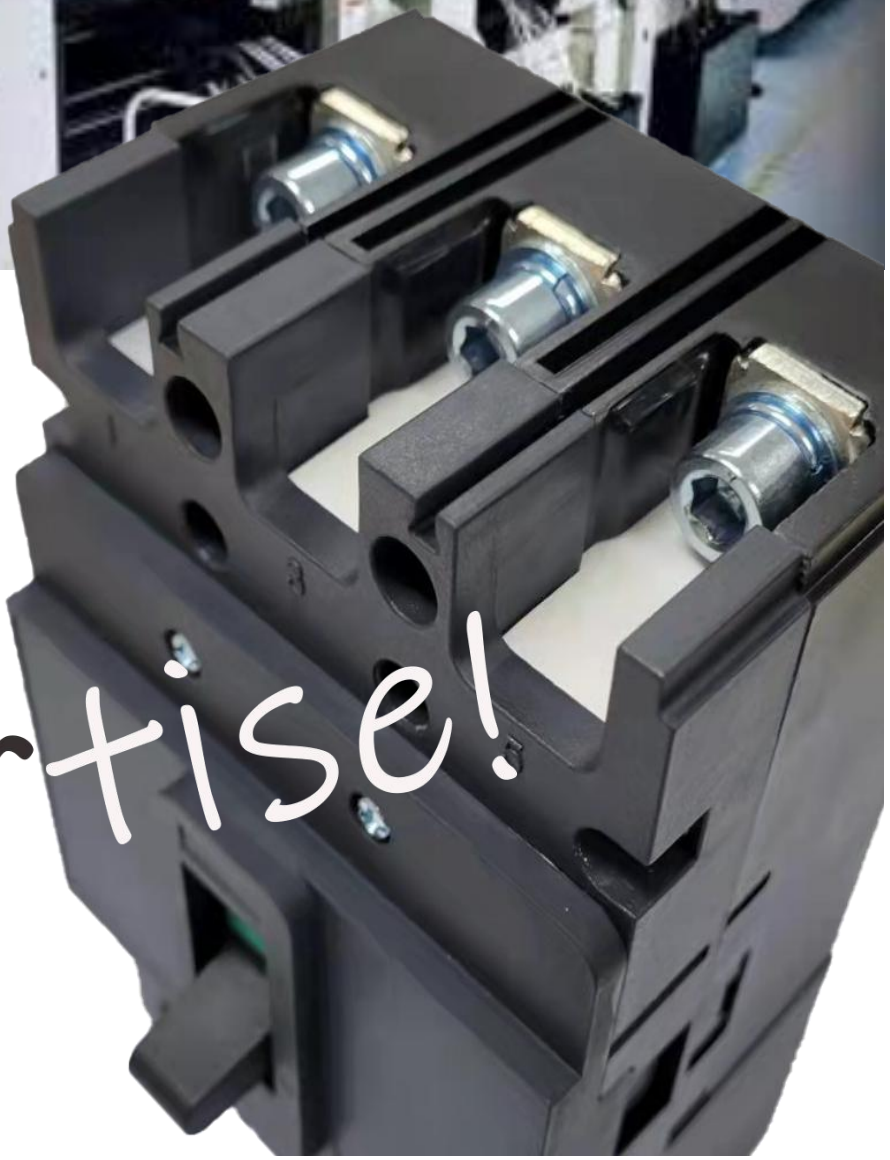
TECO
Powering the world

TAX Series
Molded Case Circuit Breakers

CCC CE ISO9001 CERTIFIED

Molded Case Circuit Breakers



Expertise!

From 16A To 800A

The TAX range MCCBs provides safe and easy solution for low voltage electrical circuit protection.

TECO MCCB's Selection Guide

TAX-□□□□
Basic nominal specifications
125L 125M 125H 250L 250M 250H 400L 400M 400H 630L 630M 630H 800L 800M 800H

□
Constitutional functions
Blank: for distribution; M: for Motor protection

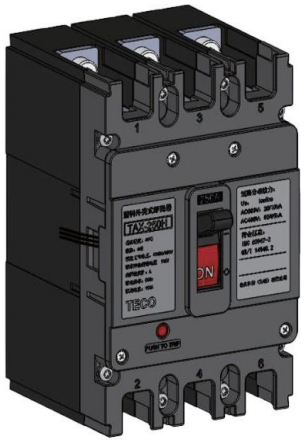
□
Number of Poles
3=3P A: 4 poles, no overcurrent tripping components are installed on the N pole, which is always connect_x005f ed, not switched on or off along with the other three poles; B: 4 poles, no overcurrent tripping compo nents are installed on the N pole, which switched on or off along with with the other three poles; the N pole is switched on first then off; C: 4 poles, the N pole is equipped with an tripping component, and the N pole is switched on or along with the other three poles, the N pole is switched first then off; D: 4 poles, the N pole is equipped with an tripping component, and the pole is always on, and it is not switched on or off along with the other three poles.

□□□
Rated current
016=16A 020=20A 025=25A 032=32A 040=40A 050=50A 063=63A 080=80A 100=100A 125=125A 140=140A 160=160A 180=180A 200=200A 225=225A 250=250A 315=315A 400=400A 500=500A 630=630A 700=700A 800=800A

□□□□
Internal accessories
First: 2：Electromagnetic trip 3：Reset trip Last 3(bland=no accessories) 080=L 101=S (AC230V) 102=S (AC400V) 103=S (AC110V) 104=S (AC24V) 105=S (DC24V) 301=U (AC230V) 302=U (AC400V) 200=X 181=L+S (AC230V) 182=L+S (AC400V) 183=L+S (AC110V) 184=L+S (AC24V) 185=L+S (DC24V) 280=L+X 381=L+U (AC230V) 382=L+U (AC400V) 401 =S (AC230V) +X 402=S (AC400V) +X 403=S (AC110V) +X 404=S (AC24V) +X 405=S (DC24V) +X 701=U (AC230V) +X 702=U (AC400V) +X 481=A+S (AC230V) 482=A+S (AC400V) 483=A+S (AC110V) 484=A+S (AC24V) 485=A+S (DC24V) 780=U (AC230V) +A 781=U (AC400V) +A 600=X (左)+X (右) 680=X+A 800=A 880=A+A Note：X-XAUX: Auxiliaries L-ALT: Alert A-AUX+ALT:Auxiliary alert S-SHT: Shunt U-UVT: Undervoltage

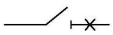
Scope of Application

TAX Range MCCBs is a new type of circuit breaker developed with advanced design and manufacture technologies. Its rated insulation voltage 1000V, suitable for infrequent conversion and infrequent starting of motor in circuits of AC 50Hz, rated operating voltage 690V and below, rated operating current up to 800A. The MCCBs has overload, short-circuit and undervoltage protection functions to protect the circuits and power supply from damage. TAX Series MCCBs are featured with compact structure, small size, high short arcing, complete internal and external accessories.



