the door:
 - iALM5-100/250:185~600mm
 - iALM5-400/630:210-625mm

Voltage tripping (iALM5-800~1600)

This functional component opens the circuit breaker through an electric command. The component can be a shunt coil (MX), an undervoltage trip coil (MN) or a delay undervoltage trip coil (MN+delay unit).

The delay unit is installed outside the circuit breaker, and the emergency opening OFF button can be used to instantly open the circuit breaker to cancel the delay. Wiring diagram of remote release functional component is shown as follows.

Wiring diagram of remote release functional component



Voltage trip coil (MX)

When the MX voltage trip coil is energized, it causes the circuit breaker to instantly open. The continuous power supply of MX locks the circuit breaker in the OFF position.

Characteristic			
Power supply	VAC 50/60Hz	24/30-48/60-100/130-200/250-240/277-380/480	
	VDC	24/30-48/60-100/130-200/250	
Working range		0.7-1.1Un	
Continuous locking function		0.85-1.1Un	
Energy consumption (VA or W)		Pull-in:200(200ms) Holding:4.5	
Response time of circuit breaker at Un		50ms±10	

Undervoltage trip coil (MN)

When the power supply voltage of MN drops to 35% -70% of its rated voltage value, MN causes the circuit breaker to instantly open. If MN loses power, it is impossible to manually or electrically close the circuit breaker. Any attempt to close will not affect the main contact. When the supply voltage of the coil returns to 85% of its rated value, the circuit breaker can be closed again.

Characteristic			
Power supply	VAC 50/60Hz	24/30-48/60-100/130-200/250-240/277-380/480	
	VDC	24/30-48/60-100/130-200/250	
Working range		0.35-0.7Un	
Continuous locking function		0.85	
Energy consumption (VA or W)		Pull-in:200 (200ms) Holding:4.5	
Response time of circuit breaker at Un		90ms±10	

MN, MX voltage coil wiring

During the pull-in process, the initial power is approximately 150-200VA. In the case of low supply voltage (12,24,48V), the maximum length of the cable depends on the supply voltage and cable size.

		12V 2.5mm ²		24V 2.5mm ²		48V 2.5mm ²	
MN	100%U _{supply voltage}	—	—	58	35	280	165
	85%U _{supply voltage}	—	—	16	10	75	45
MX-XF	100%U _{supply voltage}	21	12	115	70	550	330
	85%U _{supply voltage}	10	3	75	44	350	210

