CDM3 Moulded Case Circuit Breaker

Product Features

Standard

- IEC 60947-2
- GB 14048.2

Pollution Degree

CDM3 products operate in the environment (industrial environment) with pollution class 3 defined in IEC/EN 60947-1 and IEC/EN 60947-2 standards.

Wet and heat resistance

Dry and cold
Dry and heat
Wet and heat

Environment temperature

- CDM3 series can work for a long time under normal environment and operating temperature between -5℃ and 40℃ .
- Refer to the temperature derating factor table or contact us if the operating ambient temperature exceeds 40℃ (motor protection exceeds 60℃).
- Storage temperature ranges between -20℃ and 70℃ .

Altitude

- Altitude at normal installation site does not exceed 2000m.
- If the altitude exceeds 2000m, the changes in the dielectric strength and the air temperature drop must be considered. Refer to the altitude derating factor table or contact us.

Humidity

The following conditions must be met during normal operation:

- The relative humidity of atmosphere does not exceed 50% if the ambient air temperature is +40℃ . The product can be used at a high relative humidity if the temperature is low.
- The monthly average relative humidity at the wettest month is 90%.
- The impact of the condensation generated on the product surface on the product property shall be considered.

Reliable contact indication with isolating function

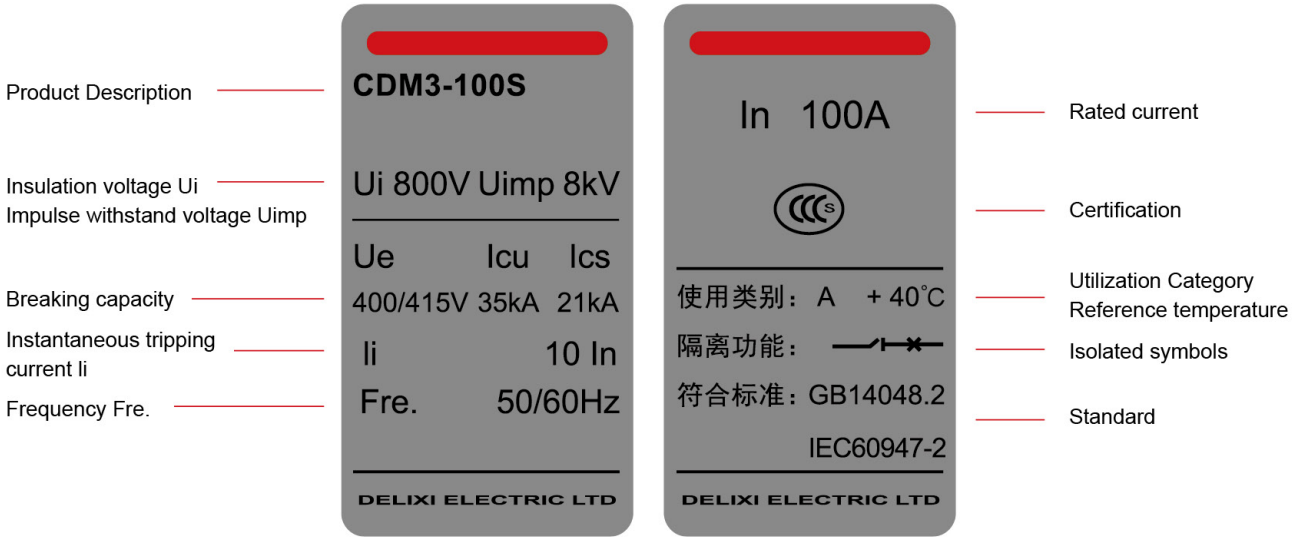
CDM3 moulded case circuit breaker complies with the isolation defined in IEC standard 60947-2