Compliance with standards:
IEC60947-1, GB//T14048.1 General Provisions
IEC60947-2, GB//T 14048.2 Low-voltage Circuit Breakers
IEC60947-4, GB//T 14048.4 Electromechanical circuit breakers and motor
IEC60947-5-1，GB//T 14048.5 Electromechanical control circuit devices

Operating and installation conditions

◆The altitude of the installation location shall not exceed 2000m;
◆The ambient air temperature shall be -5℃ ~ +40℃, and the average temperature of 24 hours shall not exceed +35
◆The relative air humidity at the installation location shall not exceed 50% at the maximum temperature of +40℃. At a lower temperature, the higher relative humidity may be higher, and the monthly mean minimum temperature of wettest month shall not exceed +25℃; the mean maximum relative humidity of the month shall not exceed 90%, and condensation occurs on the surface of the product due to temperature changes shall be considered.
◆Pollution level: 3
◆The installation category of the main circuit and undervoltage trip unit of the MCCB is III, and that of the other circuits and control circuits is II.
◆Applicable electromagnetic environment: A
◆Capable of withstanding the effects of humid air, salt spray, oil, mold, and nuclear industrial environment
◆Maximum installation inclination: ± 22.5
◆MCCB can work reliably when it is subjected to normal vibration of the ship.
◆MCCB can work reliably under earthquake conditions (4g)
◆MCCB shall be installed in a place where there is no danger of explosion and no conductive dust, no factors that corrode metal or destory the insulation.
◆The installation site is free from rain and snow.
◆The circuit breaker has isolation function with the symbol 

The cross-sectional area of the wire and the corresponding rated current

rated current(A)	16、20	25	32	40、50	63	80	100	125、140	160	180、200、225	250	315、350	400
cross	2.5	4	6	10	16	25	35	50	70	95	120	185	240

rated current(A)	wire		cooper bar	
	number	The cross-sectional area of each wire(mm2)	number	Cross-sectional area of each cooper bar(mm2)
500	2	150	2	30x5
630	2	185	2	40x5
700	2	240	2	50x5
800	2	240	2	50x5

Technical Specifications

Frame capacity(AF)		125						250						400						630						800					
Type		TAX-125						TAX-250						TAX-400						TAX-630						TAX-800					
Breaking level		L		M		H		L		M		H		L		M		H		L		M		H		L		M		H	
Number of poles		3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4	3	4
Rated current(A) Reference ambient Temp. 40°C		16,20,25,32,40,50,63, 80,100,125						100,125,140,160,180, 200,225,250						225,250,315,350,400						400,500,630						630,700,800					
Rated impulse withstand voltage Uimp（VAC）		12						12						12						12						12					
Rated insulation voltage Ui(VAC)		1000						1000						1000						1000						1000					
Rated operating voltage Ue(VAC)IE		400/690						400/690						400/690						400/690						400/690					
Rated limit short-circuit breaking capacity Icu (kA)	AC690V	20		0		20		20		20		20		30		30		30		30		30		30		30		30		30	
	AC400V	35		65		85		45		65		85		50		65		100		65		85		100		65		85		100	
Rated service short-circuit breaking capacity Ics (kA)	AC690V	15		15		15		15		15		15		20		20		20		20		20		20		20		20		20	
	AC400V	25		50		65		35		50		65		35		50		65		42		65		85		42		65		85	
Overload trip method		Thermal electromagnetic						Thermal electromagnetic						Thermal electromagnetic						Thermal electromagnetic						Thermal electromagnetic					
Endurance	Mechanical	20000						20000						10000						10000						10000					
	Electrical	8000						8000						7500						7500						7500					
Wiring method	Front-panel wiring	•Crimp terminal						•Crimp terminal						•Crimp terminal						•Crimp terminal						•Crimp terminal					
	Back-panel wiring	★						★						★						★						★					
	Plug-in wiring	★						★						★						★						★					

★ Optional

Note: The N poles of 4-pole products are on the right

MCCBs Protection Characteristics

The thermal type trip unit of the circuit breaker has the inverse time limit specificity;
the electromagnetic trip unit is instantaneous, and the characteristics are shown in the following table.

◆For Power Distribution

Rated current (A)	Thermal type trip unit (ambient temp. +40℃)		Action current (A) of Electromagnetic trip unit
	1.05In (Cold) Idle time (h)	1.3In (Hot) Action time (h)	
16≤ In≤ 63	≤ 1	≤ 1	10In±20%
63 < In <800	≤ 2	≤ 2	

◆For Motor Protection

Rated Frame Current(A)	Thermal release (ambient temp. +40 ° C)					Action current (A) of Electromagnetic trip unit
	1.0In (Cold)	1.2In (Hot)	1.5In (Hot)	7.2In (Cold)	Tripping current	
	Idle time (h)	Action time (h)	Action time (min)	Action time (s)		
125,250	>2	≤ 2	≤ 4	4 <Tp ≤ 10	10	12In±20%
400,630			≤ 8	6 <Tp ≤ 20	20	

◆Power consumption sheet

Type	Power-on current (A)	Total power consumption of 3-/4-pole breakers (W)	
		Front-panel / Back-panel wiring	Plug-in buckle wiring
TAX-125 Direct thermal type (16～25A)	25	1.7	1.8
TAX-125 Direct thermal type (32～125A)	125	27	27.2
TAX-250	250	33.4	33.6
TAX-400	400	48	48.2
TAX-630	630	107.2	107.4
TAX-800	800	96	73.7(In=700A)

◆Derating factors of rated operating current of thermal trip unit varying with ambient temperatures

Circuit breaker model	Ambient temperature				
	+40℃	+45℃	+50℃	+55℃	+60℃
TAX-125	1.0In	0.95In	0.89In	0.84In	0.76In
TAX-250	1.0In	0.96In	0.91In	0.87In	0.82In
TAX-400	1.0In	0.94In	0.91In	0.81In	0.73In
TAX-630	1.0In	0.93In	0.88In	0.83In	0.76In
TAX-800	1.0In	0.88In	0.83In	0.79In	0.76In

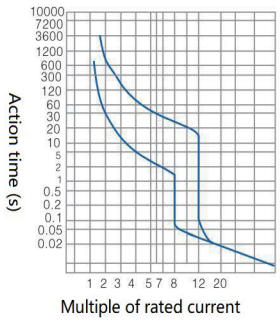
◆Altitude capacity reduction

If the altitude exceeds 2000m of the applicable operating environment, the electrical performance of the circuit breaker may refer to the following table.

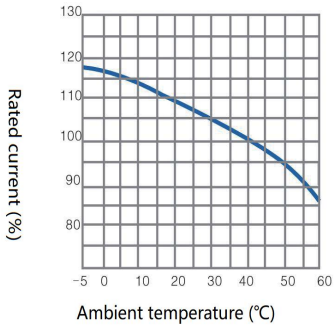
Altitude (m)	2000	3000	4000	5000
Operating withstand voltage	3000	2500	2000	1800
Modifying coefficient of operating currents	1	0.94	0.88	0.83
Modifying coefficient of Short-circuit breaking capacity	1	0.83	0.71	0.63

Characteristic curve

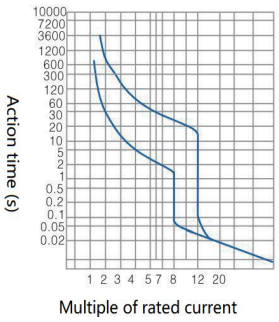
Note: The following characteristic curves are measured under cold state and three-phase load.