iALM5-250 with electric mechanism



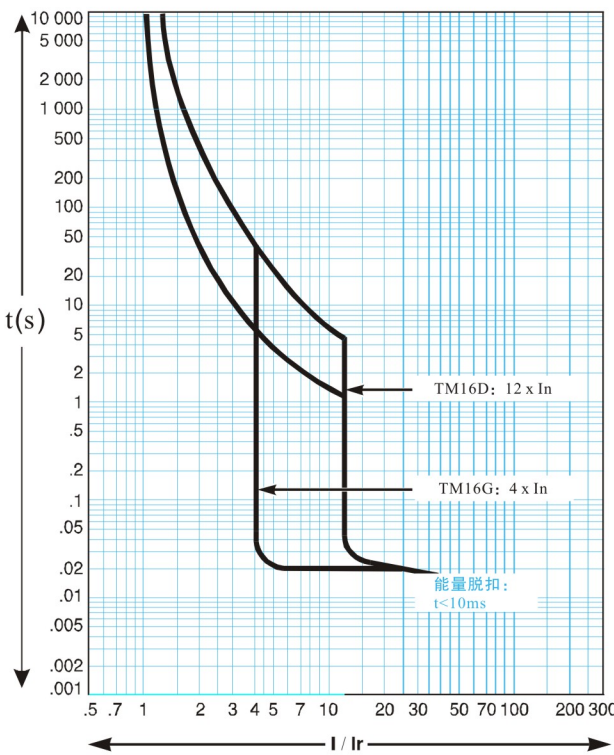
iALM5-250N direct rotating handle



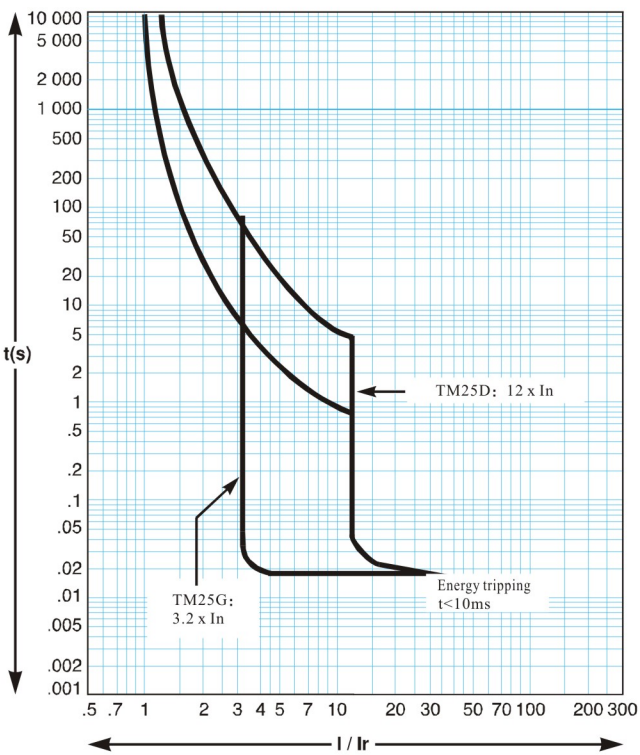
iALM5-250N extended rotating handle

TED thermomagnetic release

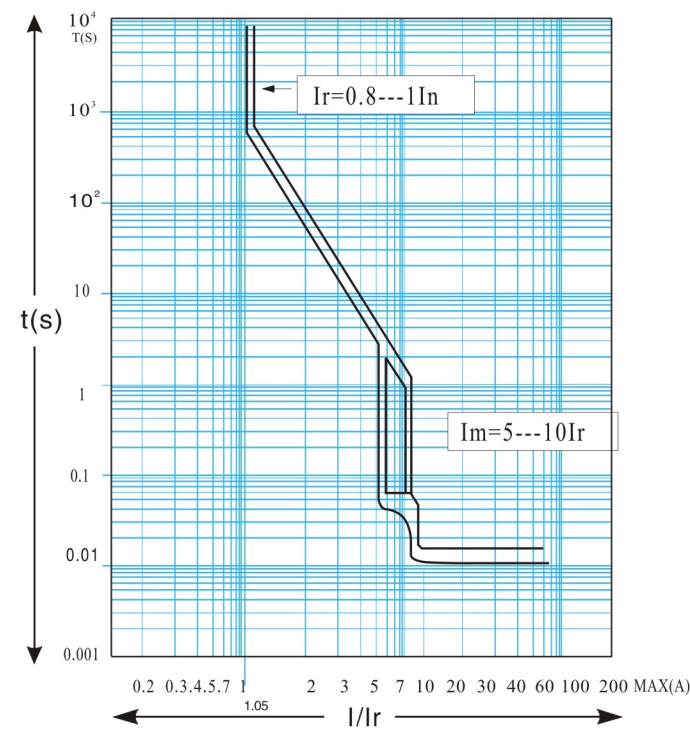
TED16D-100D



TED125D-160D

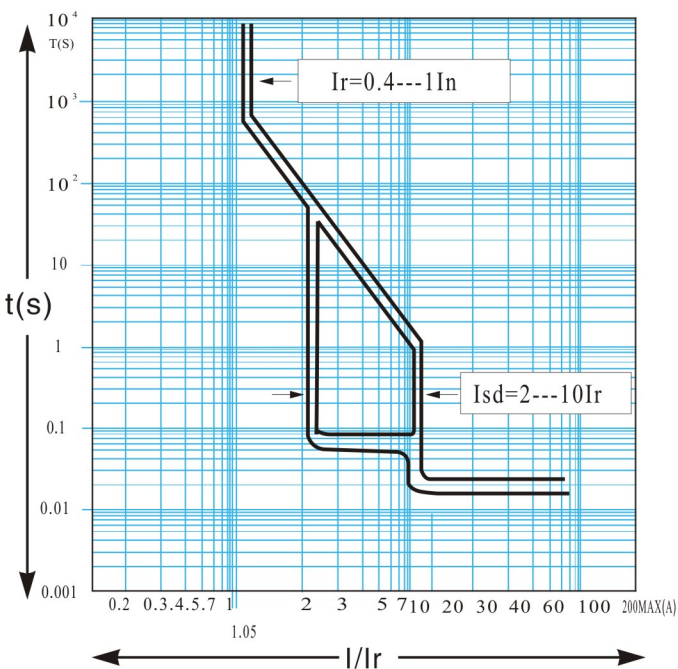


TED200D-250D

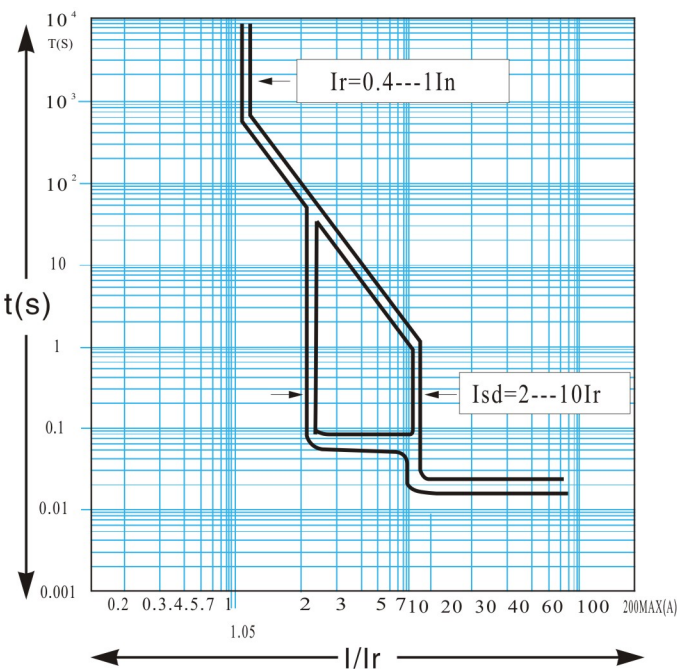


STK electronic release

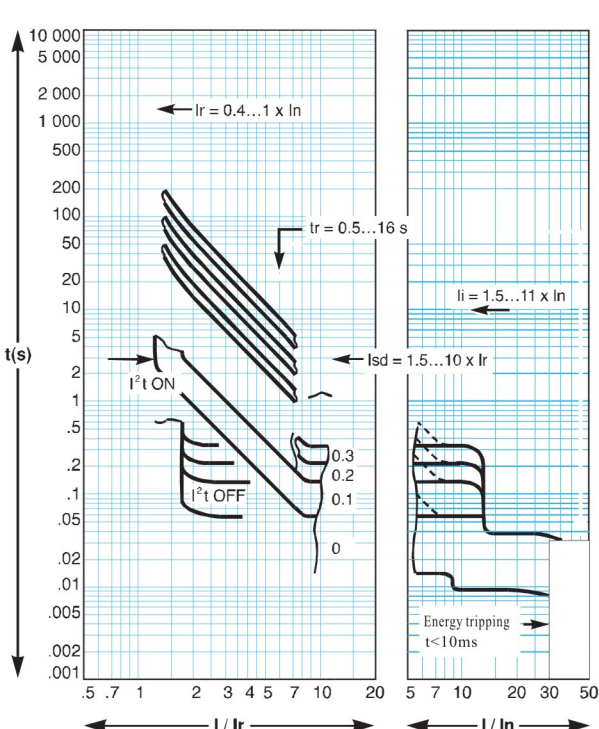
iALM5-250 STK22SE



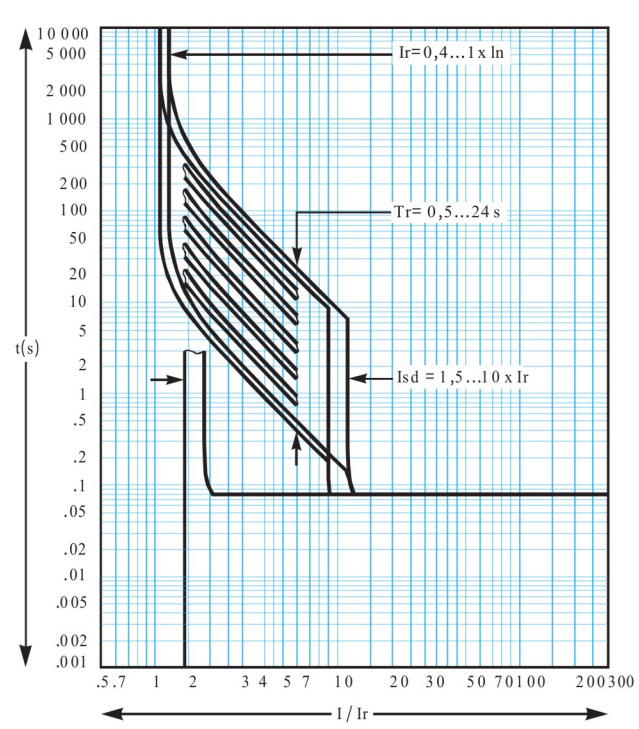
iALM5-630 STK23SE



iALM5-630 STK53UE

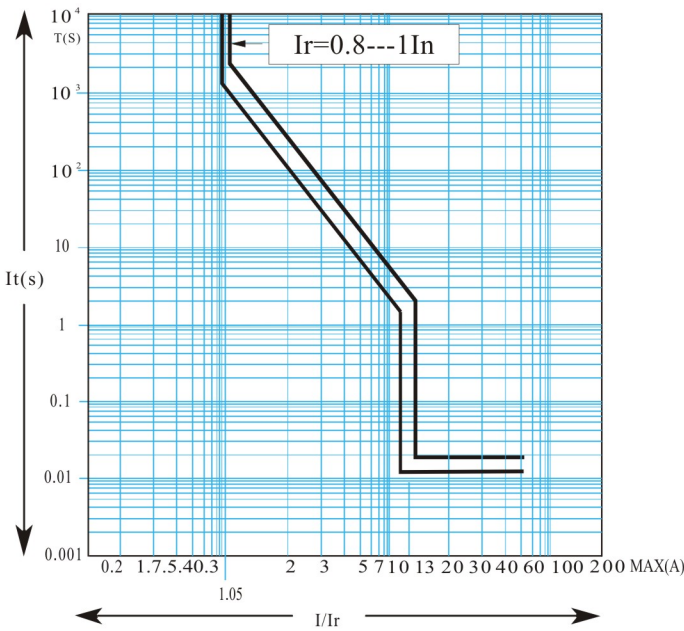


iALM5-1600 STK2.0



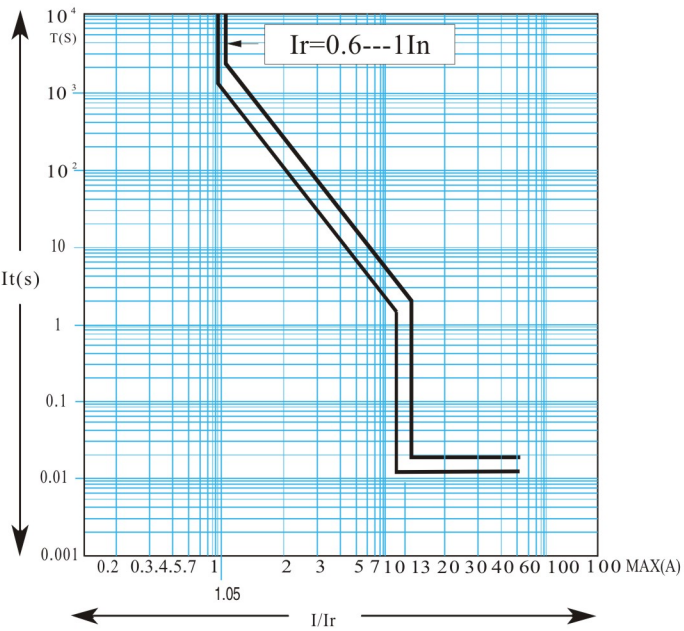
TEM electromagnetic release

iALM5-250 TEM



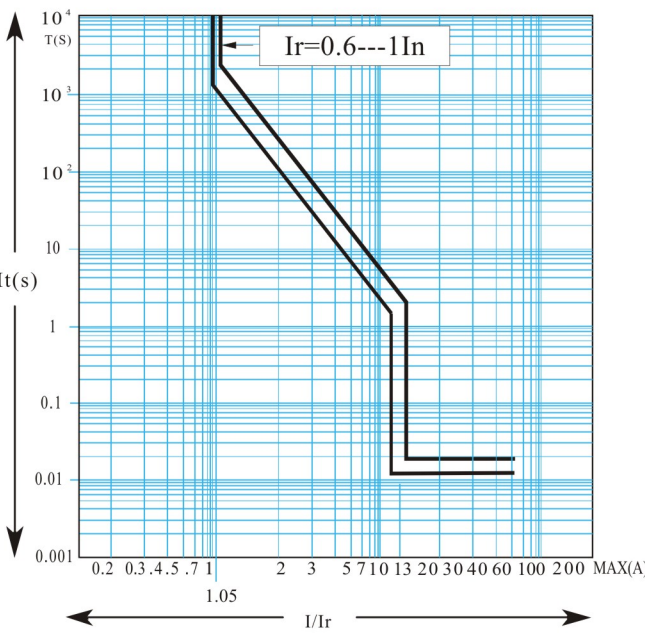
STK22ME electronic release

iALM5-250 STK22ME-24~220A



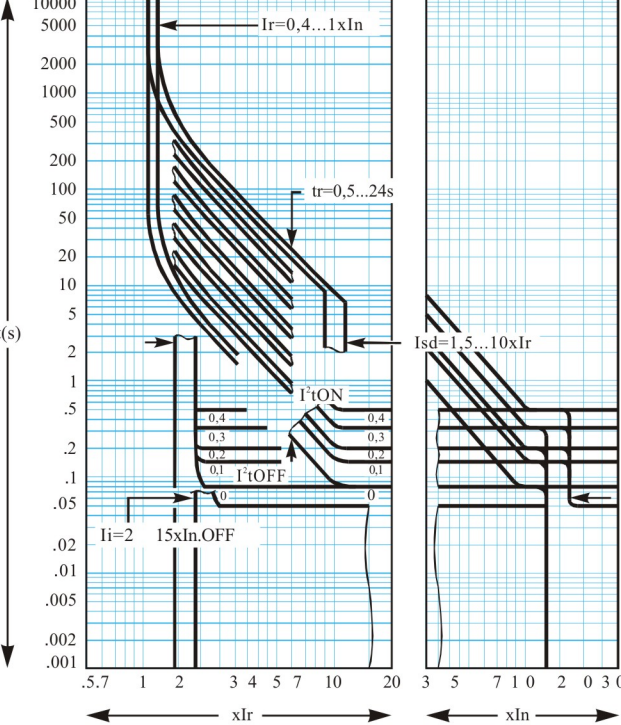
STK23ME electronic release

iALM5-630 STK23ME-400~500A



STK electronic release

iALM5-1600 STK5.0



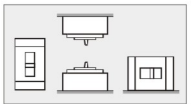
Installation

Fixed circuit breaker

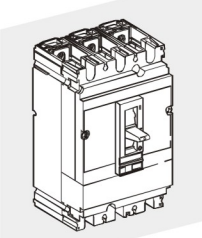
The iALM5 circuit breaker can be installed horizontally, vertically, or transversely without compromising performance. Easy installation, suitable for different types of switchgear in different countries.



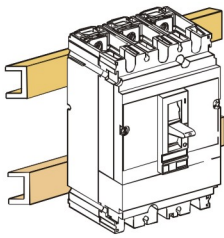
Fixed iALM5-250N



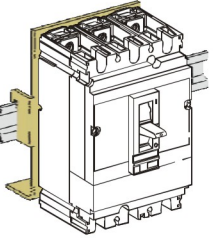
Installation method



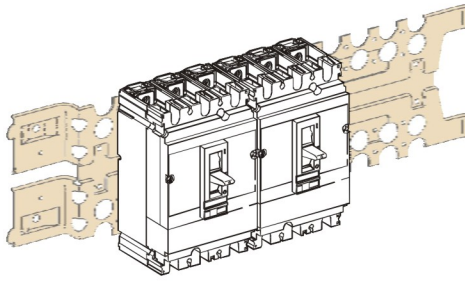
Base plate installation



DIN rail installation



DIN rail installation (with adapter)



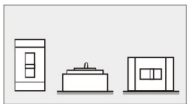
Prisma mounting plate installation

Plug-in circuit breaker

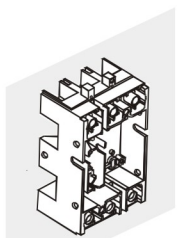
- Plug-in type
- It can be pulled out quickly for replacement of the circuit breaker
- Easier to meet future equipment needs



Plug-in iALM5-630N



Installation method



Base plate installation

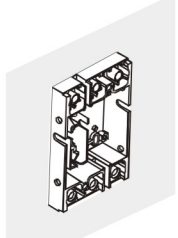
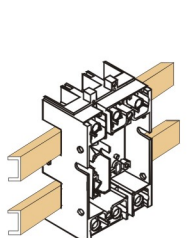