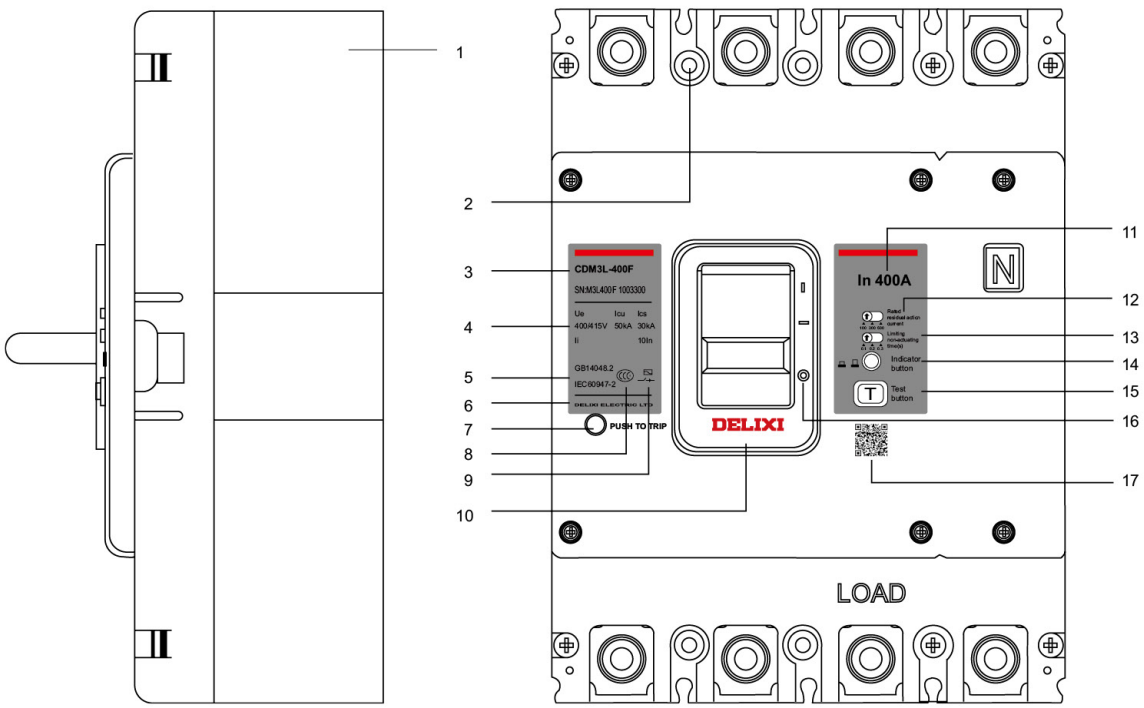
- The isolated location corresponds to O (OFF)
- The operating handle can indicate "OFF" only when the contact is really open
- The rotation handle or electric operating mechanism will not change the reliability of the contact indication system. Through the test, the isolating function must guarantee:
- Mechanical reliability of contact indication system
- No leakage current
- There is a certain overvoltage resistance capacity between the input and output terminals

Protectionclass

- IP protection class of circuit breaker body: IP20
- Circuit breaker installed in the switch cabinet:
  circuit breaker with a toggle handle: IP40
  circuit breaker with an electric operating mechanism: IP40

Nameplate Introduction





1. Technical parameters
2. Mounting hole
3. Model
4. Breaking capacity
5. Standard
6. Manufacturer Name
7. Tripping button
8. Certification
9. Circuit breaker with isolation function
10. Logo
11. Rated current
12. Rated residual action current
13. Limiting non-actuating time
14. Leakage indicator button
15. Leakage test button
16. Closing, tripping and opening
17. QR code