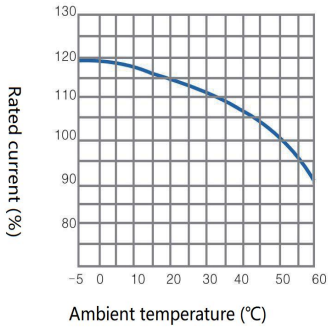
TAX-125(16A-32A) action curve



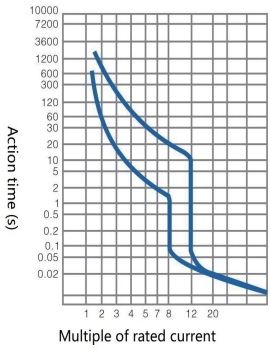
TAX-125(16A-32A) temp. compensation curve



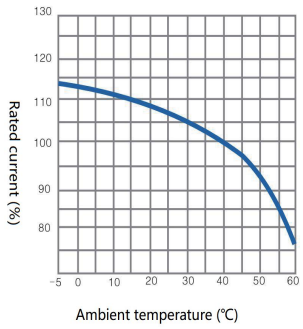
TAX-125(40A-125A) action curve



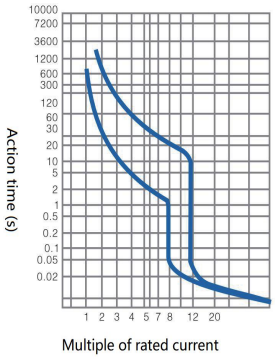
TAX-125(40A-125A) temp. compensation curve



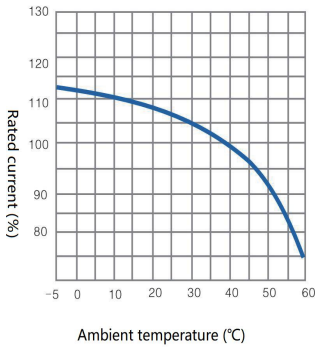
TAX-250 action curve



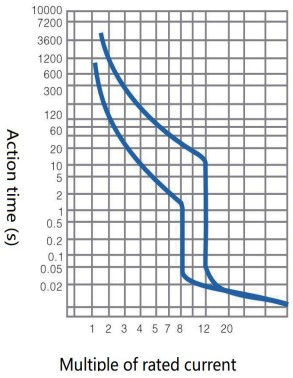
TAX-250 temp. compensation curve



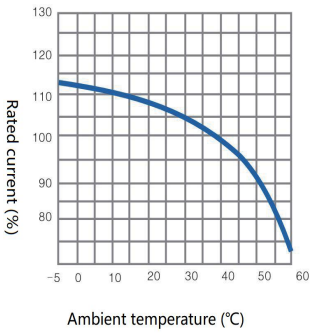
TAX-400 action curve



TAX-400 temp. compensation curve



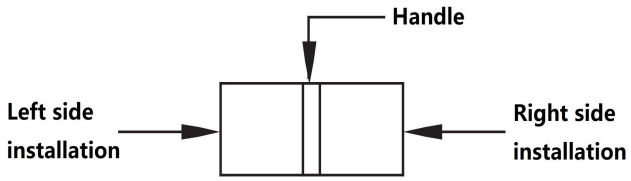
TAX-630/800 action curve



TAX-630/800 temp. compensation curve

Internal Accessories

Internal electrical accessories for MCCBs
According to the needs of users, the accessoris can be directly connected to the wire (wire length is 50cm,the length can be specified) or connected to the end of the sub-row.

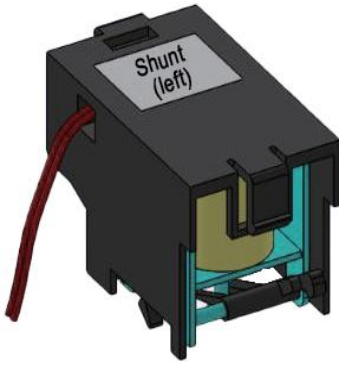


L-- Alarm switch
X-- Auxiliary switch
A-- Auxiliary alarm switch
S-- Shunt release
U-- Undervoltage release

Code	Accessories	TAX-125	TAX-250	TAX-400	TAX-630	TAX-800
208/308	Alarm switch	L	L	L	L	L
210/310	Shunt release	S	S	S	S	S
230/330	Undervoltage release	U	U	U	U	U
220/320	Auxiliary switch	X	X	X	X	X
218/318	Alarm switch+ Shunt release	L S	L S	L S	L S	L S
228/328	Auxiliary switch+ Alarm switch	X L	X L	L X	L X	L X
238/338	Alarm switch+ Undervoltage release	U A	U A			
240/340	Shunt release+ Auxiliary switch	S X	S X	S X	S X	S X
270/370	Undervoltage release+ Auxiliary switch	U X	U X	U X	U X	U X
248/348	Auxiliary alarm switch+ Shunt release	A S	A S	A S	A S	A S
278/378	Auxiliary alarm switch+ Undervoltage release	U A	U A			
260/360	Left auxiliary switch+ right auxiliary switch	X X	X X	X X	X X	X X
268/368	Auxiliary alarm switch+ Auxiliary switch	A X	A X	A X	A X	A X
280/380	Auxiliary alarm switch	A	A	A	A	A
288/388	Auxiliary alarm switch+ Auxiliary alarm switch	A	A			

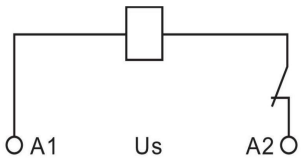
1 The first part of the code, 2 electromagnetic trip, 3multiple trip.
The last two are the internal accessory code, blank means no accessories

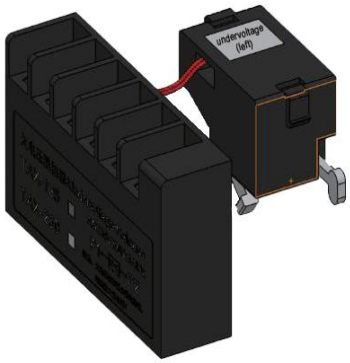
Internal Accessories & Functions



Shunt trip unit

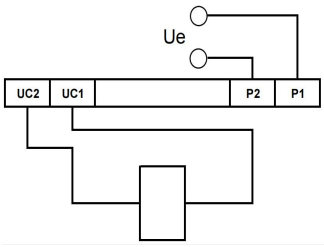
◆Can be used for long distance trip of MCCB.
Note: When a DC24V shunt trip unit is selected, the power supply of the shunt trip terminal must be ≥50W.