Plate threading installation



DIN rail Mounting

Connection

The plug-in base plate is equipped with terminal, and the terminal position is determined by the connection method. The terminal can be replaced by expander. The terminal is installed on the rear base plate for rear connection, and this terminal must be used for long insulated terminal. It should be equipped with a bare cable connector.

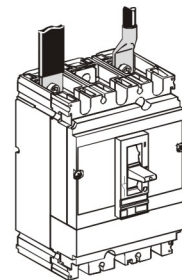
Accessory

- It prevents direct contact
- It increases interphase insulation performance

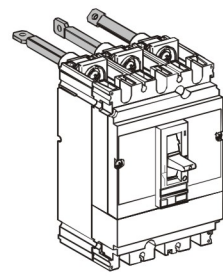
iALM5-100~630 Front and rear connection

The fixed and plug-in type of iALM5 can achieve both front and rear connections.

Fixed



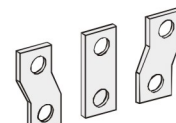
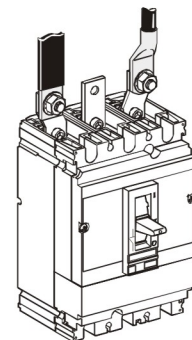
Front connection



Rear connection

Expansion type

The expander increases the spacing between terminals. They cannot be used together with terminal covers. The single unit expander increases the spacing between terminals corresponding to the incoming line equipment and provides protection against direct contact.

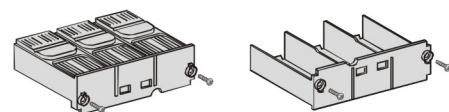


Expander

Terminal cover

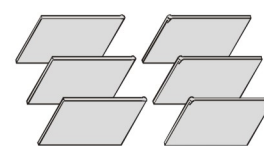
The terminal cover is an insulated accessory used to prevent direct contact with the distribution circuit.

- It achieves protection levels of IP40 and Ik07
- It enhances interphase insulation



Interphase partition

- The safety accessory provides the highest insulation between phases for power connections
- It realizes easy installation by clamping onto the box
- It can be combined with all other connecting accessories, except for terminal cover and terminal hood.

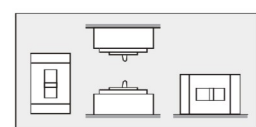


iALM5-800-1250 circuit breaker installation

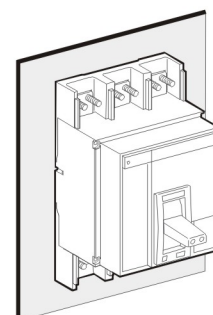
The iALM5-800-1250 circuit breaker can be installed vertically, horizontally or flat on the back, and its characteristics are not affected.



