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RELIABLE PROTECTION

AUM-DC MCCB

For Energy Saving Solutions



AUM-DC MCCB

FOR ENERGY SAVING SOLUTIONS



RELIABLE PROTECTION AGAINST OVERLOADS AND SHORT CIRCUITS

AUM5-DC MCCB provide additional safety for electrical installations in energy saving solutions, through the advanced features and functionality. AUM5-DC MCCB delivers high performance and superior breaking capacity, with an extended operating temperature range of -45°C to +70°C. It comprehensively meets the demands of solar (PV) power generation systems, providing robust protection for main circuits at string inverter outputs. Widely deployed in combiner boxes and unit substations within PV systems.



Compact Design, Saves space in renewable energy systems



Ground Fault Breaking:
20A @ DC 1500V
Critical for PV DC fault isolation



No derating at +50°C



Zero Arcing,
Enhanced operational safety



High Breaking Capacity, Reduces
damage from short-circuit currents



Polarity-Independent,
Simplified installation
with reverse feed capability

AUM-DC MCCB



Application

AUM5-DC Series DC Moulded Case Circuit Breaker is specially designed for DC electrical system with rated voltage up to DC1500V and rated current up to 800A. The Circuit Breaker can reliably protect the electrical system when the electrical loading of the system is overloaded or short-circuited, specially for PV and wind power application.

Meet the standard:

GB/T14048.1 Low-voltage switchgear and control equipment - Part 1: General Rules

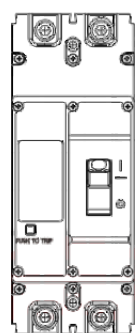
GB/T14048.2 Low-voltage switchgear and control equipment - Part 2: Circuit breakers

Normal Working Conditions And Installation Conditions

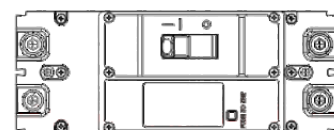
- The elevation of the installation site can't exceed 2000m;
- The temperature is not higher than +70°C, not lower than -45°C(Over +40°C, use it through capacity reduction, the specific need to negotiate with the manufacturer);
- Atmospheric conditions: such as 90% at 20°C, and taking into account the condensation on the surface due to temperature changes, When the surrounding temperature is 40°C, the relative humidity of the atmosphere does not exceed 50%, and a higher relative humidity is allowed at a lower temperature. The pollution level is 3;
- Installation category is III;
- Installation magnetic field: The magnetic field of the installation position does not exceed 5 times the earth magnetic field in any direction;
- In a medium without explosion risk, and there is no gas and conductive dust sufficient to corrode metal and destroy insulation in the medium;
- Where there is no snow erosion;
- Installation conditions: It can be installed horizontally or vertically. There should be no significant impact or vibration at the installation place. It should not be installed in inflammable and explosive places.
- The circuit breaker has the isolation function, the symbol is .

Method of Mounting

This series of circuit breakers is generally installed vertically but can also be installed horizontally (refer to the picture below).



Vertical installation



Horizontal installation

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Product Code System & Explanations

AUM5 - DC - 630 / 3 300 630A		Installation Method	
MCCB type	AUM5	Front connection (optional)	
DC Application	DC	Rated current	
PV Application	PV		
Frame current		Accessories code	
Inm=250	250		
Inm=315	315		
Inm=400	400		
Inm=630	630		
Inm=800	800		
Operation Mode		Number of poles	
No	None		
Motor mechanism	P		
Rotary handle	Z	2P	
		3P	

Release Method and Accessory Code

Release method	Accessory code								
	Shunt release	Auxiliary contact	Alarm contact	Shunt release auxiliary contact	Shunt release alarm contact	Two sets of auxiliary contacts	Auxiliary contact Alarm contact	Two sets of auxiliary contacts Alarm contact	Shunt release Auxiliary contact Alarm contact
Electromagnetic release	210	220	208	240	218	260	228	268	248
Double release	310	320	308	340	318	360	328	368	348

Note:

1. The first digit of the release method and the internal accessory code indicates that 2 represents an electromagnetic with 00 indicating no accessory. (instantaneous) release, and 3 represents a thermal-magnetic (compound) release. The last two digits represent the internal accessory code
2. For AUM5-DC-630, and specifications 248 and 348 within AUM5-DC-630, there is one pair of auxiliary contacts (one normally open and one normally closed). Specifications 268 and 368 have three pairs of auxiliary contacts (meaning three normally open and three normally closed).