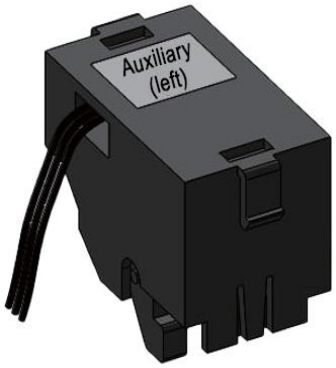




Undervoltage trip unit

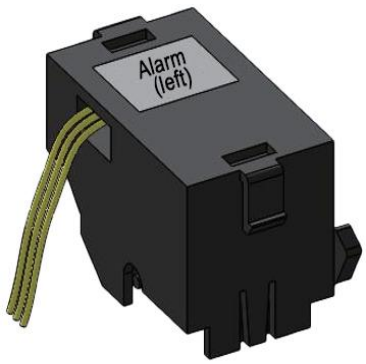
◆When the power supply voltage drops to 35~70% of the rated voltage, the circuit breaker is instantaneously tripped;
◆When the voltage is <35% Ue, it shall prevent the MCCB from closing; when the voltage is ≥85% Ue, it shall ensure the close of the MCCB;
◆When applied, the power supply must be turned on before the MCCB can be switched-on or off.





Auxiliary contacts

◆Used for indicating the on or off status of the MCCB;
◆One set of NO/NC is used for Inm 125, 250;
◆One set of 2NO/2NC is used for Inm 400, 630, 800.



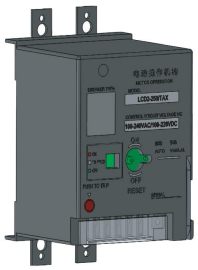
Alarm contacts

◆Used to indicate the fault tripping state of the MCCB;
The alarm contacts do not operate when the MCCB is normally on or off, and only operate under the situation of free trip or the fault trip. When the MCCB is reclosed, the IT return to their original state.

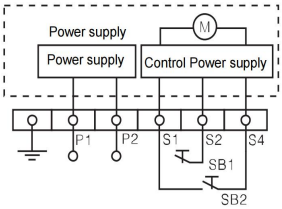
Note: For all internal accessories except undervoltage release, if the installation size is affected by external wiring terminals, lead-type accessories can be selecte

CD2 type motor type electric operation mechanism

Used for electric ON/OFF operation of MCCB



Rated voltage: Us	AC 230V 50Hz	AC 400V 50Hz
	DC 24V, 110V, 220V	
Frame current:Inm	125 -250	400 -800
Starting power (W)	14	35
Endurance (times)	20000	10000
Reliable operating range:85% -110% Us		

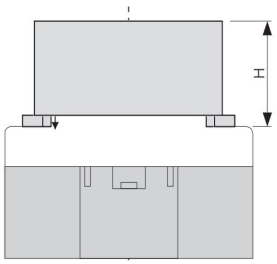


CD2 motor type wiring schematic

Note: The dotted line frame is the wiring diagram of the internal accessories of the circuit breaker.

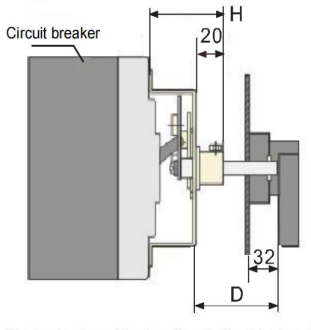
Description:
P1-P2: external power inputs;
SB1, SB2: operation button (user-supplied)
Voltage specification: AC50Hz/60Hz 110V, 230V
DC24V, 110V, 220V

Symbol Description:
SB1, SB2 are operation buttons (user-supplied)
X is the terminal block, P1 and P2 are external power inputs



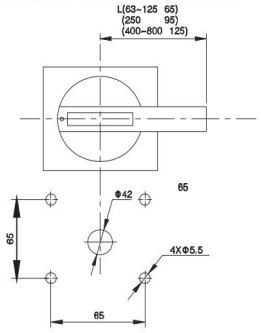
Frame current:Inm	125	250	400	630	800
Height (mm)	94	94	143	143	147

Operating mechanism of turning handles

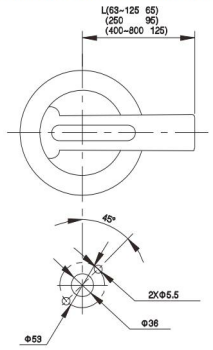


D: The torsion bar of the handles shall not be less than 50mm

Installation dimensions for square handles



Installation dimensions for round handles

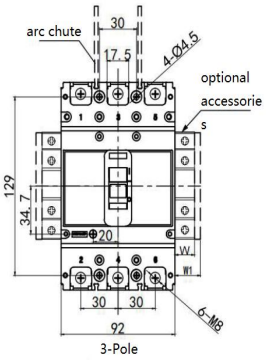


Type	125	250	400	630	800
TAX installation dimensions (H)	51	54	88	89	76
TAX installation dimensions (H)	56	56	88	63	63
TAX installation dimensions (H)	56	56	88	63	63
Handle dimensions (L)	65	95	125		

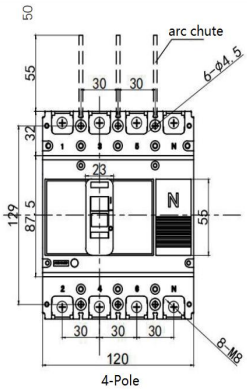
1. The square shafts of handles have three kinds of lengths: 50mm, 100mm, and 150mm (special specifications shall be stated when ordering);
2. The 3-pole and 4-pole circuit breakers have the same parameters for turning handles.

Installation dimensions

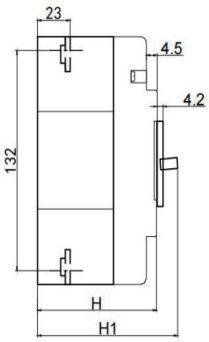
■TAX-125 front-panel wiring installation dimensions (3P,4P)

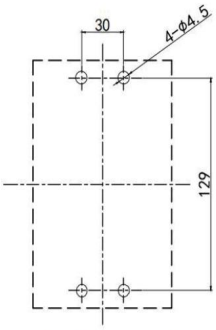


3-Pole



4-Pole

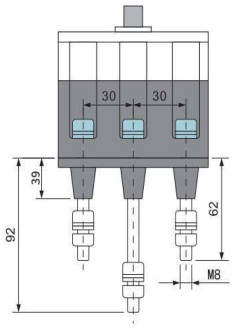




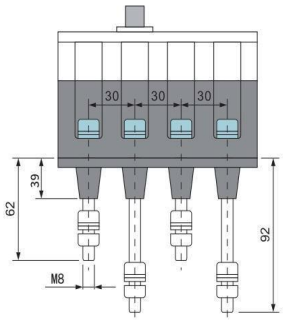
3-/4-pole front-panel wiring installation dimensions