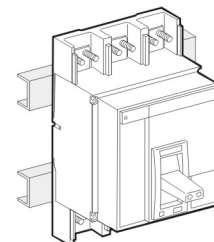
Fixed iALM5-800N



Installation method



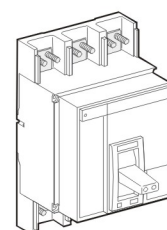
Installed on the back panel



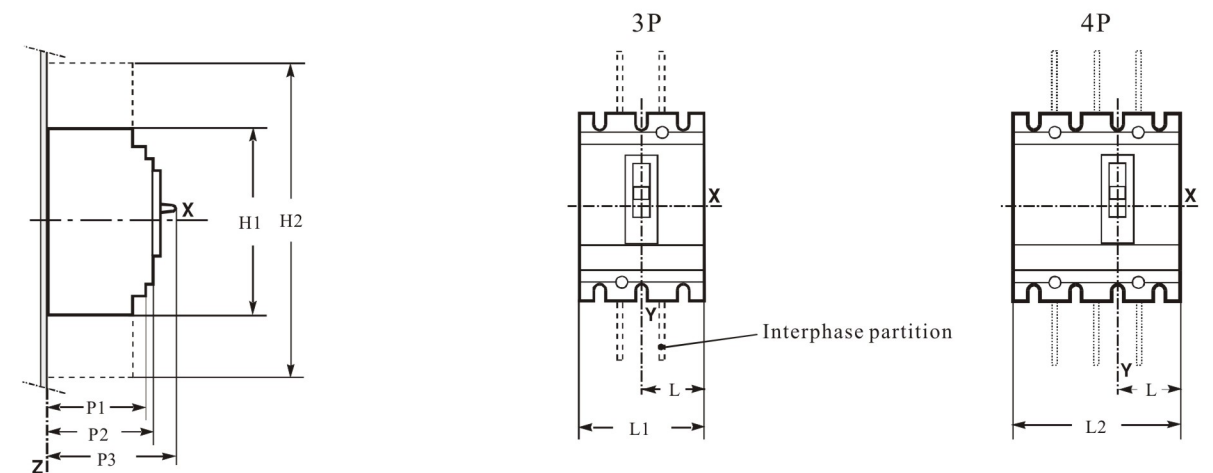
Installed on the Din rail

Connection type

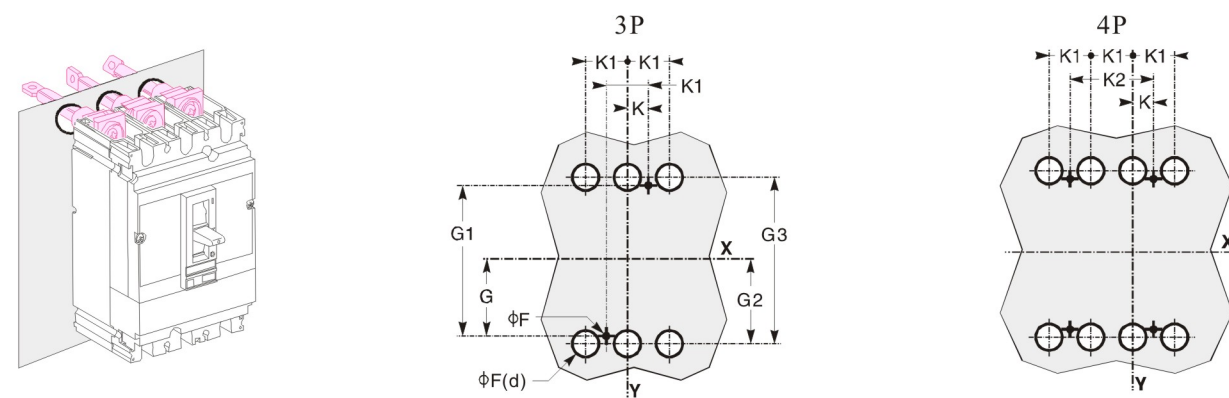
The iALM5-800-1250 fixed circuit breaker adopts front panel connection



Dimension

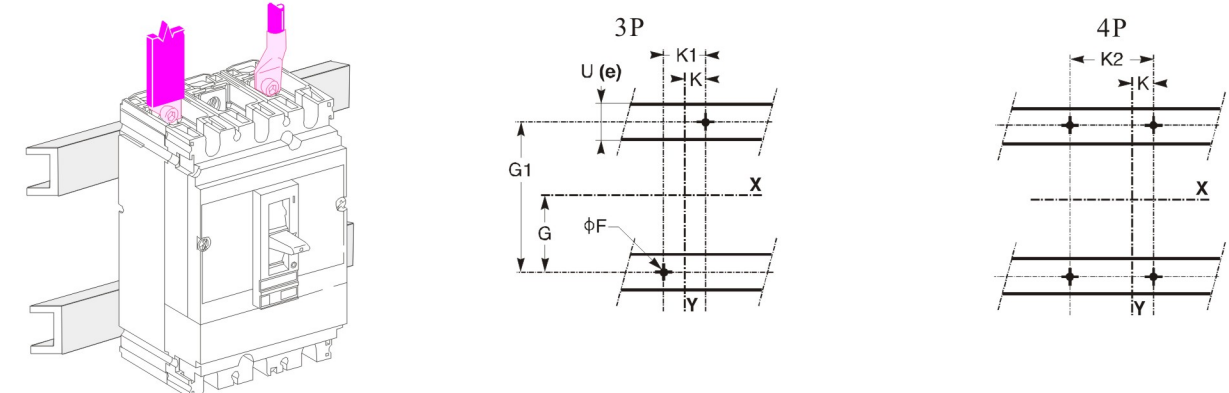


Base plate installation



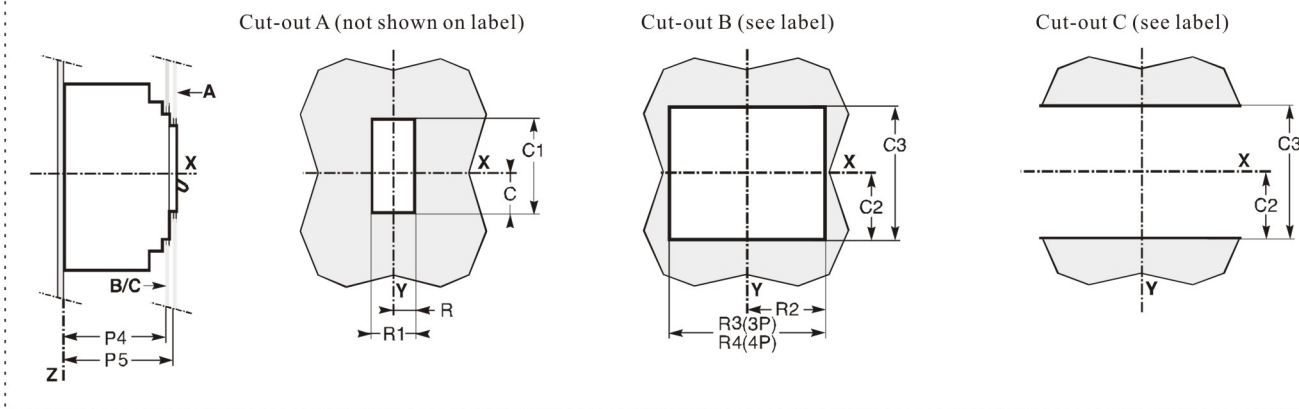
(d) For rear connection only.

DIN rail installation

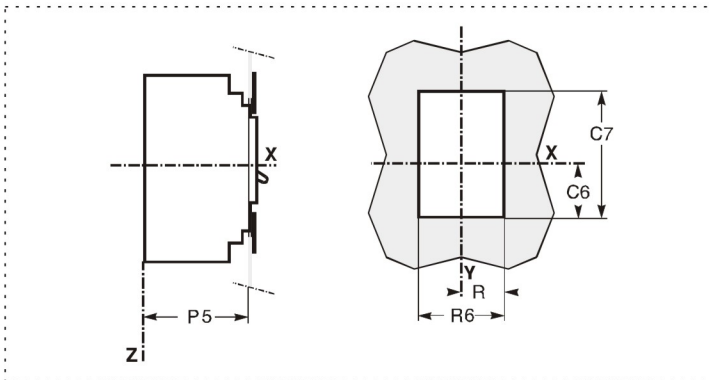


Front panel cut-out

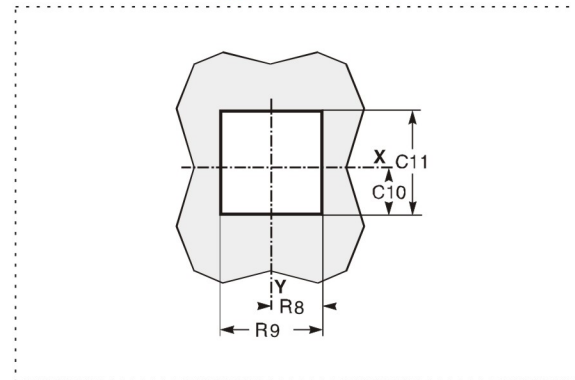
Fixed or plug-in circuit breaker



Perforated cover



Sleeve with toggle switch (see label)



Dimension (mm)

Model	C	C1	C2	C3	C6	C7	C10	C11	G	G1	G2
iALM5-100/160/250N/H	29	76	54	108	43	104	34	86	62.5	125	70
iALM5-400/630N/H	41.5	116	92.5	184	56.5	146	46.5	126	100	200	113.5

Model	G.3	H1	H2	K	K1	K2	L	L1	L2	P1	P2
iALM5-100/160/250N/H	140	161	274	17.5	35	70	52.5	105	140	73	86
iALM5-400/630N/H	227	256	476	22.5	45	90	70	140	185	95.5	111

Model	P3	P4	P5	R	R1	R2	R3	R4	R5	R6	R8
iALM5-100/160/250N/H	111 ⁽¹⁾	83	88	14.5	29	54	108	143	29	58	43
iALM5-400/630N/H	168	107	112	31.5	63	71.5	143	188	46.5	93	63

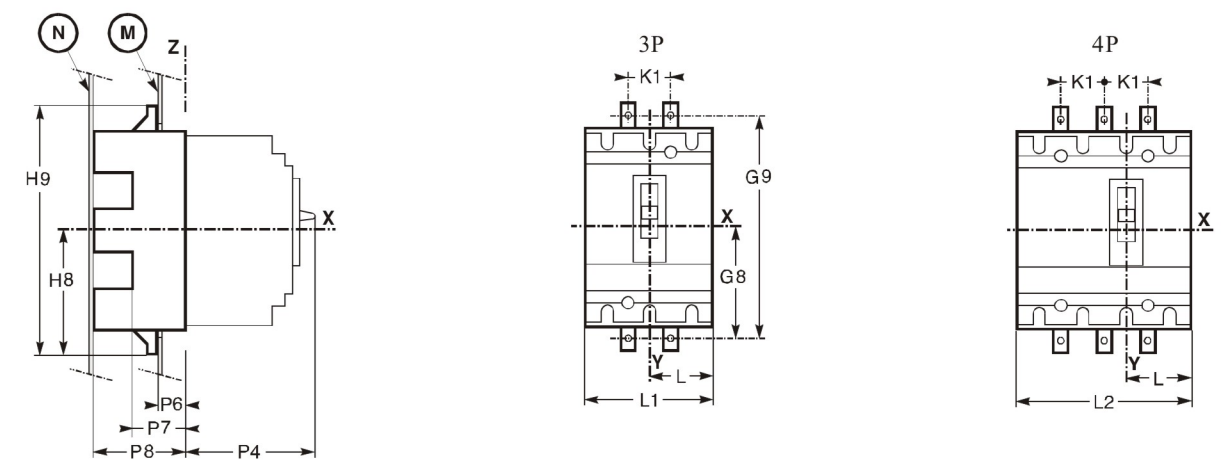
(1): P4=126mm, used for iALM5-250N/H

Model	R9	ϕF	$\phi F(d)$	$U^{(e)}$
iALM5-100/160/250N/H	86	6	22	≤ 32
iALM5-400/630N/H	126	6	32	≤ 32