The Cross-sectional Area of The Connecting Wire and The Corresponding Rated Current

Rated current (A)	63	80	100	125	160	180,200,225	250	280,300	315,350	400
Cross-sectional area(mm ²)	16	25	35	50	70	95	120	185	185	240

Rated current (A)	Copper Bar		Copper Bar	
	Root number	Cross sectional-area of each wire (mm ²)	Root number	Cross sectional-area of each wire (mm ²)
500	2	150	2	30x5
630	2	185	2	30x5
700	2	240	2	50x5
800	2	240	2	50x5

Product Name			AUM5-DC-250		AUM5-DC-315		AUM5-DC-400		AUM5-DC-630		AUM5-DC-800		
Number of Poles			2P/3P		2P/3P		2P/3P		2P/3P		2P/3P		
													
Technical Data													
Frame current			250		315		400		630		800		
Rated current(In)		A	63,80,100,125,140,160,180,200,225,250		280,300,315		250,315,350,400		400A, 500A,630A		630A, 700A,800A		
Rated insulation voltage (Ui)		V	1500V		1500V		1500V		1500V		1500V		
Rated impulse withstand voltage (Uimp)		kV	12kV		12kV		12kV		12kV		12kV		
Type			DC	PV	DC	PV	DC	PV	DC	PV	DC	PV	
Rated operational voltage (Ue)		V	2P	DC250V, DC500V, DC750V DC1000V, DC1500V	DC250V, DC500V, DC750V DC1000V, DC1500V		DC250V, DC500V, DC750V DC1000V, DC1500V		DC250V, DC500V, DC750V DC1000V, DC1500V		DC250V, DC500V, DC750V DC1000V, DC1500V		
			3P	DC1500V	DC1500V		DC1000V, DC1500V		DC1000V, DC1500V		DC1000V, DC1500V		
Rated Ultimate Short-circuit Breaking Capacity(Icu)		kA	2P	DC1000V: 15 DC1500V: 5	DC250V, DC500V: 50 DC750V, DC1000V: 25 DC1500V: 7.5		DC1000V: 15 DC1500V: 5		DC250V, DC500V: 50 DC750V, DC1000V: 25 DC1500V: 10		DC250V, DC500V: 25 DC750V, DC1000V: 15 DC1500V: 10		
			3P	DC1500V: 20	DC1000V, DC1250V, DC1500V: 20		DC1500V: 20		DC1000V: 30 DC1500V: 25		DC1000V: 40 DC1500V: 30		DC1000V: 30 DC1500V: 25
Rated service short-circuit breaking capacity(Ics)		kA	100% Icu		100% Icu		100% Icu		100% Icu		100% Icu		
Connection Method			2P (Pic1) 3P (Pic2)		2P (Pic1) 3P (Pic2)		2P (Pic1) 3P (Pic3)		2P (Pic1) 3P (Pic3)		2P (Pic1) 3P (Pic3)		
Isolation Function			Available		Available		Available		Available		Available		
Utilization Category		Cat.	A		A		A		A		A		
Mechanical life		Times	20000		20000		15000		20000		15000		
Electrical life		Times	1500		1500		1000		1500		800		
Arcing Distance		mm	≥50		≥50		≥100		≥100		≥100		
Dimensions		mm	2P	200x73x135		200x73x135		270x130x156		270x130x156		270x130x156	
			3P	200x107x135		200x107x135		270x182x156		270x182x156		270x182x156	
Reference Ambient Temperature		℃	40		40		40		40		40		

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Hold Characteristics

The circuit breaker's thermal-actuated release has a unique inverse time-delay characteristic; the electromagnetic release is instantaneous in action, and its characteristics are detailed in the table below

• For power distribution

Rated Current (A)	Thermal release(ambient temperature +40°C)		Tripping current of Electromagnetic release
	Non-operation time at 1.05 times rated current (cold state) in hours	Operation time at 1.3 times rated current (hot state) in hours	
63	≥ 1	≤ 1	10In $\pm$ 20%
63<In $\leq$ 800	≥ 2	≤ 2	

• Power loss table

Model	Current when energized(A)	Total Power Loss for Three-phase/Four-phase(W)
AUM5-DC-250	250A	40
AUM5-DC-315	315A	43
AUM5-DC-400	400A	115
AUM5-DC-630	630A	187
AUM5-DC-800	800A	262