Technical parameters

Shell frame current		CDM3-63		CDM3-100			CDM3-125		CDM3-160			
Rated voltage Ue(V)		400/415		400/415/690			400/415/690		400/415/690			
Rated insulation voltage Ui(V)		690		800			800		800			
Rated impulse withstand voltage Uimp(KV)		6		8			8		8			
Rated current In(A)		10~63		10~100			10~125	40~125	100~160			
Number of poles Pole (3P,4P-A/B)		3/4		3/4		3	3/4		3/4			3
		S	F	S	F	N	S	T	S	F	N	H
Rated ultimate short circuit breaking capacity Icu kA	50/60HZ AC 400/415V	35	50	35	50	70	35	35	35	50	70	85
	50/60HZ AC 690V	-	-	-	8	-	-	8	8	8	-	-
Rated operating short circuit breaking capacity Ics kA	50/60HZ AC 400/415V	21	30	21	30	50	21	26	21	30	42	64
	50/60HZ AC 690V	-	-	-	8	-	-	4	4	8	-	-
Mechanical life	Mechanical with maintenance	40000		40000			40000		40000			
	Mechanical without maintenance	20000		20000			20000		20000			
Electrical life	AC400/415V	8000		8000			8000		8000			
Protection type	Power distribution protection	■		■			■		■			
	Motor protection	■		■			■		■			
Tripping ways	Thermal magnetic tripping	■		■			■		■			
	Single magnetic tripping	■		■			■		■			
Installation mode	Fixed front connection	■		■			■		■			
	Fixed rear connection	■		■			■		■			
	Plug-in front connection	■		■			■		■			
	Plug-in rear connection	■		■			■		■			
	Withdrawable	-		-			-		-			
Product accessories	Undervoltage release	■		■			■		■			
	Shunt release	■		■			■		■			
	Alarm contact	■		■			■		■			
	Auxiliary contacts (one open and one closed)	■		■			■		■			
	Auxiliary contacts (two open and two closed)	■		■			■		■			
	Extension terminal	■		■			■		■			
	AC electrically CD1	-		-			-		-			
	AC/DC general electrically CD2	■		■			■		■			
	Round direct manually operated	■		■			■		■			
	Square direct manually operated	■		■			■		■			
	Round extended manually operated	■		■			■		■			
	Square extended manually operated	■		■			■		■			
	Phase partition	■		■			■		■			
Independent accessory installation		■		■			■		■			
Isolating function		■		■			■		■			
Use class		Class A		Class A			Class A		Class A			
Certification		CCC, KEMA		CCC, KEMA			CCC		CCC, KEMA			
Dimensions–Fixedfront connection W*H*D	3P(mm)	75*130*68		75*130*68	92*150*93.5		75*130*68	92*150*75.5	107*165*76	107*165*88		
	4P(mm)	100*130*68		100*130*68	122*150*93.5		100*130*68	122*150*75.5	142*165*76	142*165*88		
Weight	Fixed 3/4P(kg)	0.78/0.98		0.78/0.98	1.28/1.63		0.78/0.98	1.12/1.42	1.53/2.03	1.53/2.03		

Remark
For CDM3-63/100/125AF, the rated current under 40 A, the protection function works at least at 400A; for the others, 10/12In.
For 100A, F/N type, the rated current starts with 40A.
The 4 Poles product with N phase is classified into type A and type B.
Type A: The N phase is directly connected with a wire, but without magnetic protection or thermal protection. It's always closed.
Type B: The N phase is installed with contacts, but without magnetic protection or thermal protection. It closes earlier and opens later than the other 3 poles.630 plug-in, draw-out derating to 500A

