

TRDM5PV Series Solar DC Moulded Case Circuit Breaker (PV MCCB)

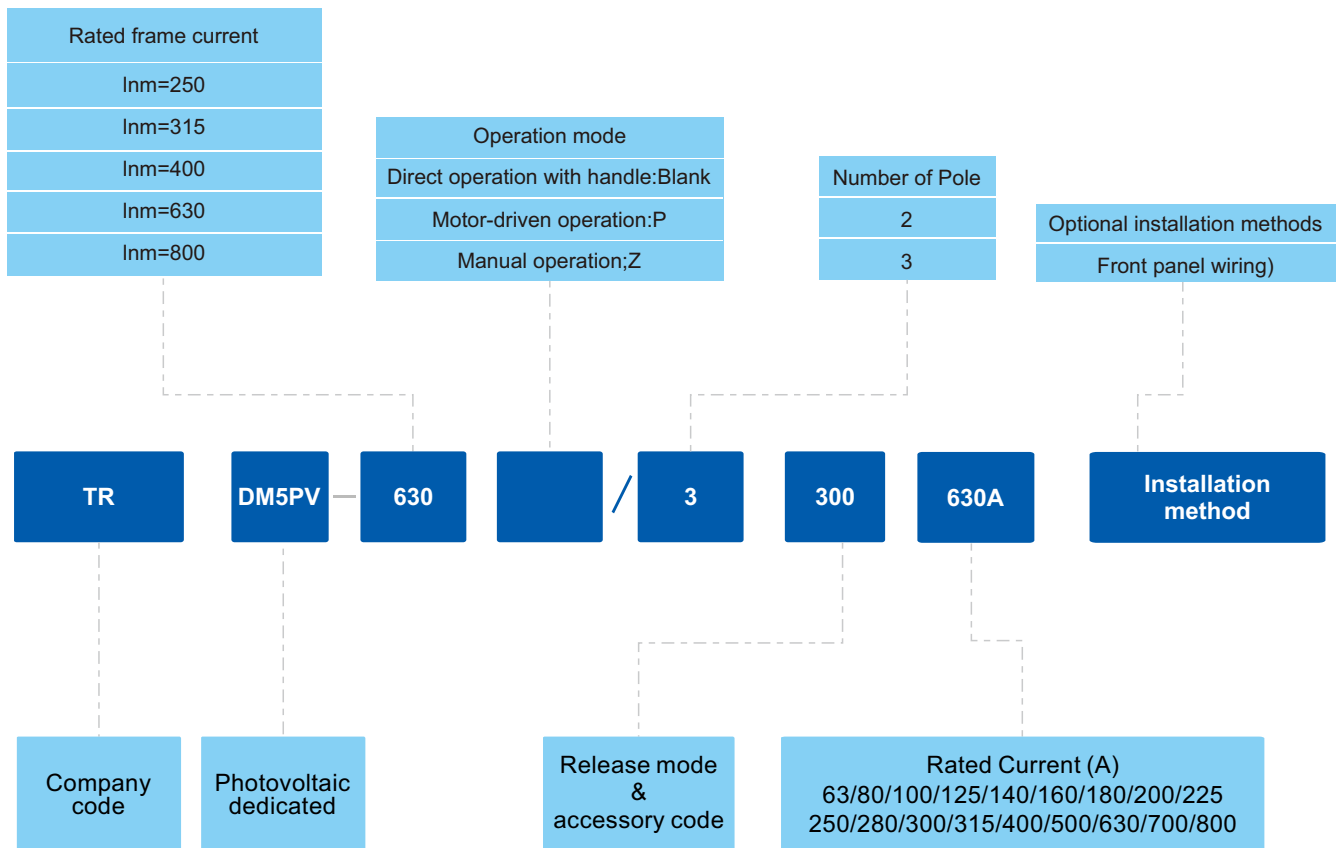


TRDM5PV Series DC dedicated circuit breakers (hereinafter referred to as circuit breakers) are used in DC power grid circuits with rated voltages DC250V~DC1500V and rated operating currents 63A~800A. This circuit breaker has overload long delay and short circuit protection functions and is used to distribute electric energy, and protect circuits and power equipment from overload, short circuit and other fault hazards. The product complies with GB/T14048.1, GB14048.2 & EC60947-2.