• Derating Factor for Rated Operating Current of Thermal-Actuated Release with Changing Ambient Temperature

Model	Ambient Temperature						
	+40°C	+45°C	+50°C	+55°C	+60°C	+65°C	+70°C
AUM5-DC-250	1.0In	1.0In	1.0In	0.95In	0.93In	0.91In	0.88In
AUM5-DC-315	1.0In	1.0In	1.0In	0.95In	0.93In	0.91In	0.88In
AUM5-DC-400	1.0In	1.0In	1.0In	0.93In	0.91In	0.89In	0.85In
AUM5-DC-630	1.0In	1.0In	1.0In	0.92In	0.90In	0.89In	0.83In
AUM5-DC-800	1.0In	1.0In	1.0In	0.92In	0.89In	0.85In	0.80In

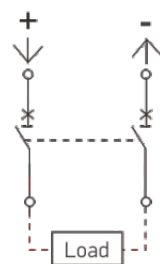
Note: The product can operate normally when the ambient temperature is below 50°C, and there is no derating

• Altitude Derating

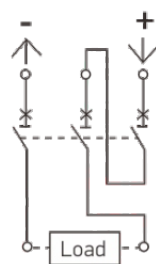
If the altitude exceeds 2000m of the applicable working environment, the electrical performance of the circuit breaker can be referred to the table below

Altitude(M)	2000	2500	3000	3500	4000	4500	5000
Maximum Operating Current Coefficient	1	1	0.98	0.95	0.93	0.91	0.89
Maximum Operating Voltage(V)	1	1	1	1	1	1	1
Power Frequency Withstand Voltage	1	1	1	1	1	1	1
Insulation Voltage	1	1	1	1	1	1	1

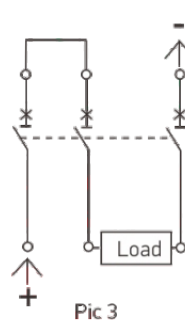
Wiring Diagram



Pic 1



Pic 2



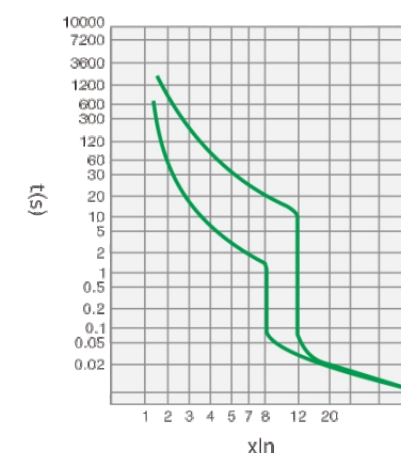
Pic 3

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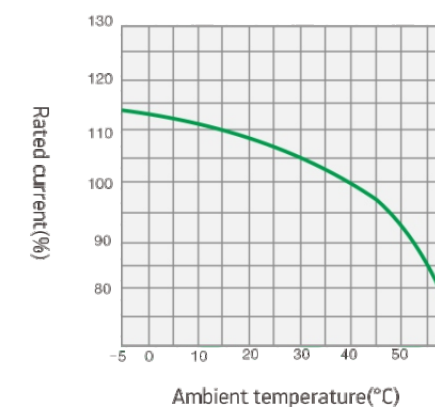
Tripping Characteristic Curve

Note: The characteristic curve is measured under cold conditions and three-phase load