Type	Product height		Auxiliary, shunt, alarm widths	Leakage, overload, undervoltage module widths
	H	H	W	W1
TAX-125L(3P/4P)	60	85	17	21
TAX-125H/M(3P/4P)	78.5	103.5		

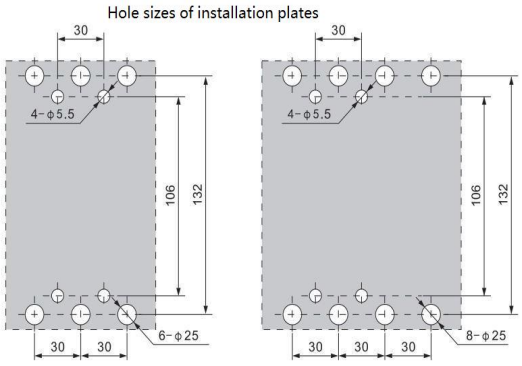
■TAX-125 back-panel wiring installation dimensions (3P,4P)



3-Pole

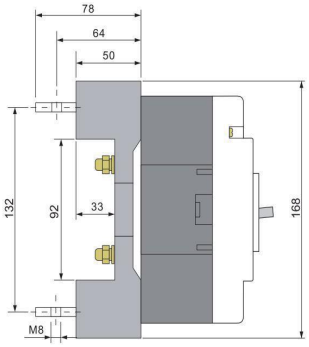


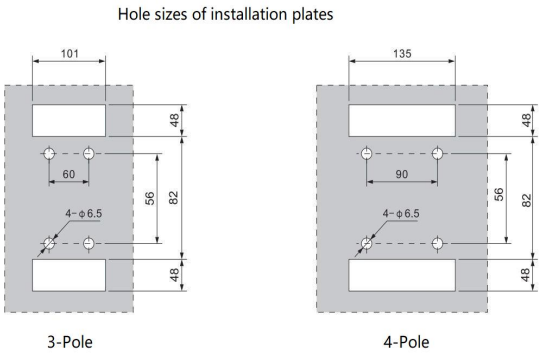
4-Pole



3-Pole 4-Pole

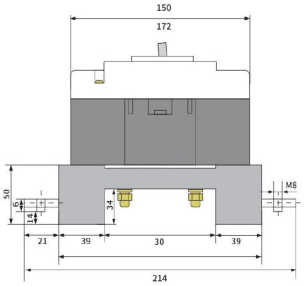
■TAX-125 plug-in back-panel wiring installation dimensions (3P,4P)

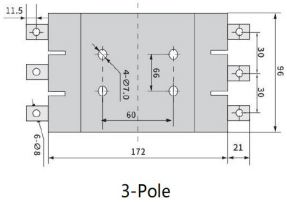




3-Pole 4-Pole

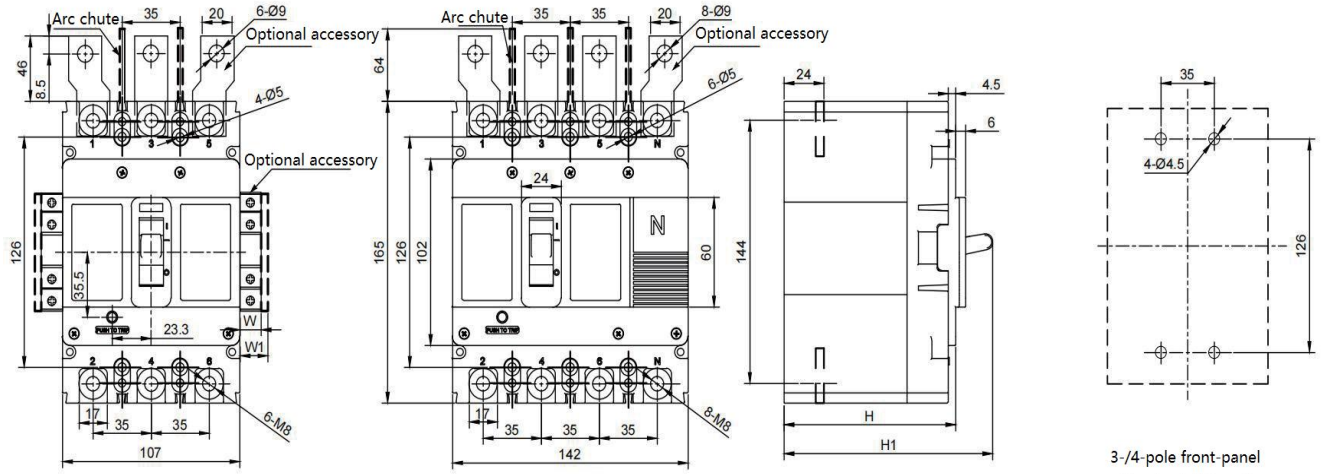
■TAX-125 plug-in front-panel wiring installation dimensions (3P)





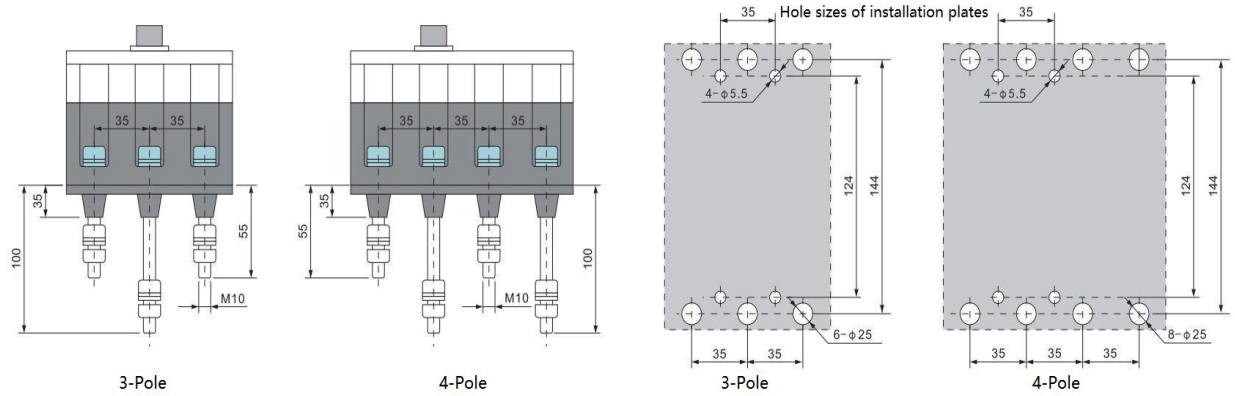
3-Pole

■TAX-250 front-panel wiring installation dimensions (3P,4P)