Technical parameters

Shell frame current		CDM3-250				CDM3-400				CDM3-630				CDM3-800			CDM3-1250
Rated voltage Ue(V)		400/415/690				400/415/690				400/415/690				400/690			400/415
Rated insulation voltage Ui(V)		800				800				800				800			800
Rated impulse withstand voltage Uimp(KV)		8				8				8				8			8
Rated current In(A)		100~250				200~400				400/500/630				630~800			800~1250
Number of poles Pole (3P,4P-A/B)		3/4			3	3/4			3	3/4			3	3/4		3	3
		S	F	N	H	F	N	H	R	F	N	H	R	F	N	R	H
Rated ultimate short circuit breaking capacity Icu kA	50/60HZ AC 400/415V	35	50	70	85	50	70	85	100	50	70	85	100	50	70	100	85
	50/60HZ AC 690V	8	8	-	-	8	10	-	-	10	10	-	-	-	30	-	-
Rated operating short circuit breaking capacity Ics kA	50/60HZ AC 400/415V	21	30	42	64	30	42	51	75	30	42	51	75	30	40	70	45
	50/60HZ AC 690V	4	8	-	-	5	10	-	-	10	10	-	-	-	20	-	-
Mechanical life	Mechanical with maintenance	40000				20000				20000				10000			10000
	Mechanical without maintenance	20000				10000				10000				5000			5000
Electrical life	AC400/415V	8000				7500				7500				2500			2500
Protection type	Power distribution protection	■				■				■				■			■
	Motor protection	■				■				■				-			-
Tripping ways	Thermal magnetic tripping	■				■				■				■			■
	Single magnetic tripping	■				■				■				■			■
Installation mode	Fixed front connection	■				■				■				■			■
	Fixed rear connection	■				■				■				■			■
	Plug-in front connection	■				-				-				-			-
	Plug-in rear connection	■				■				■				■			-
	Withdrawable	-				■				■				■			-
Product accessories	Undervoltage release	■				■				■				■			■
	Shunt release	■				■				■				■			■
	Alarm contact	■				■				■				■			-
	Auxiliary contacts (one open and one closed)	■				■				■				■			■
	Auxiliary contacts (two open and two closed)	■				■				■				■			■
	Extension terminal	■				■				■				■			■
	AC electrically CD1	-				-				-				■			■
	AC/DC general electrically CD2	■				■				■				-			-
	Round direct manually operated	■				■				■				■			-
	Square direct manually operated	■				■				■				■			-
	Round extended manually operated	■				■				■				■			-
	Square extended manually operated	■				■				■				■			-
	Phase partition	■				■				■				■			■
Independent accessory installation		■				■				■				-			-
Isolating function		■				■				■				■			■
Use class		Class A				Class A				Class A				Class A			Class A
Certification		CCC, KEMA				CCC, KEMA				CCC, KEMA				CCC, KEMA			CCC
Dimensions–Fixedfront connection W*H*D	3P(mm)	107*165*76		107*165*88		150*257*107.5				150*257*107.5				210*280*100			210*406*190
	4P(mm)	142*165*76		142*165*88		198*257*107.5				198*257.107.5				280*280*100			-
Weight	Fixed 3/4P(kg)	1.53/2.03		1.53/2.03		4.60/5.05				5.10/6.24				7.34/9.68			18.98

Remark
For CDM3-63/100/125AF, the rated current under 40 A, the protection function works at least at 400A; for the others, 10/12In.
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Low-Voltage Distribution Protection

Fixed thermomagnetic release
CDM3 63-1250A

Rated current(A) at 40℃ In		10	16	20	25	32	40	50	63	70	80	100	125	140	150	160	175	180	200	225	250	300	315	350	400	450	500	600	630	700	800	1000	1250
Circuit breaker	63	■	■	■	■	■	■	■	■																								
	100	■	■	■	■	■	■	■	■	■	■	■																					
	160											■	■	■		■																	
	250											■	■	■	■	■	■	■	■	■	■												
	400																		■	■	■	■	■	■	■								
	630																								■	■	■	■	■				
	800																												■	■	■		
	1250																														■	■	■
Overload protection: thermal protection (Ir)																																	
Tripping current value (A)		Fixed (1.3In)																															
Short circuit current protection(magnetic protection)																																	
Tripping current value (A)		Fixed (10In)																															

Protection

The circuit breaker equipped with TM thermomagnetic release is mainly for protection of the cable, which is on the power distribution system for transformer power supply.

Overload protection: thermal protection (Ir)

The overload protection function provides inverse time limit curve on the basis of bimetal. If the limit is exceeded, the deformation of the bimetal can lead in the tripping of the circuit breaker operating mechanism.