Application Conditions

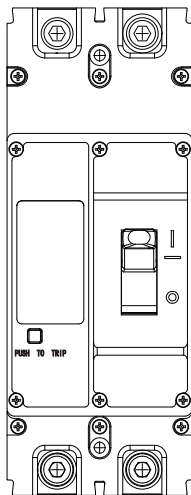
1. Not over altitude 2000m
2. The allowable ambient temperature is not higher than +70°C and not lower than -45°C
(If the temperature exceeds +40°C, use with reduced capacity, please consult with the manufacturer for details)
3. Atmospheric conditions: For example, 90% at 20°C. Taking into account the condensation on the surface of the product due to temperature changes, when the ambient temperature is 40°C, the relative humidity of the atmosphere does not exceed 50%. A higher relative humidity is allowed at lower temperatures.
4. The pollution degree: Level 3
5. The installation class: III
6. Installation magnetic field: The magnetic field at the installation location does not exceed 5 times the geomagnetic field in any direction
7. In a medium without explosion hazard, and there is no gas or conductive dust in the medium that is enough to corrode metal and destroy insulation.
8. Without wind and snow erosion
9. Installation conditions: It can be installed horizontally and vertically. There should be no significant impact and vibration at the installation location, and it must not be installed in flammable and explosive places.
10. The circuit breaker has an isolation function and the symbol is

Model choose

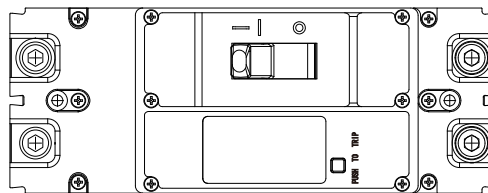


Installation

VM series MCCB is generally installed vertically, but can also be installed horizontally (as picture below)



Vertical installation



Horizontal installation

Lead section & corresponding rated current

Rated Current(A)	63	80	100	125	160	180/200/225	250	280/300	315/350	400
Lead section(mm ²)	16	25	35	50	70	95	120	185	185	240

Rated Current(A)	Copper Bar		Copper Bar	
	Number of wires	Each Lead section(mm ²)	Number of wires	Each Lead section(mm ²)
500	2	150	2	30X5
630	2	185	2	30X5
700	2	240	2	50X5
800	2	240	2	50X5

Specifications

Model		TRDM5PV				
Rated Frame		250	315	400	400V	
Rated Current(A)	I _n	63A、 80A、 100A、 125A、 140A、 160A、 180A、 200A、 225A、 250A	280A、 300A、 315A	250A、 315A、 350A、 400A	250A、 315A、 350A、 400A	
Rated Insulated Voltage(V)		U _i	1500V			
Rated impulse withstand voltage(kV)		U _{imp}	12kV			
Type		PV				
Rated Working Voltage(V)	U _e	2P	DC1000V、 DC1500V			
		3P	DC1000V、 DC1250V、 DC1500V		DC1000V、 DC1500V	
Rated short-circuit breaking capacity(kA)	I _{cu}	2P	DC1000V： 15 DC1500V： 5	DC1000V： 25 DC1500V： 7.5	DC1000V： 25 DC1500V： 10	DC1000V： 50 DC1250V、 DC1500V： 20
		3P	DC1500V： 20	DC1000V、 DC1250V、 DC1500V： 25	DC1000V： 40 DC1500V： 30	—
Rated operating short-circuit breaking capacity(kA)		I _{cs}	100%I _{cu}			
Wiring method		2P（ Chart1）、 3P（ Chart2 ）				2P（ Chart1）
Isolation function		YES				
Usage Category		Cat.	A			
Mechanical life		Times	20000		15000	
Electrical life		Times	1500		1000	800 500
Arcing distance		mm	≧50		≧100	
Dimensions	mm	2P	200×73×135		270×130×158	275×106×178
		3P	200×107×135		270×182×158	
Base ambient temperature		℃	40			