AUM5-DC-250/315

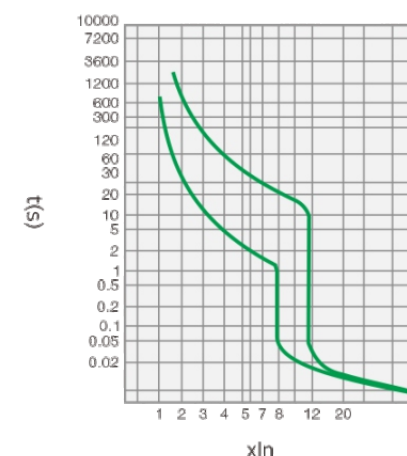


AUM5-DC-250/315 Tripping curve

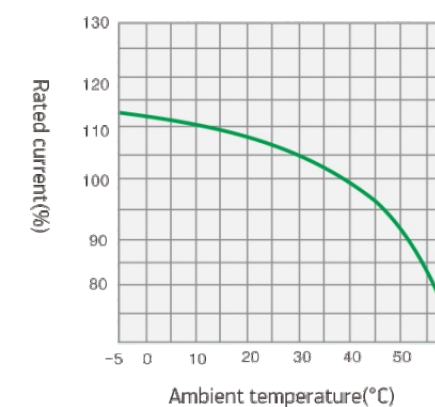


AUM5-DC-250/315 Temperature compensation curve

AUM5-DC-400

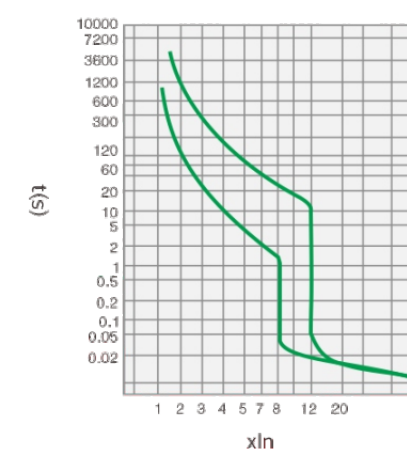


AUM5-DC-400 Tripping curve

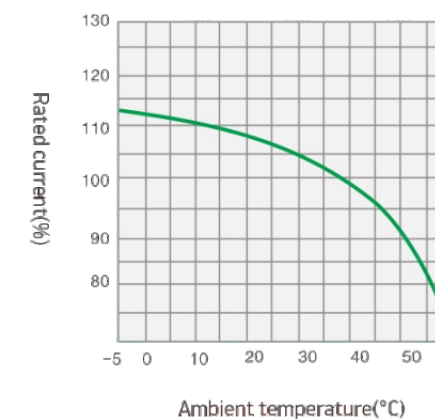