Short circuit protection: magnetic protection (Ii)

Magnetic protection achieves short circuit protection through a magnetic trip device. The circuit breaker will trip instantaneously Short circuit protection Ii non-adjustable

De-rating table for application at higher ambient temperature

Frame	Ambient temprature				
	40	45	50	55	60
CDM3-63/100S/125S	1	0.96	0.89	0.83	0.75
CDM3-100F/N CDM3L-125	1	0.96	0.89	0.83	0.75
CDM3-160A/250A CDM3L-160A/250A	1	0.92	0.85	0.79	0.71
CDM3-400A/630A CDM3L-400	1	0.94	0.87	0.81	0.73
CDM3-800A CDM3L-630	1	0.95	0.88	0.82	0.74
CDM3-1250A	1	0.95	0.88	0.82	0.74

CDM3 Motor protection

The motor feeder circuit protection parameters depend on:

- Application (driven equipment type, operation safety and operation frequency, etc.)
- Load or application continuity grade
- Applicable life and property protection standards

Required electrical functions:

- Power on/off, generally at a high withstand current level
- Applicable for the overload and short circuit protection of motor
- Additionally special protection

The motor feeder circuit must comply with the requirements

- Coordination between feeder circuit components
- Tripping class of thermal relay
- Use class of contactor
- Insulation coordination

Overload: I < 10*In

Causes:

- Electrical fault caused by power distribution system abnormalities (such as open phase, overvoltage or undervoltage)
- Mechanical problems caused by operation mistake (such as excessive torque) or motor damage (such as bearing vibration) will result in long startup time.

Impedance short circuit: 10*In < I < 50*In

Such short circuit is generally caused by motor winding insulation deterioration or power cable damage.

Short circuit: I > 50*In

Such faults are relatively few and generally caused by connection error during maintenance.

Motor feeder circuit functions

The motor feeder circuit comprises a set of devices for motor protection and control and feeder circuit self-protection.

Isolation

The energized conductors and upper-end distribution system are isolated, so that the maintenance personnel can maintain the motor feeder circuit without risk. The function is achieved by the motor protection circuit breaker and shall be provided with the reliable indicator of the contact indicating position.

Power on/off

Manually, automatically or remotely control the motor (ON/OFF) and consider the overload at startup and the service life. The function is realiezed by the contactor. The contactor will be closed when the coil of the contactor is electrified. The upper power and the motor circuit will be connected through the circuit breaker.

Basic protection

- Short circuit protection:
  Detect and break the large short circuit current as soon as possible to avoid damage to the equipment. The function is achieved by the circuit breaker with magnetic protection or with electronic trip unit.
- Overload protection:
  Detect the overload current and turn off the motor before the insulation is damaged due to temperature rise of the motor and conductor. The function can be achieved by a thermomagnetic protection circuit breaker or an independent thermal relay.
- Phase imbalance or open-phase protection:
  Phase imbalance or open phase will trigger temperature rise and braking torque, which may lead to premature aging of the motor. These effects are particularly prominent during startup, and thus the protection shall be very fast.

Motor feeder solutions

The standard IEC 60947 defines three types of component combinations to protect the motor feeder circuit.

- Three components
  Magnetic protection circuit breaker + contactor + thermal relay

- Two components
  Circuit breaker with overload and short circuit protection + contactor

- One component
  Circuit breaker with overload and short circuit protection + contactor integrated in a solution

Equipment coordination

The components in the motor feeder circuit shall cooperate with each other. IEC60947-4-1 standard defines three types of coordination according to the equipment operating conditions and the short circuit detection standard.

Type 1 coordination

No life or property limited
Contactor or thermal relay may be damaged
Repair and replacement may be required before continuing.

Type 2 coordination

No life or property risks
Damage or adjustment is not allowed. The risks of adhesive contacts can be accepted, but shall be easily separated and isolated after accidents The motor feeder may continue to use without repair or replacement of components
Quick check is enough before back into use

3 Perfect coordination

The equipment constituting the motor feeder circuit shall not have the risk of damage or contacts welding.
The motor feeder may continue to use without repair or replacement of components In this type of coordination, an integrated equipment provides the solution.