Model		TRDM5PV		
Rated Frame		630	630A	800
Rated Current(A)		400A、500A、630A	400A、500A、630A	630A、700A、800A
Rated Insulated Voltage(V)	U _i	1500V		
Rated impulse withstand voltage(kV)	U _{imp}	12kV		
Type		PV		
Rated Working Voltage(V)	U _e	2P	DC1000V、DC1500V	
		3P	DC1000V、DC1250V、DC1500V	DC1000V、DC1500V
Rated short-circuit breaking capacity(kA)	I _{cu}	2P	DC1000V : 15 DC1500V : 10	DC1000V : 50 DC1250V、DC1500V : 20 DC1000V : 25 DC1500V : 10
		3P	DC1000V : 40 DC1500V : 30	— DC1000V : 40 DC1500V : 30
Rated operating short-circuit breaking capacity(kA)		I _{cs}	100%I _{cu}	
Wiring method		2P(Chart1)、3P(Chart2)	2P(Chart1)	2P(Chart1)、3P(Chart3)
Isolation function		YES		
Usage Category		Cat.	A	
Mechanical life	Times	20000		15000
Electrical life	Times	1500		800500
Arcing distance		mm	≥100	≥100
Dimensions	mm	2P	270×130×158275×106×178	270×130×158
		3P	270×182×158—	270×182×158
Base ambient temperature		℃	40	

Connection

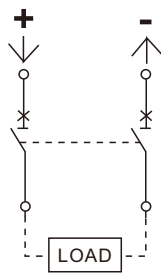


Chart1

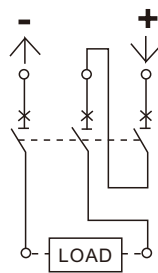


Chart2

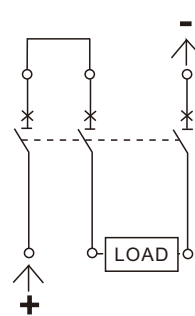


Chart3

Characteristic

The thermal tripper of the circuit breaker has the characteristics of inverse time limit; the electromagnetic tripper is instantaneous action(as below)

For distribution

Rated current of MCCB(A)	Thermal tripper(Ambient temperature +40℃)		Electromagnetic tripper operating current(A)
	1.05In(cold) inactive time(h)	1.3In(hot) action time(h)	
63	≤1	≤1	10In±20%
63<In≤800	≤2	≤2	

Power loss

Model	Power current(A)	3P/4P Total power loss(W)
TRDM5PV-250	250A	40
TRDM5PV-315	315A	43
TRDM5PV-400	400A	115
TRDM5PV-400V	630A	105
TRDM5PV-630	800A	187
TRDM5PV-630V	630A	127
TRDM5PV-800	800A	252

Derating coefficient of rated operating current of thermal tripper as the ambient temperature changes

Model	Ambient temperature						
	+40℃	+45℃	+50℃	+55℃	+60℃	+65℃	+70℃
TRDM5PV-250	1.0In	1.0In	1.0In	0.95In	0.93In	0.91In	0.88In
TRDM5PV-315	1.0In	1.0In	1.0In	0.95In	0.93In	0.91In	0.88In
TRDM5PV-400	1.0In	1.0In	1.0In	0.93In	0.91In	0.89In	0.85In
TRDM5PV-630	1.0In	1.0In	1.0In	0.92In	0.90In	0.89In	0.83In
TRDM5PV-800	1.0In	1.0In	1.0In	0.92In	0.89In	0.85In	0.80In

Note: When the ambient temperature is lower than 50℃, the product can be used normally without derating