AUM5-DC-400 Temperature compensation curve

AUM5-DC-630/800



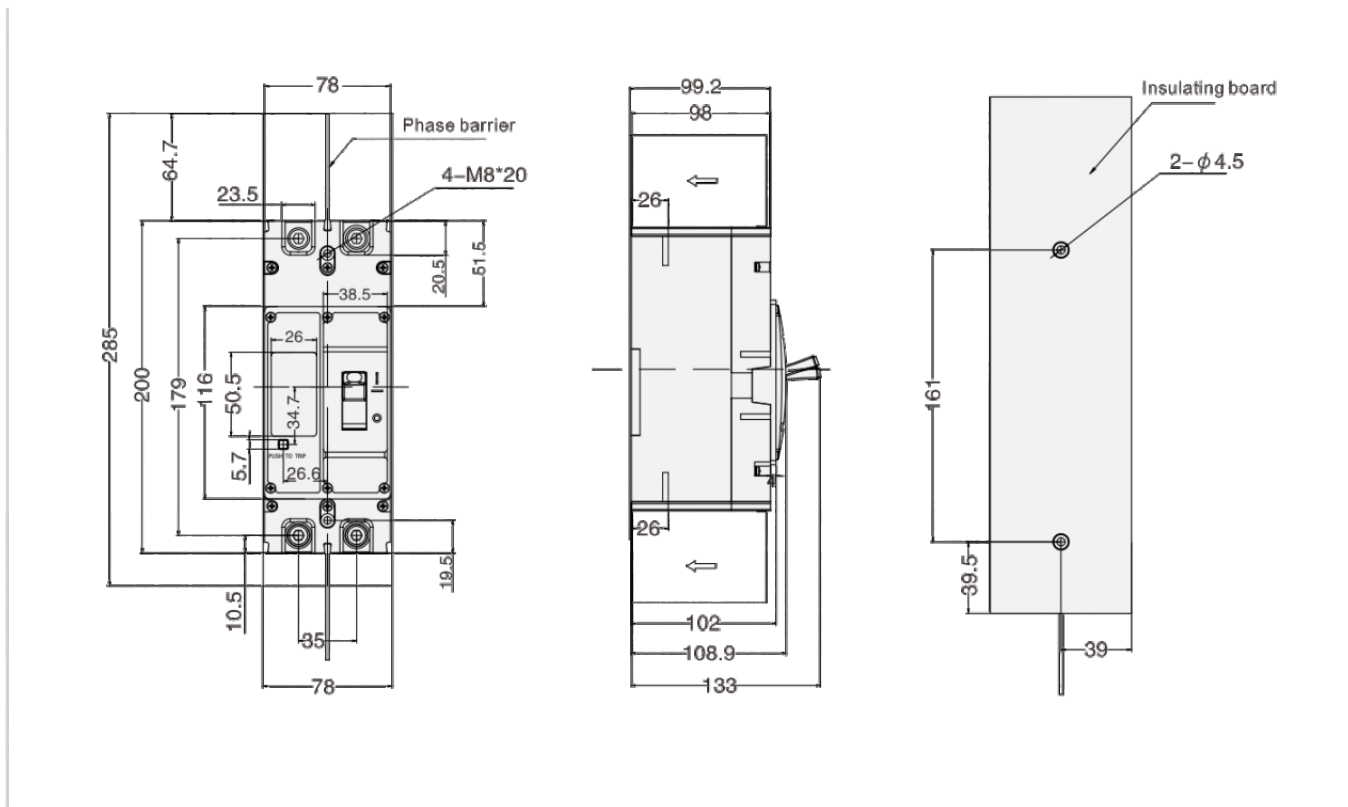
AUM5-DC-630/800 Tripping curve



AUM5-DC-630/800 Temperature compensation curve

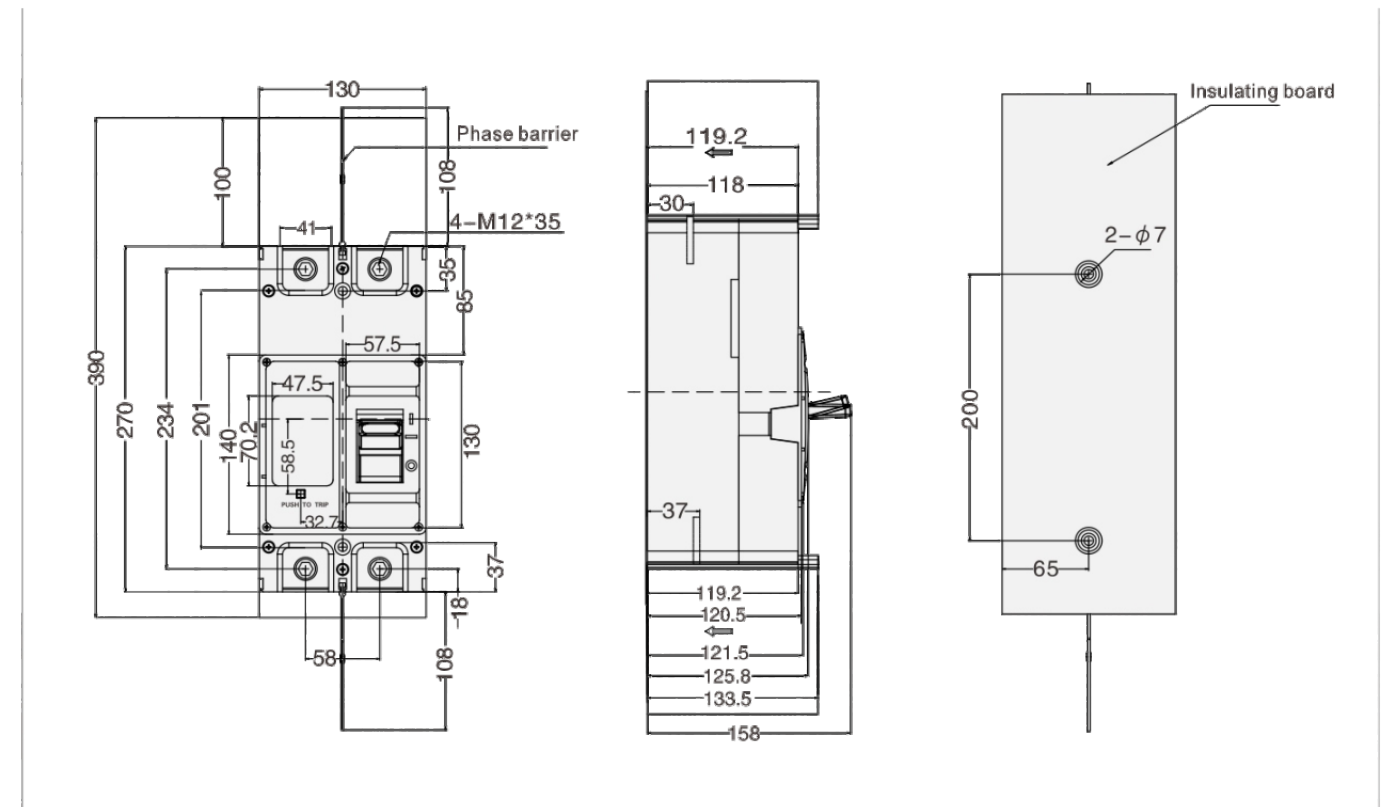
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AUM5-DC-250/315 Mounting Dimension of Front Connection(2P)