(e) If automatic auxiliary connector is used, $U \leq 20\text{mm}$ (iALM5-100~250)

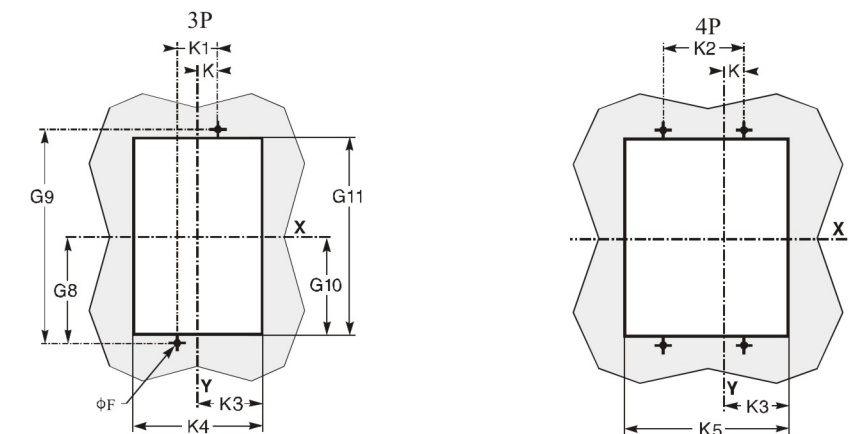
Dimension

: Plug-in type base



Installation

• Plate threading installation[®] plug-in type



DIN rail installation (plug-in)

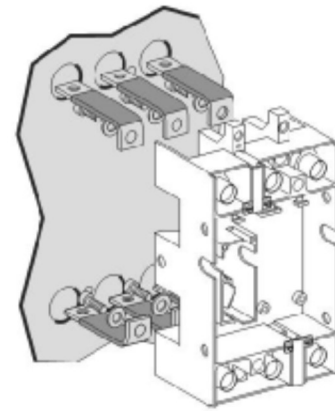
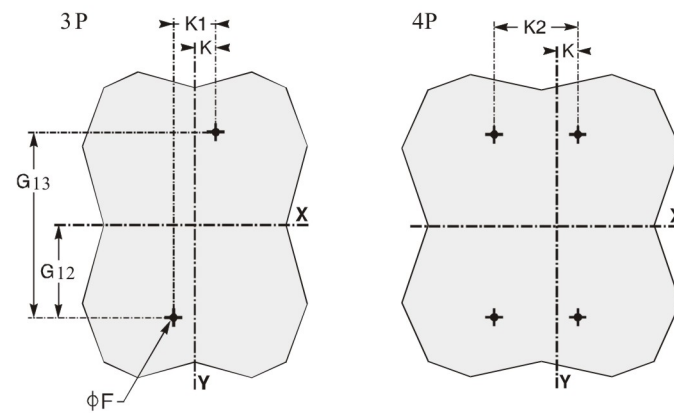


Attention: When tapping the door, the distance between the center of the circuit breaker and the door shaft $\Delta \geq 100 + (h \times 5)$.

Base plate installation®(plug-in)

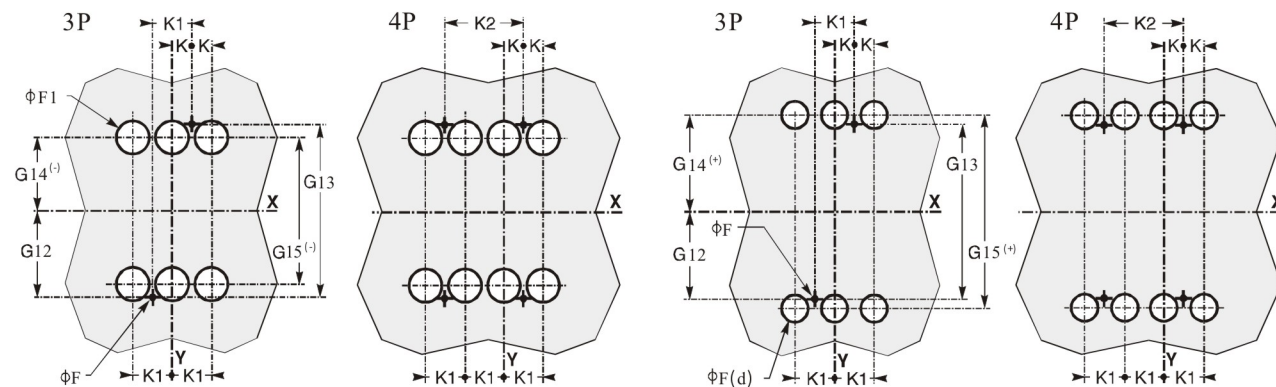
Front connection (it requires insulation plate between the base plate and the base, the insulation plate is provided with the plug-in base)

Rear connection (insulation partition must be installed between the base and base plate)



Lower limit size of rear connection

Upper limit size of rear connection



Dimension (mm)

Model	G8	G9	G10	G11	G12	G13	G14 ⁽⁻⁾	G14 ⁽⁺⁾	G15 ⁽⁻⁾	G15 ⁽⁺⁾	G16	G17	H8	H9	K	K1
iALM5-100/160/250N/H	95	190	87	174	77.5	155	69	74	138	148	37.5	75	102.5	205	17.5	35
iALM5-400/630N/H	150	300	137	274	125	250	115	116	230	242	75	150	157.5	315	22.5	45

Model	K2	K3	K4	K5	K6	K7	K8	L	L1	L2	P3	P6	P7	P8	U ⁽²⁾	ΦF
iALM5–100/160/250N/H	70	54.5	109	144	35	70	105	52.5	105	140	111 ⁽¹⁾	27	45	75	≤32	6
iALM5–400/630N/H	90	71.5	143	188	50	100	145	70	140	185	168	27	45	100	≤32	6

Model	$\Phi F(d)$	$\Phi F1$
iALM5-100/160/250N/H	24	30
iALM5-400/630N/H	33	33

(1)P3=126mm, for iALM5-250N/H

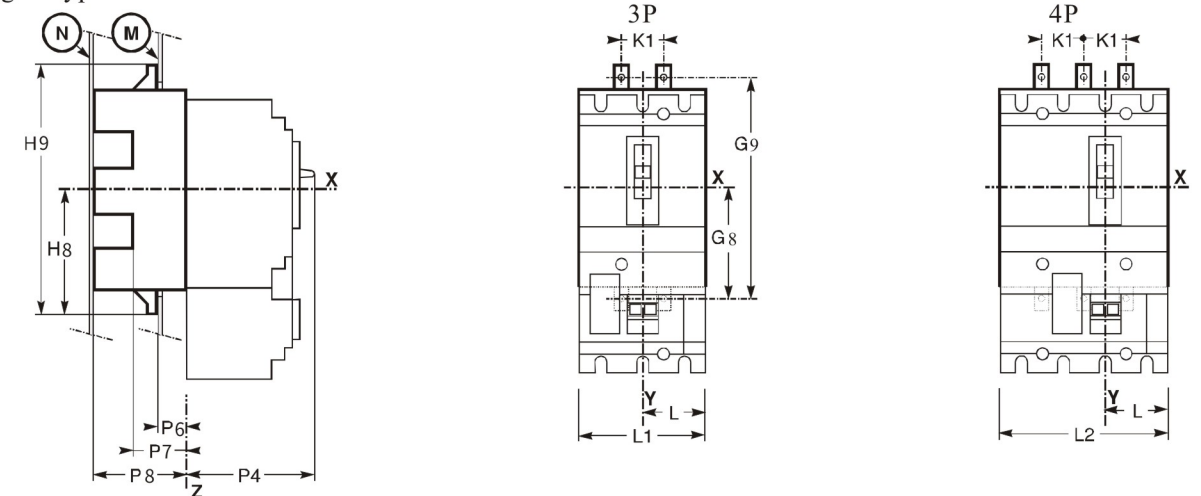
(2) If automatic auxiliary connector is used, $U \leq 20\text{mm}$ (iALM5-100~250N/H)