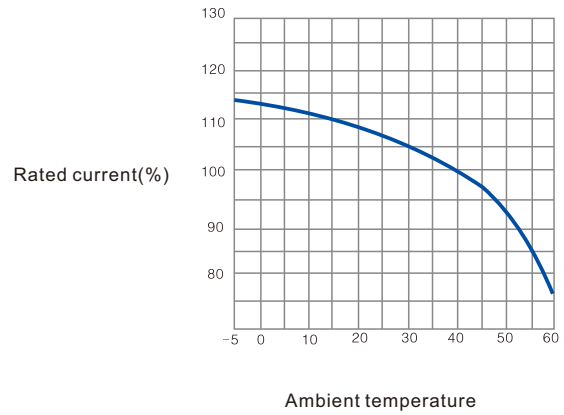
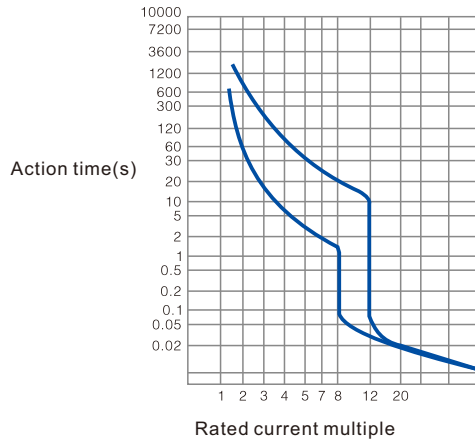
Altitude derating capacity

The electrical performance of the circuit breaker when the altitude exceeds 2000m for the applicable working environment(as below)

Altitude(M)	2000	2500	3000	3500	0.93	4500	5000
Maximum operating current coefficient	1	1	0.98	0.95	4000	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

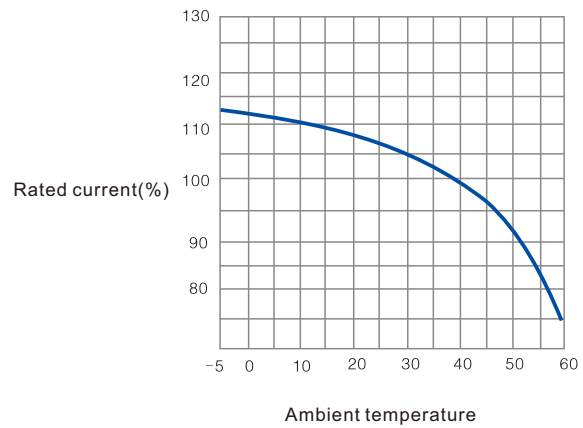
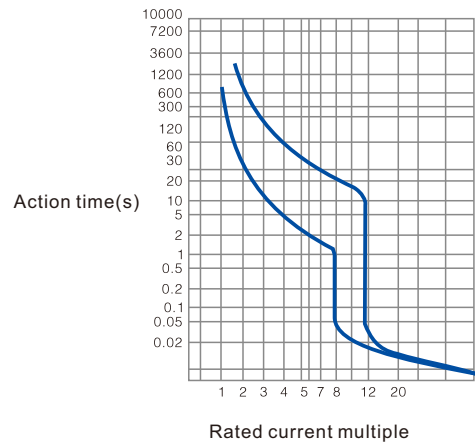
Characteristic curve

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



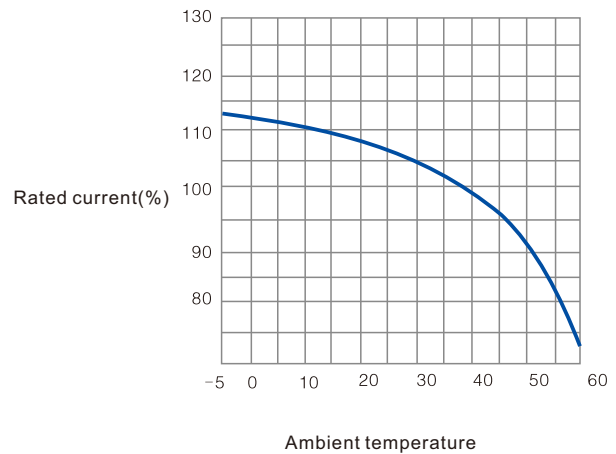
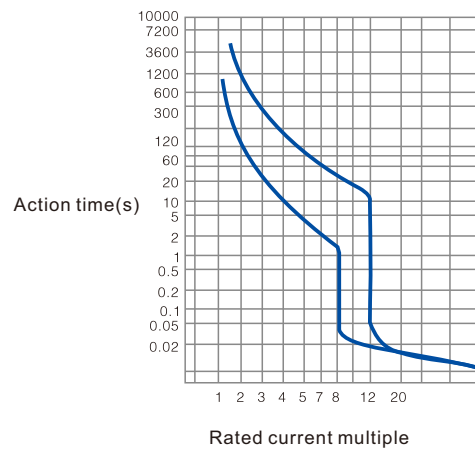
TRDM5PV - 250、315 Action characteristic curve