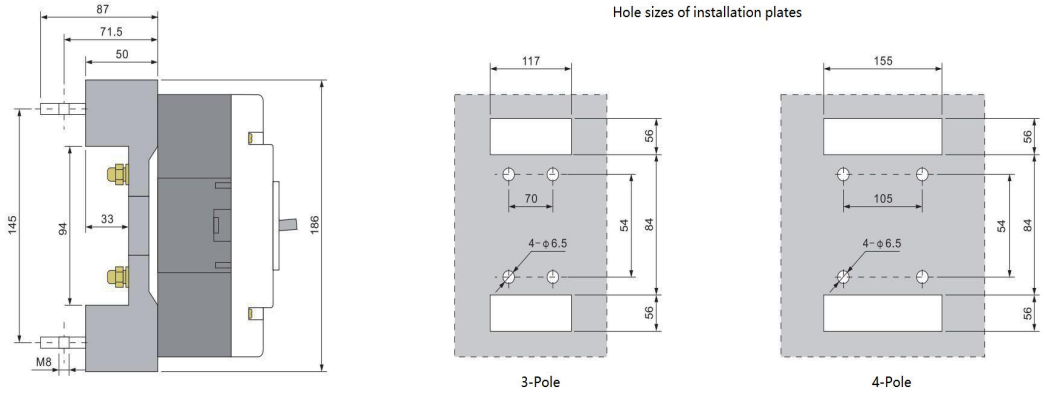


Type	Product height		Auxiliary, shunt, alarm widths	Leakage, overload, undervoltage module widths
	H	H	W	W1
TAX-250L(3P/4P)	85	110	17	21
TAX-250H/M(3P/4P)	103	127		

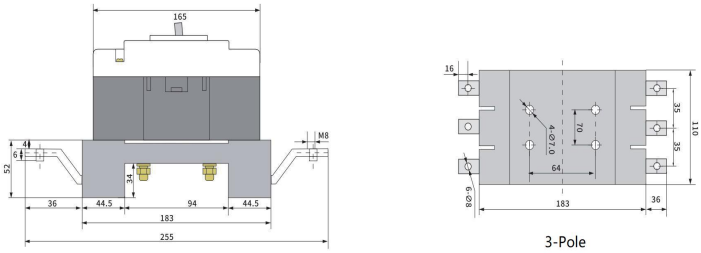
■TAX-250 back-panel wiring installation dimensions (3P,4P)



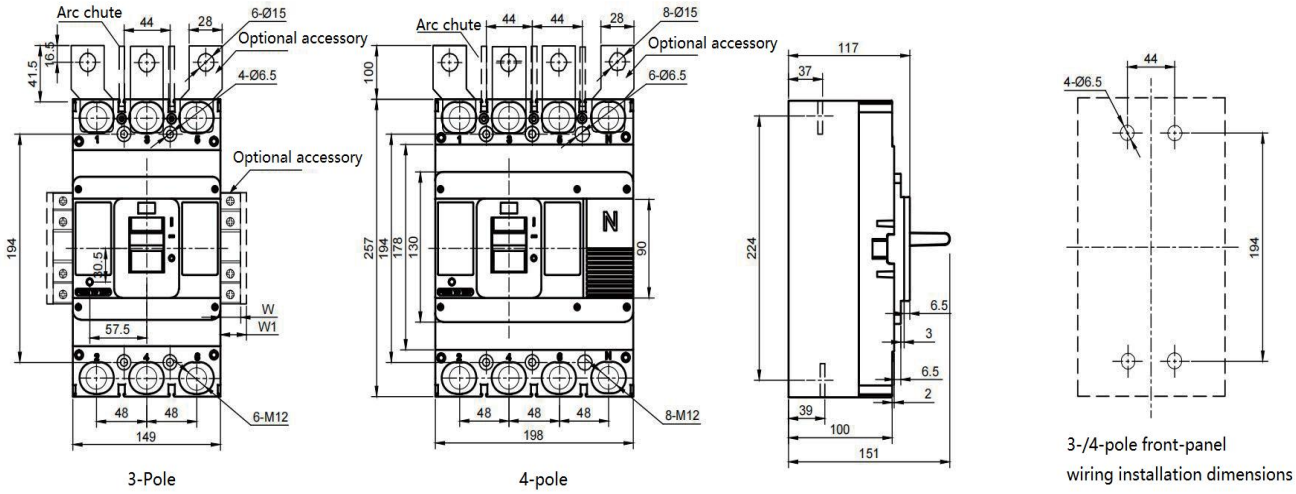
■TAX-250 plug-in back-panel wiring installation dimensions (3P,4P)



■TAX-250 plug-in front-panel wiring installation dimensions (3P)

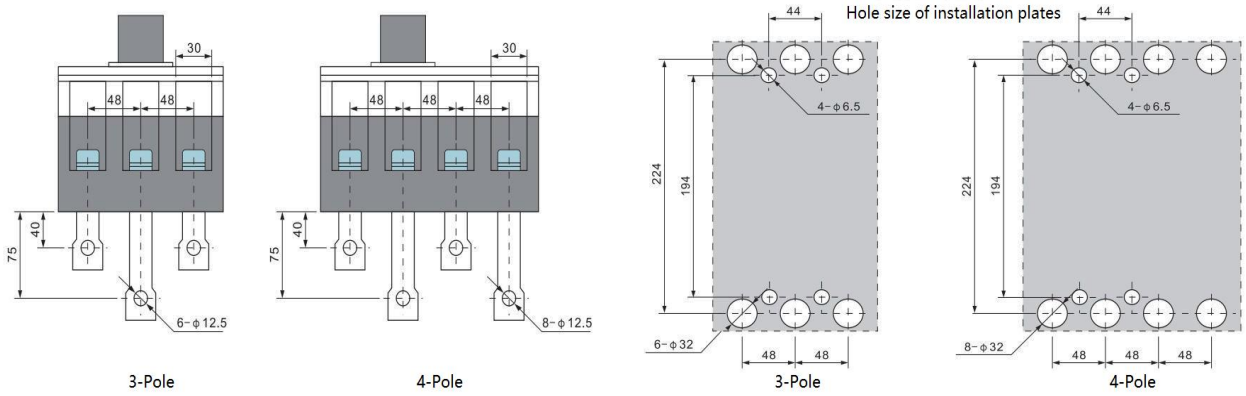


■TAX-400 front-panel wiring installation dimensions (3P,4P)

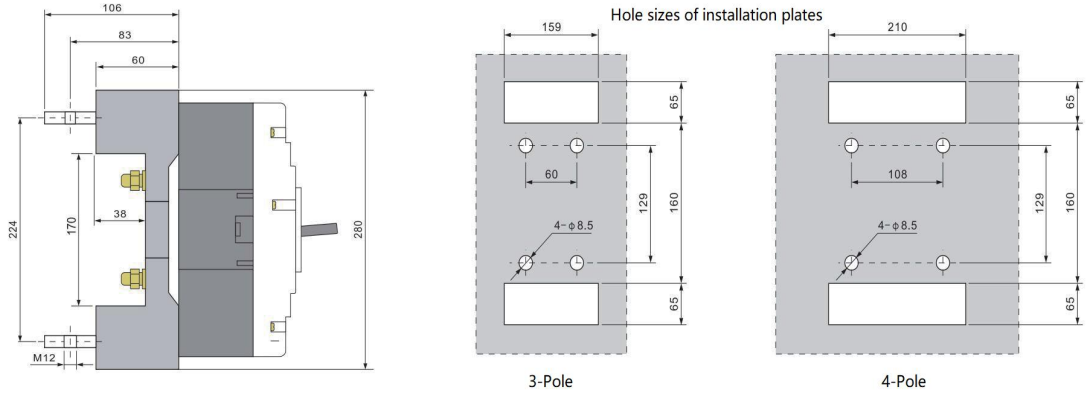


Type	Auxiliary, shunt, alarm widths	Leakage, overload, undervoltage module widths
	W	W1
TAX-400H/M(3P/4P)	17	21