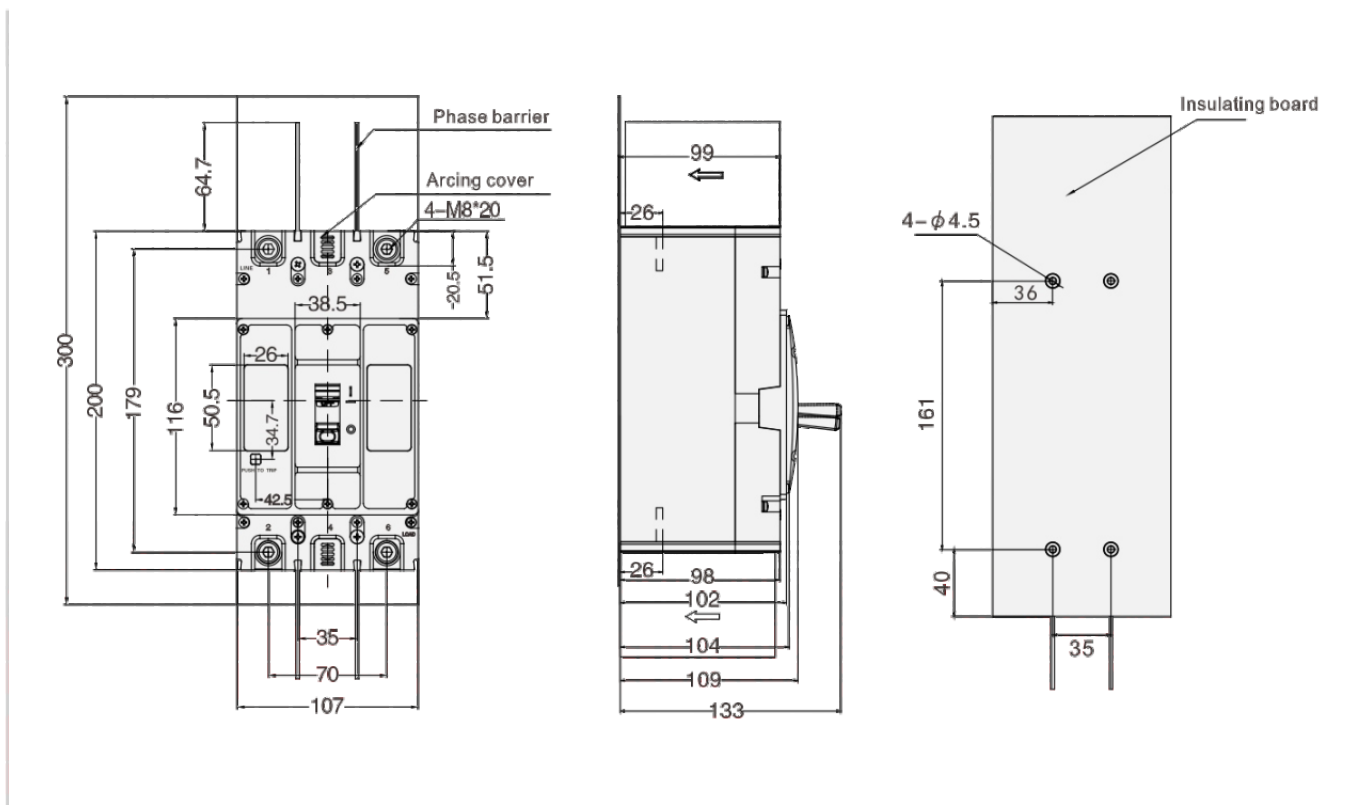


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AUM5-DC-400/630/800 Mounting Dimension of Front Connection(2P)



AUM5-DC-250/315 Mounting Dimension of Front Connection(3P)



AUM5-DC-400/630/800 Mounting Dimension of Front Connection(3P)