TRDM5PV -250、315 Temperature compensation curve



TRDM5PV -400 Action characteristic curve

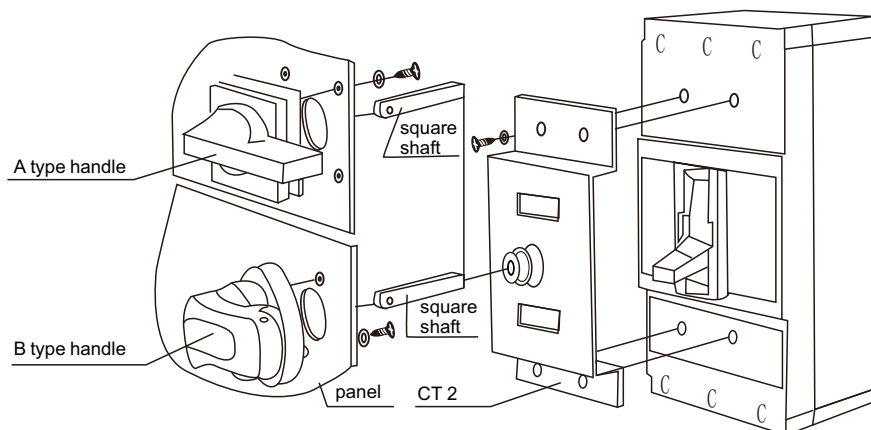
TRDM5PV - 400 Temperature compensation curve



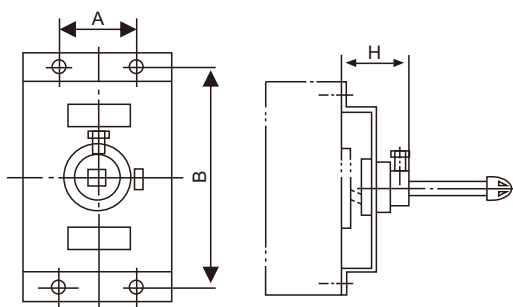
TRDM5PV - 630、800 Action characteristic curve

TRDM5PV -630、800 Temperature compensation curve

CT2 Type Manual operating mechanism installation diagram

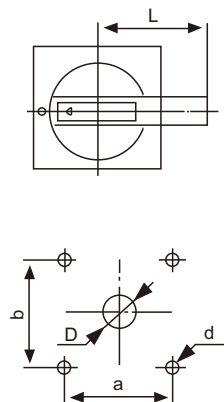


CT2 Type Manual operating mechanism installation dimension drawing



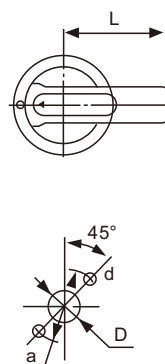
Model	Dimensions (mm)		
	A	B	H
TRDM5PV-250、315/2300	—	161	62
TRDM5PV-250、315/3300	35	161	70
TRDM5PV-400、630/2300	116	200	76.3
TRDM5PV-400V、630V/2300	89	217	48
TRDM5PV-800/2300	116	200	76.3
TRDM5PV-400、630、800/3300	167	214	76.3