"+" represents the upper limit value

"-" represents the lower limit value

Dimension

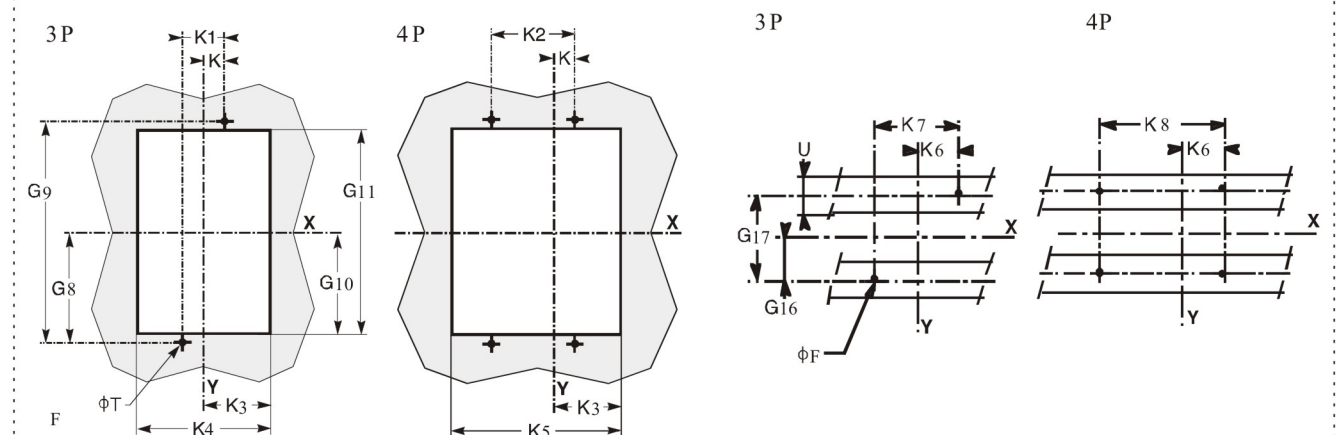
: Plug-in type



Installation

DIN rail installation (plug-in)

Plate threading installation (plug-in)



Dimension (mm)

Model	G8	G9	G10	G11	G16	G17	H8	H9	K	K1	K2
iALM5-100/160/250N/H	95	190	87	174	37.5	75	102.5	205	17.5	35	70
iALM5-400/630N/H	150	300	137	274	75	150	157.5	315	22.5	45	90

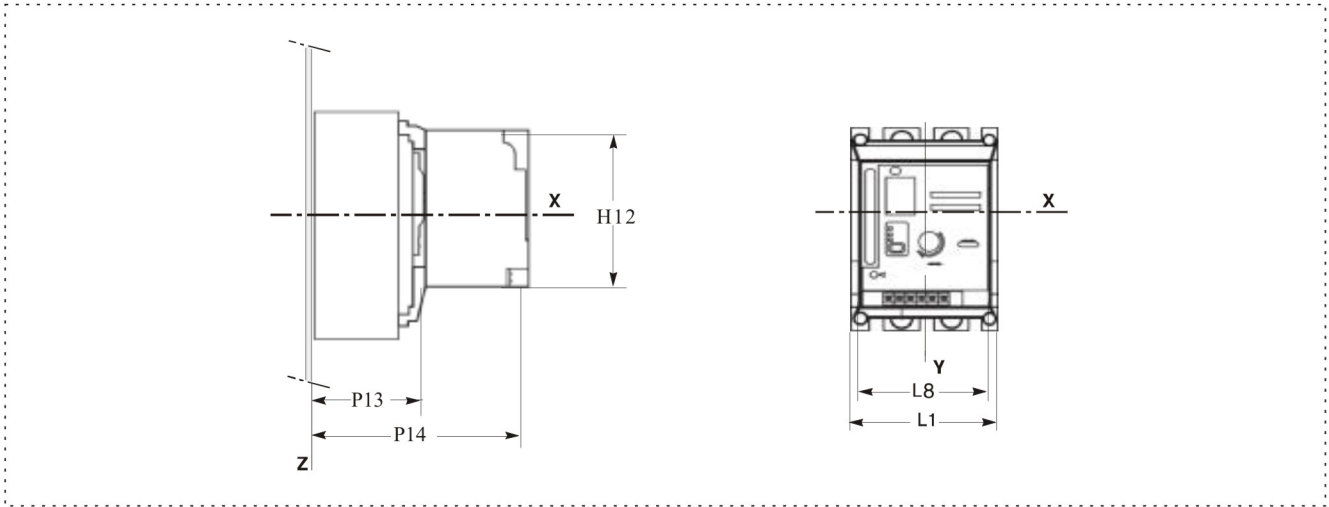
Model	K3	K4	K5	K6	K7	K8	L	L1	L2	P4	P6
iALM5-100/160/250N/H	54.5	109	144	35	70	105	52.5	105	140	111(1)	27
iALM5-400/630N/H	71.5	143	188	50	100	145	70	140	185	168	27

Model	P7	P8	ϕF	U ⁽²⁾
iALM5-100/160/250N/H	45	75	6	≤ 32
iALM5-400/630N/H	45	100	6	≤ 32

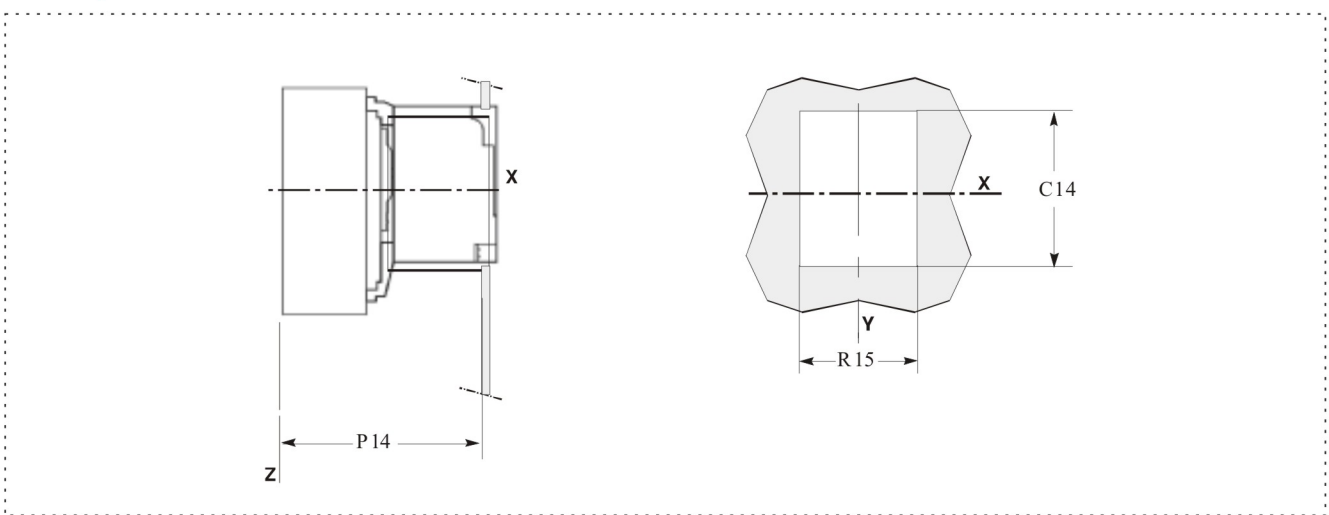
(1)P3=126mm, for iALM5-250N/H

(2) If automatic auxiliary connector is used, $U \leq 20\text{mm}$ (iALM5-100~250N/H)