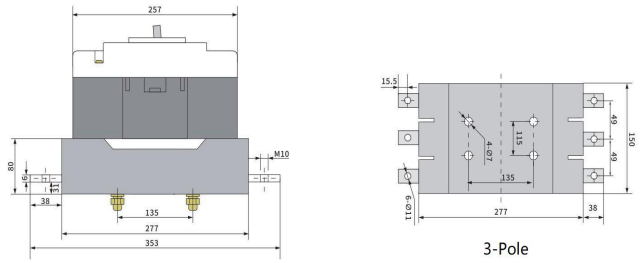
■TAX-400 back-panel wiring installation dimensions (3P,4P)



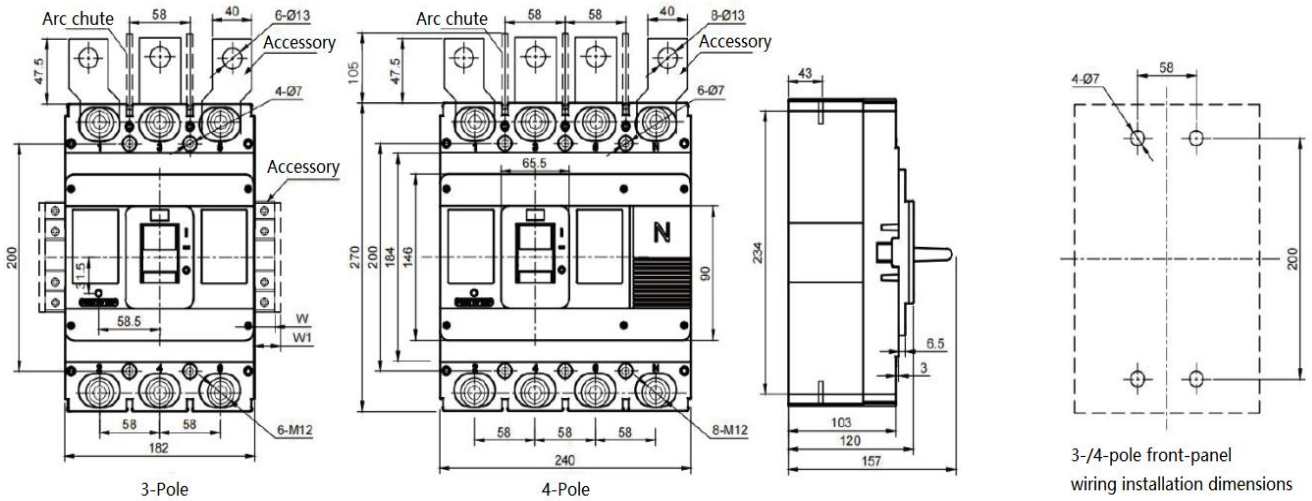
■TAX-400 plug-in back-panel wiring installation dimensions (3P,4P)



■TAX-400 plug-in front-panel wiring installation dimensions (3P)

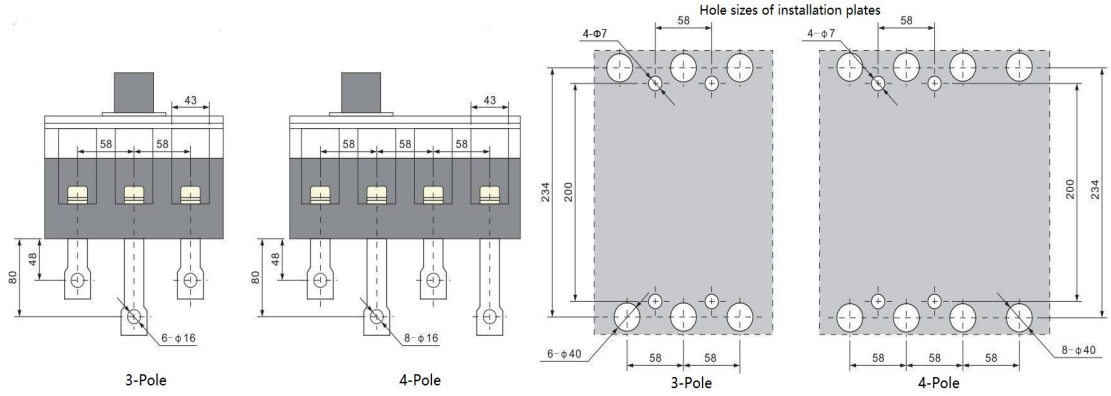


■TAX-630 front-panel wiring installation dimensions (3P,4P)

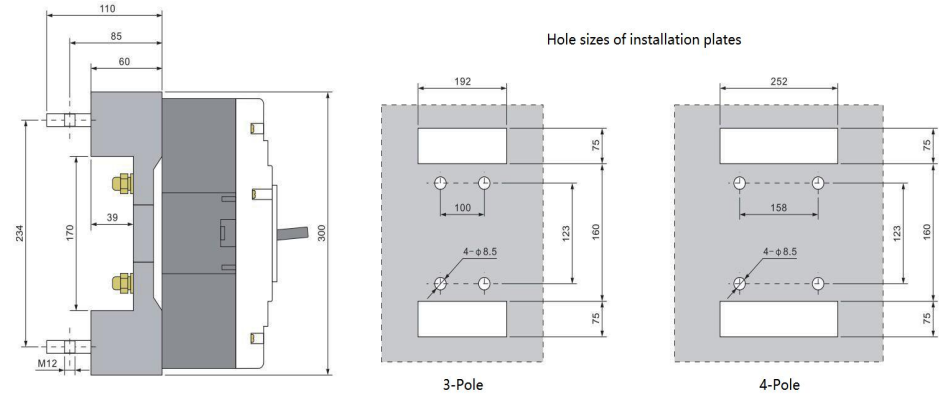


Type	Auxiliary, shunt, alarm widths	Leakage, overload, undervoltage module widths
	W	W1
TAX-630L/M/H	17	21

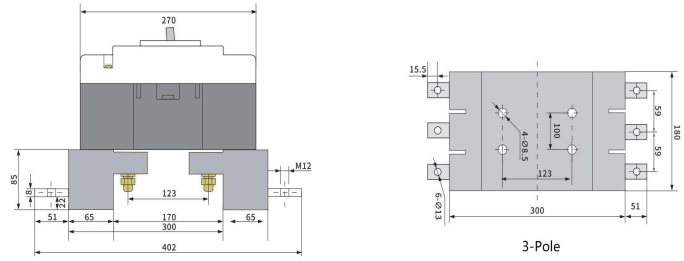
■TAX-630 back-panel wiring installation dimensions (3P,4P)