CT2 Type Operating mechanism handle appearance and installation dimensions



Size	A1 250-315	A2 400-800
D	φ35	φ35
d	φ4.5	φ4.5
a	65	65
b	65	65
L	95	125

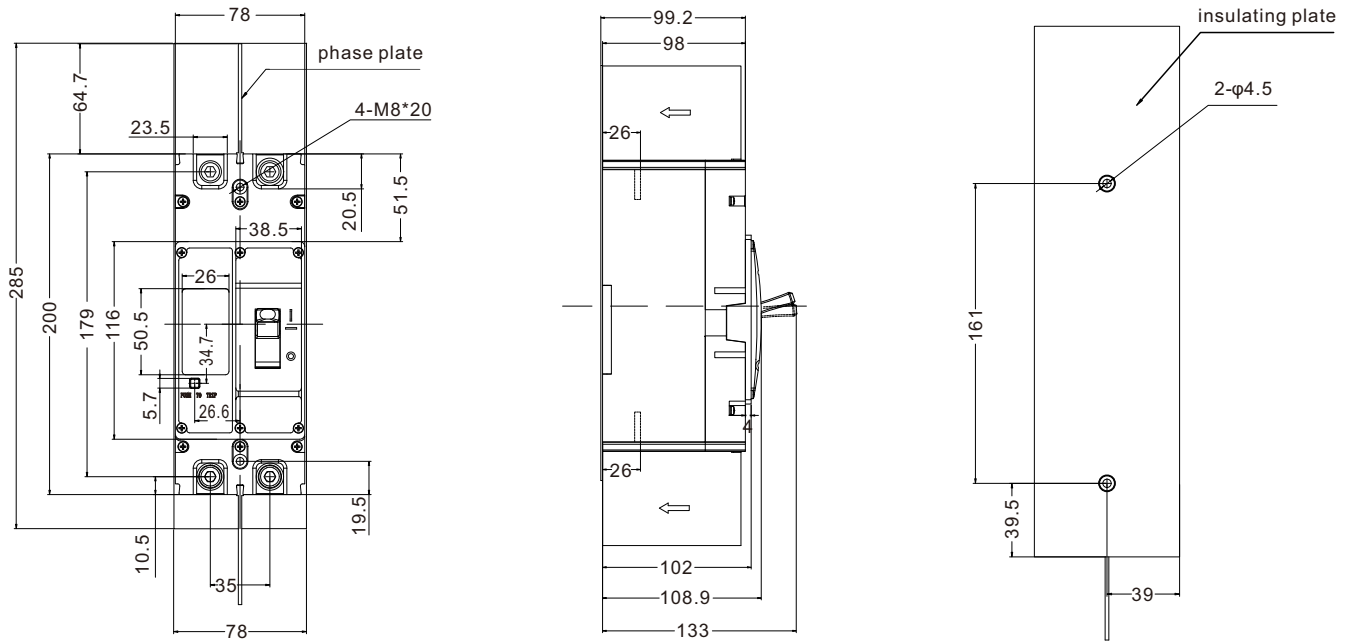
A type handle dimensions