Dimension



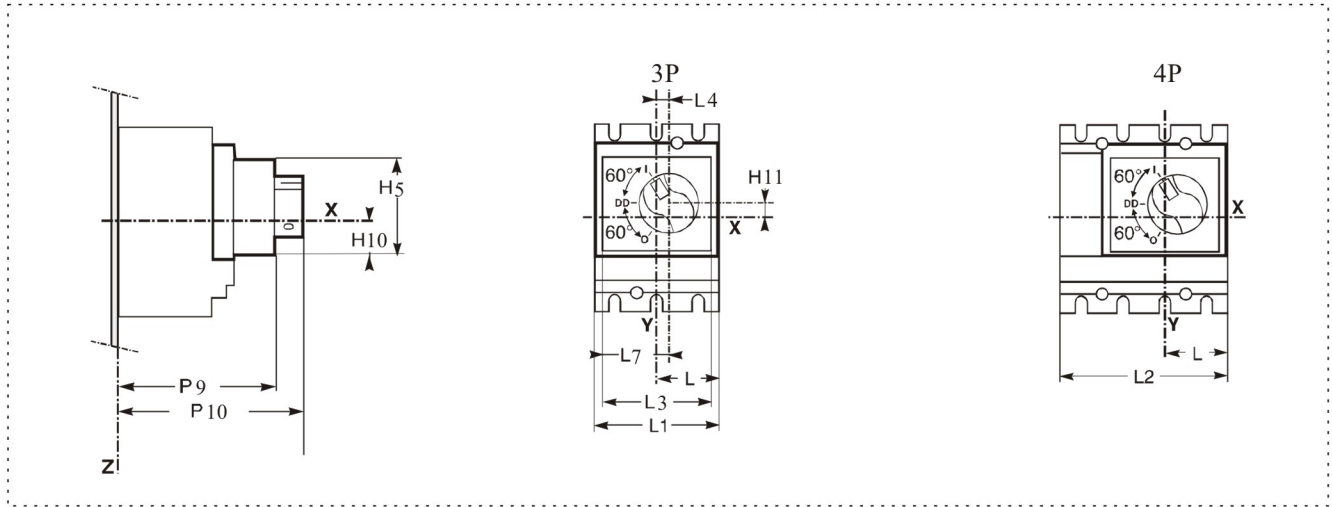
Front panel cut-out



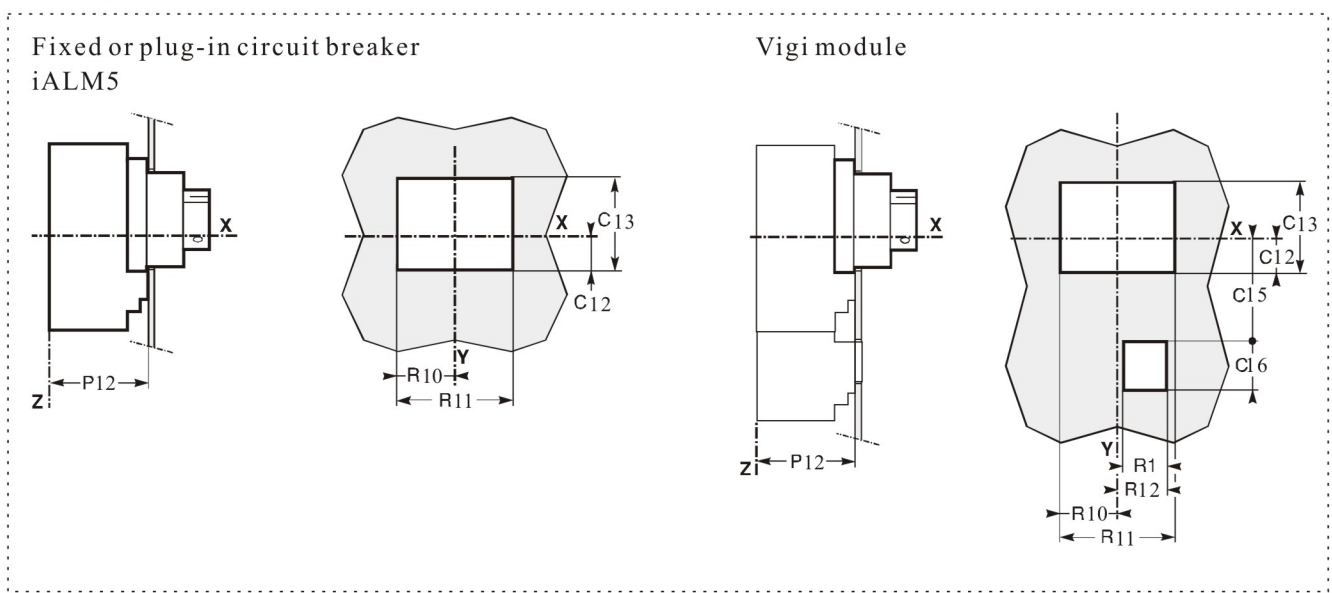
Dimension (mm)

Model	P13	P14	H12	L1	L8	C14	R15
iALM5-100/160/250N/H	98	175	115	105	120	117	110
iALM5-400/630N/H	129	243	175	140	130	180	145

Direct rotating handle

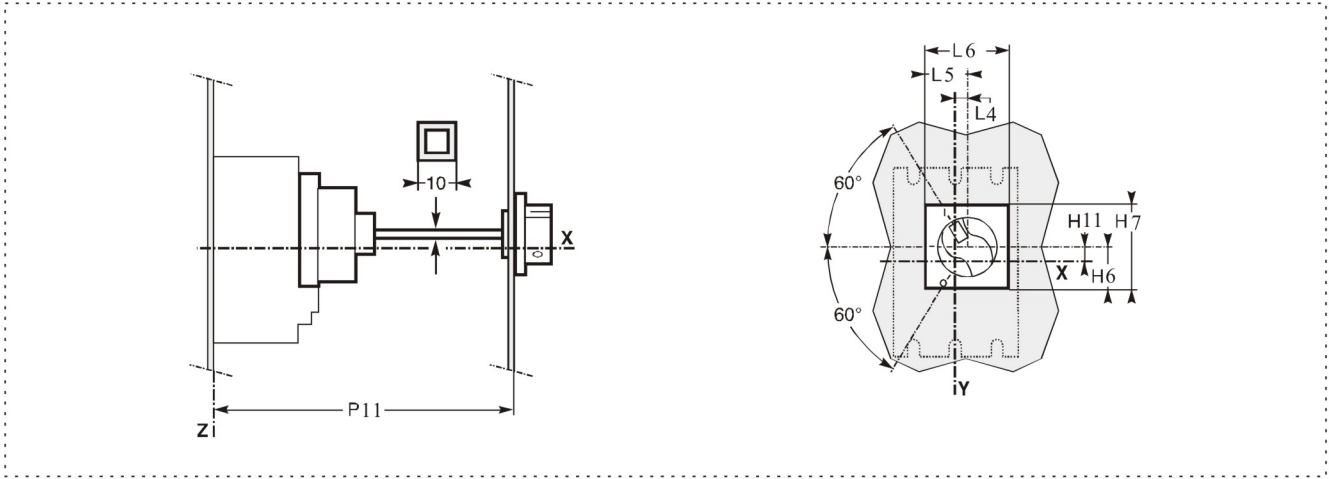


Front panel cut-out

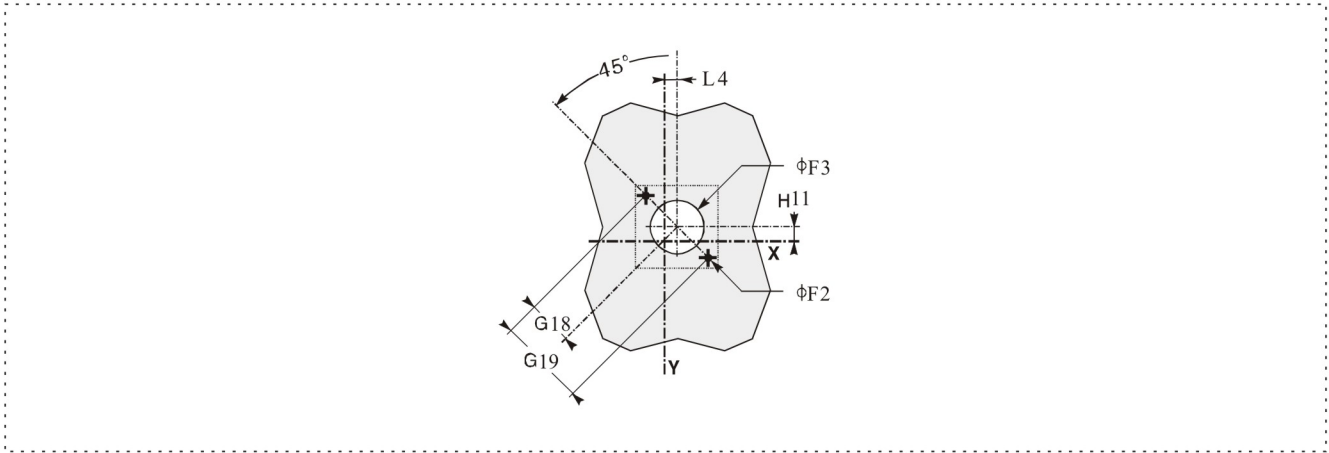


Extended rotating handle

Fixed or plug-in circuit breaker extension rod length L:
L=P11-126mm (iALM5-100 to 250)
L=P11-150mm (iALM5X-400 to 630)



Front panel cut-out



Dimension (mm)