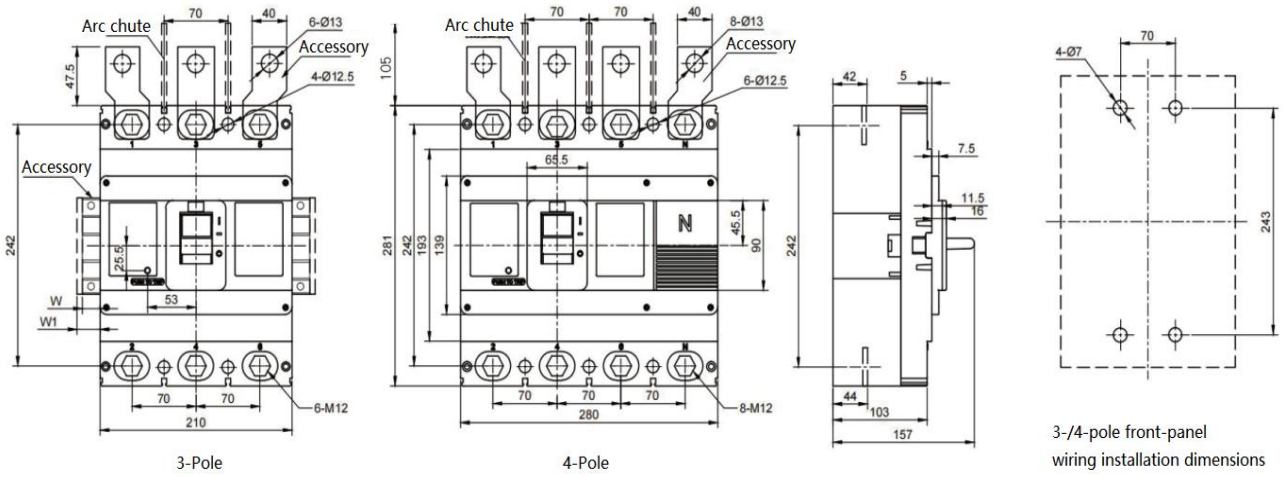
■TAX-630 plug-in back-panel wiring installation dimensions (3P,4P)



■TAX-630 plug-in front-panel wiring installation dimensions (3P)

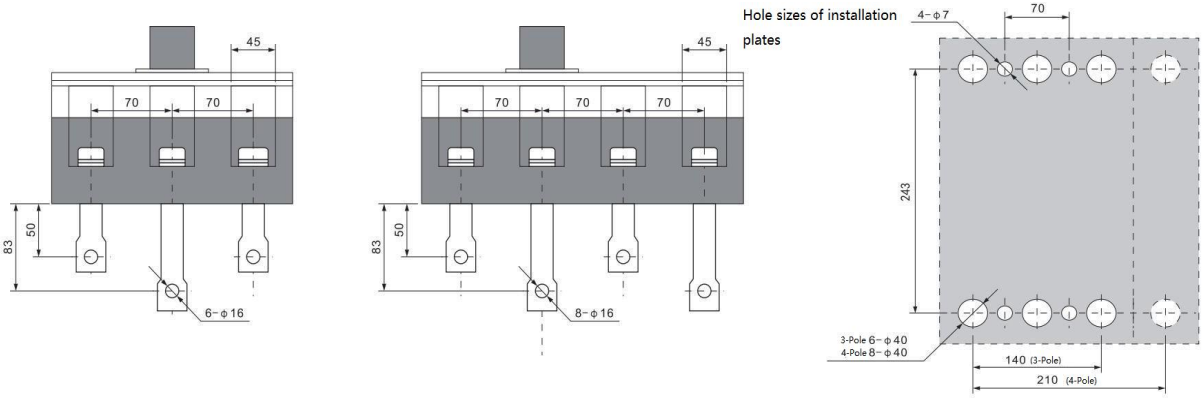


■TAX-800 front-panel wiring installation dimensions (3P,4P)

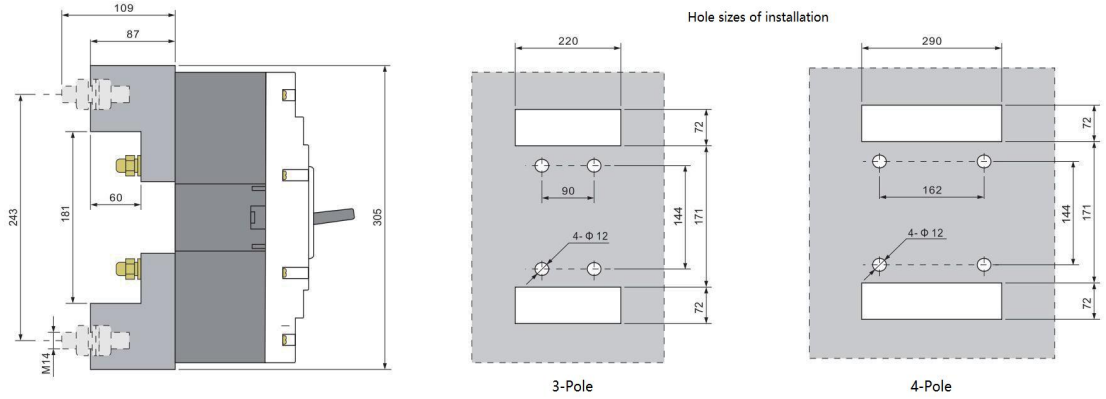


Type	Auxiliary, shunt, alarm widths	Leakage, overload, undervoltage module widths
	W	W1
TAX-800L/M/H	17	21

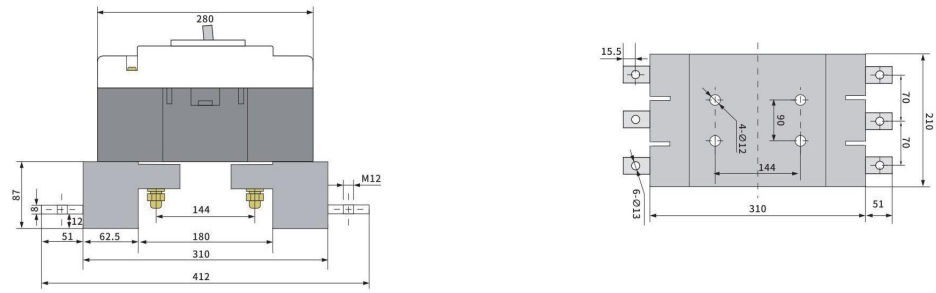
■TAX-800 back-panel wiring installation dimensions (3P,4P)



■TAX-800 plug-in back-panel wiring installation dimensions (3P,4P)



■TAX-800 plug-in front-panel wiring installation dimensions (3P)



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