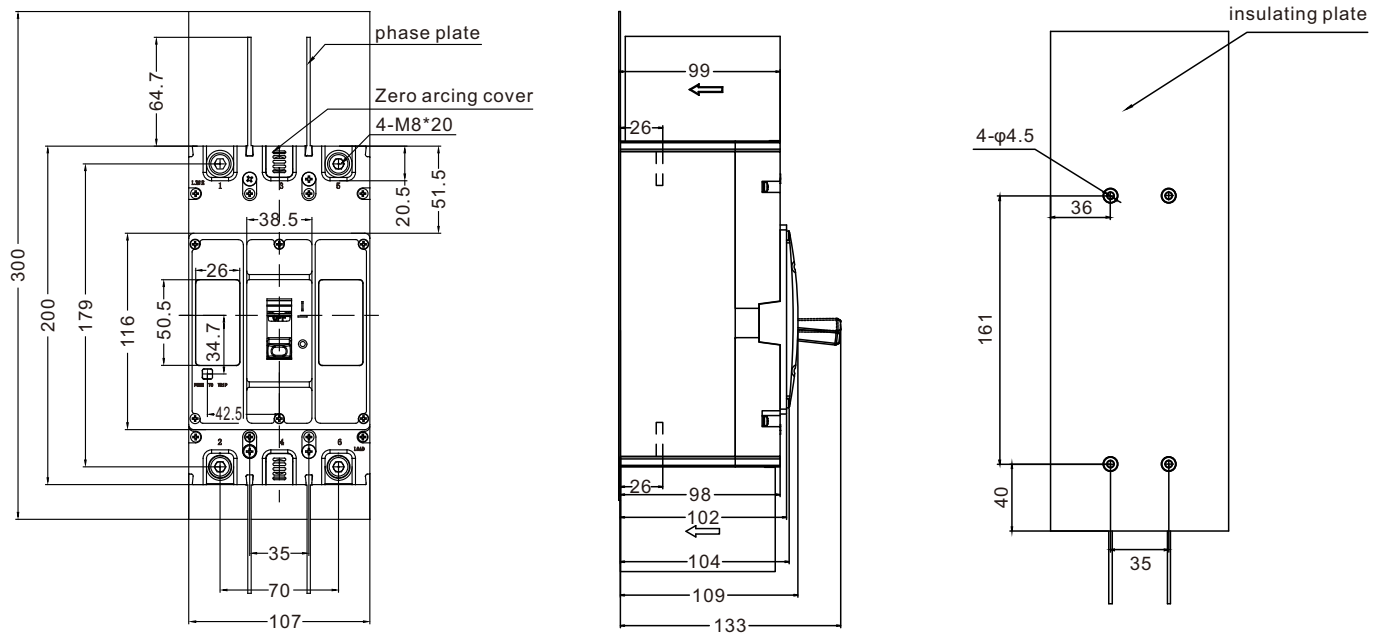
Size	B1 250-315	B2 400-800
D	φ35	φ35
d	φ4.5	φ4.5
a	65	65
b	53	53
L	95	125

B type handle dimensions

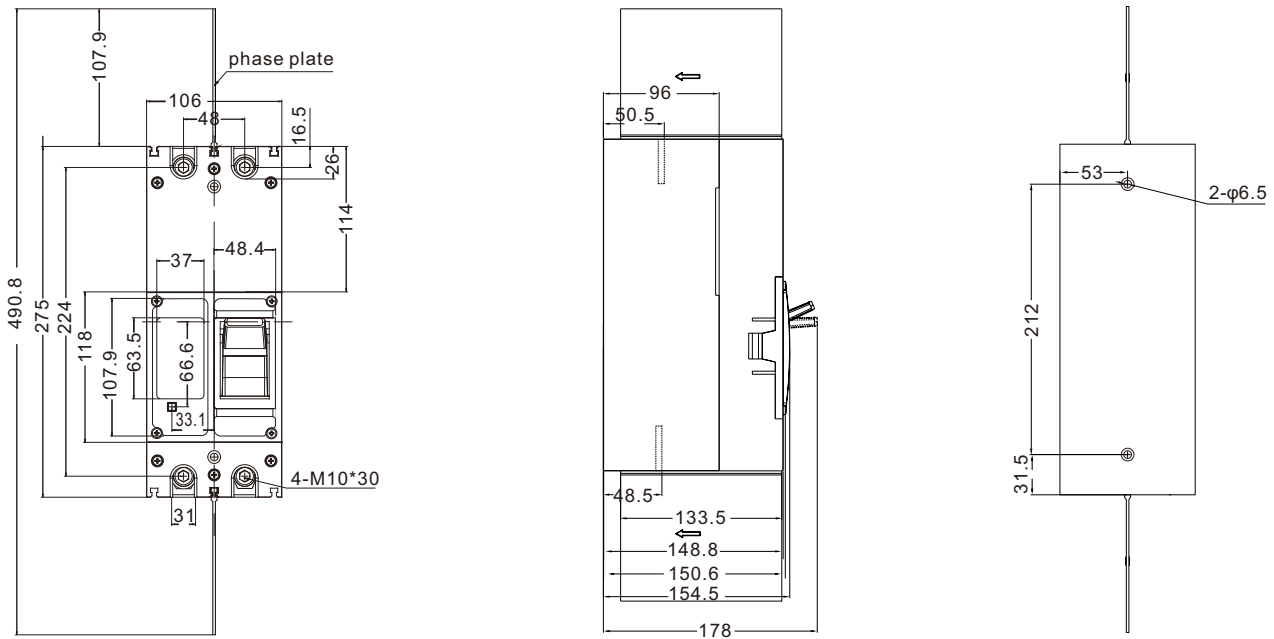
TRDM5PV-250、315 Appearance & Installation Dimensions(Front wiring)(2P)