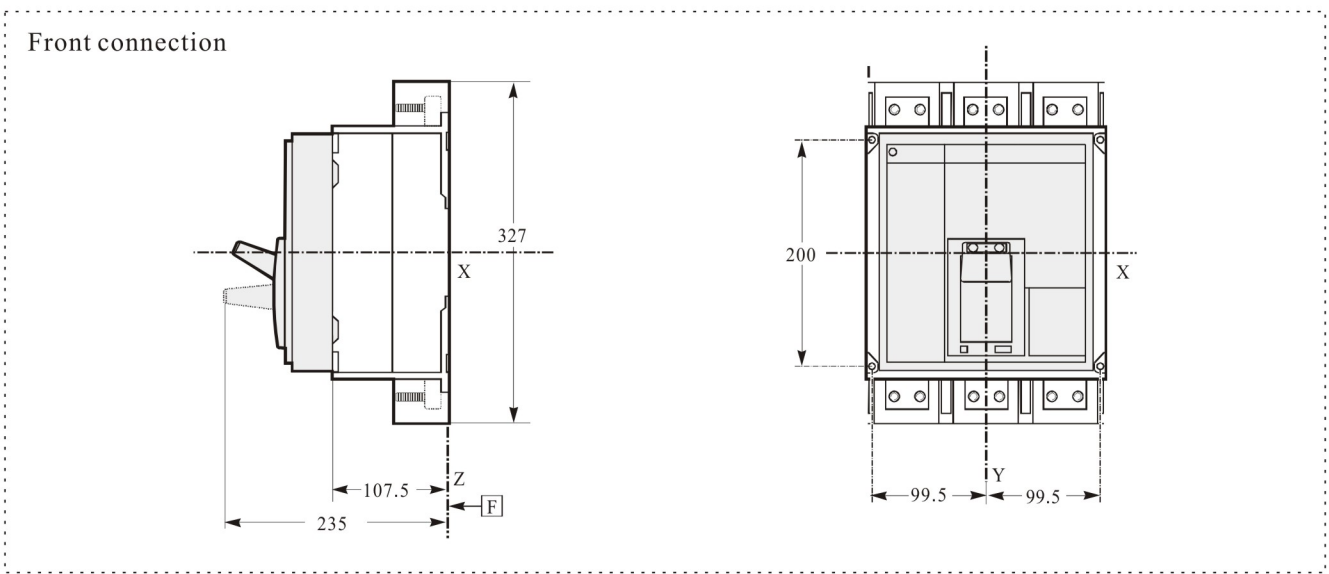
Model	C15	C16	C12	C13	G18	G19	H5	H6	H7	H10	H11	L	L1	L2	L3	L4
iALM5-100/160/250N/H	86	37	29	76	36	72	73	37.5	75	9	28	52.5	105	140	91	9.25
iALM5-400/630N/H	147.5	37	41.5	126	36	72	123	37.5	75	24.5	40	70	140	185	123	5

Model	L5	L6	L7	P9	P10	P11 ⁽¹⁾	P12	R1	R10	R11	R12	ΦF2	ΦF3
iALM5-100/160/250N/H	37.5	75	55	124	160	≥185	89	29	48.5	97	14.5	4.5	55
iALM5-400/630N/H	37.5	75	66.5	145	182	≥209	112	63	64.5	129	32	4.5	55

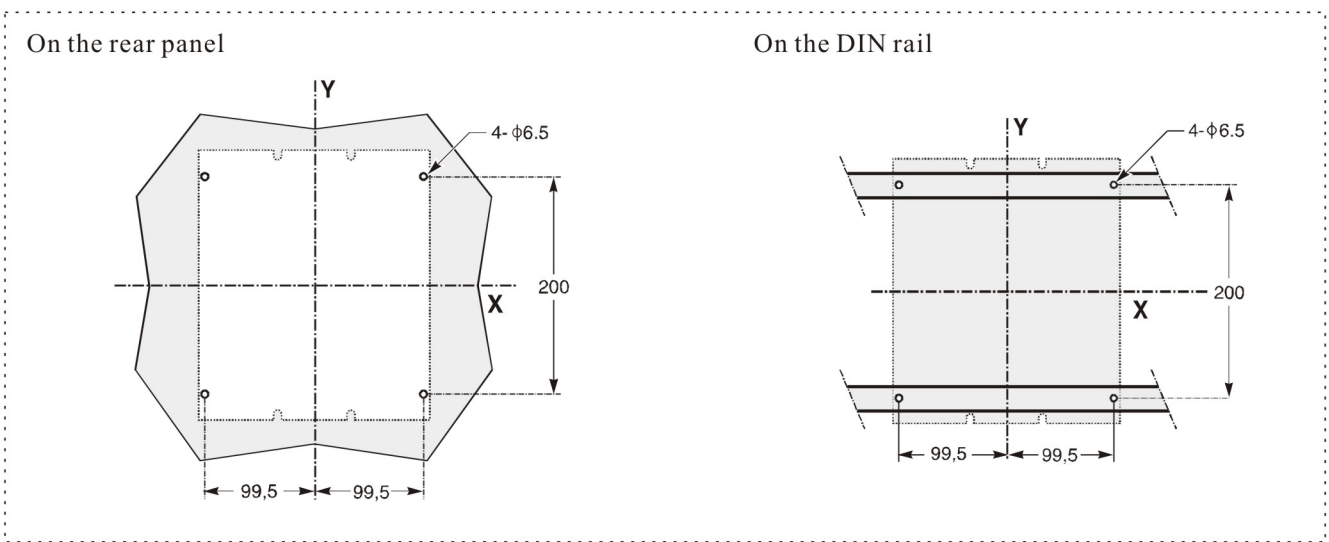
(1) iALM5-100/160/250N/H ≤ 585mm
iALM5-400/630N/H ≤ 610mm

Attention: When tapping the door, the distance between the center of the circuit breaker and the door shaft $\Delta \geq 100 + (h \times 5)$.

Manual control

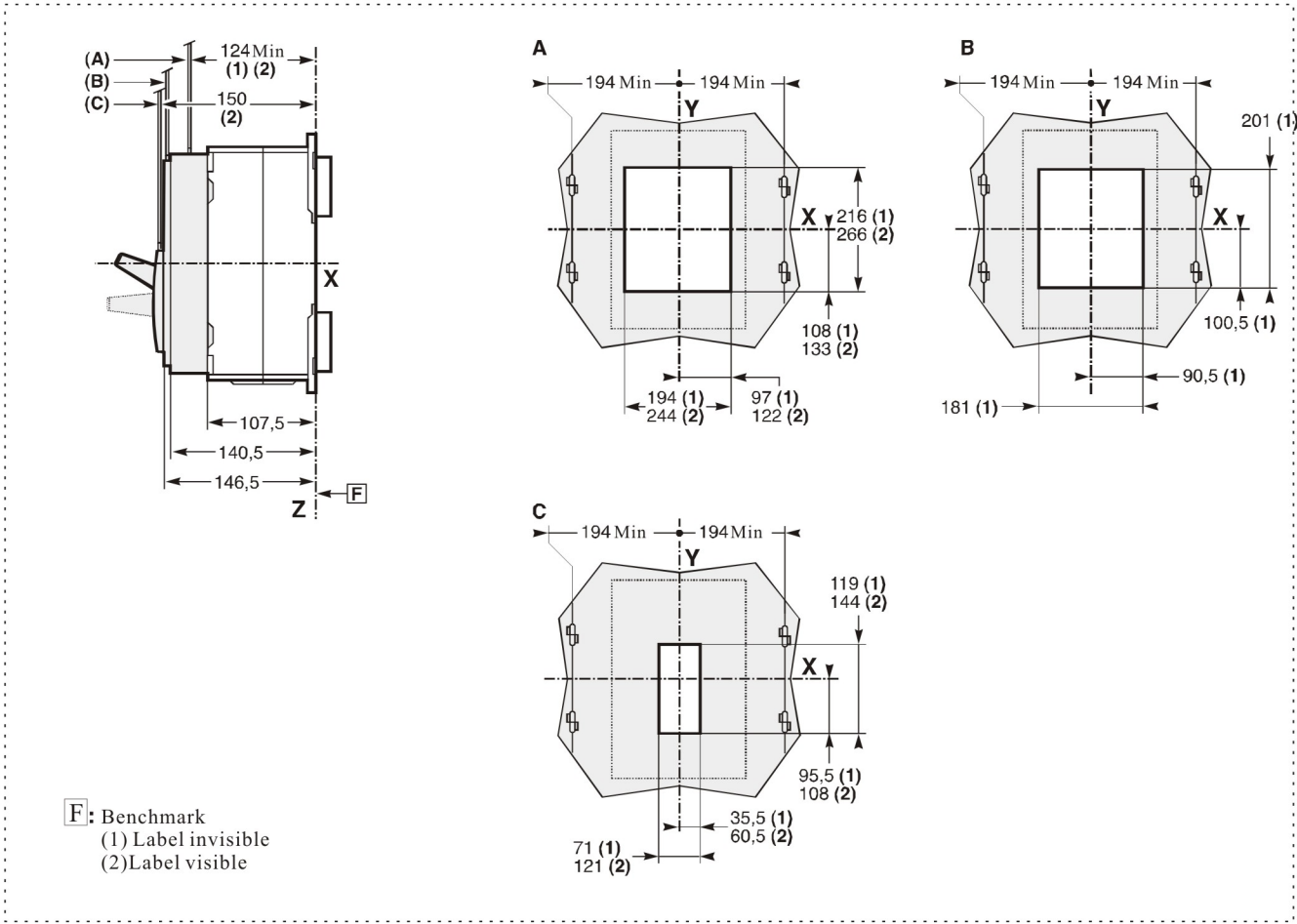


Front panel connection



Note: X and Y are the symmetry planes of the 3-pole circuit breaker,
Z is the rear plane of the circuit breaker

Front panel cut-out



Memorandum template with horizontal lines for notes.