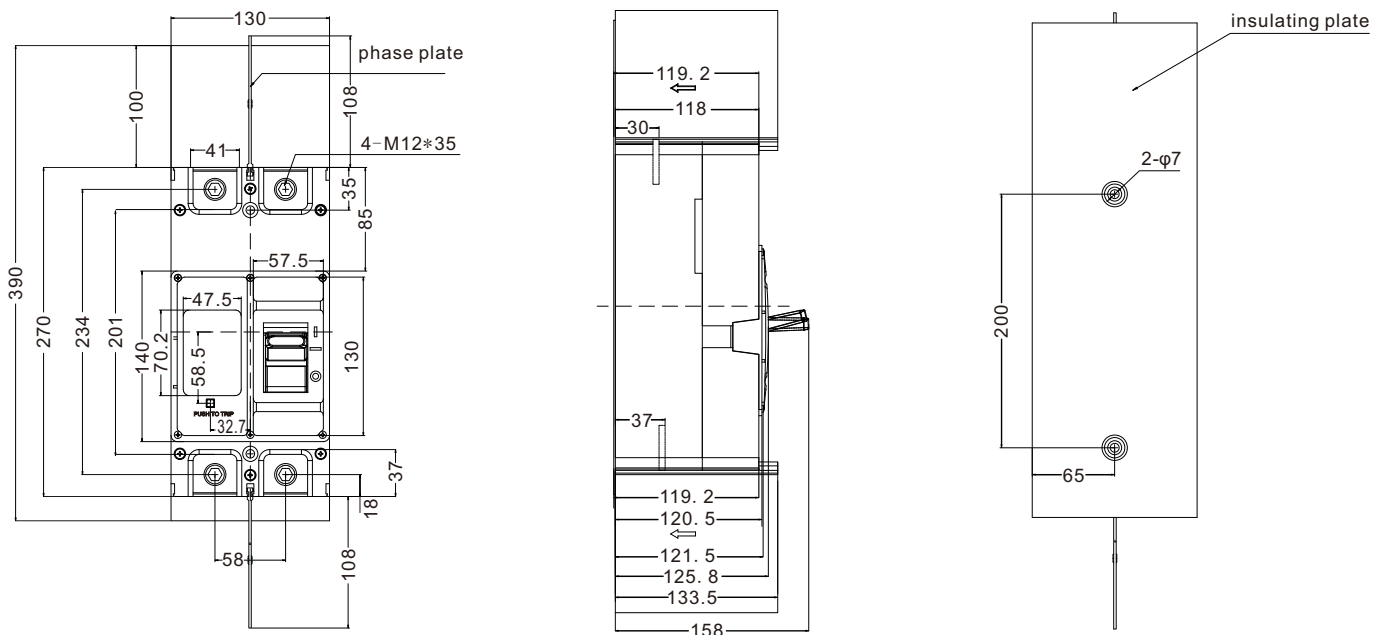
TRDM5PV-250、315 Appearance & Installation Dimensions(Front wiring)(3P)



TRDM5PV-400V、630V Appearance & Installation Dimensions(Front wiring)(2P)



TRDM5PV-400、630、800 Appearance & Installation Dimensions(Front wiring)(2P)



TRDM5PV-400、630、800 Appearance & Installation Dimensions(Front wiring)(3P)