Contactor use type

For a given motor feeder program, the use class determines the contactor resistance capacity on operating frequency and life. Selection based on the operation conditions of the application may be because of excessive protection of contactor and circuit breaker. IEC60947 standard defines the following use classes of the contactor

Contactor use class	Load type	Control function	Typical application
AC-1	Non-inductive	Electrify	Heating and power distribution
AC-2	Slip ring motor	Start Turn off the motor during operation Countercurrent braking Inching	Drawbench
AC-3	Squirrel-cage motor	Start Turn off the motor during operation	
AC-4		Start Turn off the motor duringoperation Regenerative braking Anti-phase braking Inching	Printing press, drawbench

- Common coordination table of circuit breaker and contactor with the use class of AC-3
- This class covers the squirrel-cage asynchronous motor, which the most common situation (accounting for 85%) The contactor can connect the starting current and cut off the rated current at 1/6 nominal voltage. The current shall be cut off without any obstacles and difficulties.CDM3 circuit breaker – contactor coordination table applies to the contactors with AC-3 use class, which can guarantee type 2 coordination.
- Use class AC-4 may require enlarging the specifications.
- The use class covers the squirrel-cage asynchronous motors which can operate under regenerative braking or inching (frequent start). The contactor can start and cut off the current under the system voltage. Due to these difficulties, the specifications of the contactors and the protection circuit breakers corresponding to class AC-3 shall be enlarged.

Motor feeder circuit characteristics and solutions

Trip level of thermal protection equipment

The motor feeder circuit includes the thermal protection contained in the circuit breaker. The protected trip level shall be in line with the motor start level. The starting time of the motor ranges from several seconds (no-load starting) to tens of seconds (high-inertia load) according to the specific applications. IEC60947-4-1 standard defines the following trip levels as the settings of thermal protection current Ir.

Thermal relay trip level as settings of Ir				
Level	1.05Ir	1.2Ir	1.5Ir	7.2Ir
5	t>2h	t<2h	t<2min	2s<t<5s
10	t>2h	t<2h	t<4min	4s<t<10s
20	t>2h	t<2h	t<8min	6s<t<20s
30	t>2h	t<2h	t<12min	9s<t<30s

Current of squirrel-cage motor in full load conditions

Standard value with the unit of HP (horsepower)

Rated operating power	Rated operational current In(A)						
hp	110-120V	200V	208V	220-240V	380-415V	440-480V	550-600V
1/2	4.4	2.5	2.4	2.2	1.3	1.1	0.9
3/4	6.4	3.7	3.5	3.2	1.8	1.6	1.3
1	8.4	4.8	4.6	4.2	2.3	2.1	1.7
1 1/2	12	6.9	6.6	6	3.3	3	2.4
2	13.6	7.8	7.5	6.8	4.3	3.4	2.7
3	19.2.	11	10.6	9.6	6.1	4.8	3.9
5	30.4	17.5	16.7	15.2	9.7	7.6	6.1
7 1/2	44	25.3	24.2	22	14	11	9
10	56	32.2	30.8	28	18	14	11
15	84	48.3	46.2	42	27	21	17
20	108	62.1	59.4	54	34	27	22
25	136	78.2	74.8	68	44	34	27
30	160	92	88	80	51	40	32
40	208	120	114	104	66	52	41
50	260	150	143	130	83	65	52
60	-	177	169	154	103	77	62
75	-	221	211	192	128	96	77
100	-	285	273	248	165	124	99
125	-	359	343	312	208	156	125
150	-	414	396	360	240	180	144
200	-	552	528	480	320	240	192
250	-	-	-	604	403	302	242
300	-	-	-	722	482	361	289

Note: 1 hp=0.7457 W

Startup parameters of asynchronous motor

The main parameters (meeting 90% applications) of the direct startup of the three-phase asynchronous motors are shown as follows
Ir: Rated current

Startup parameters of asynchronous motor

Current of the motor under rated full load conditions (such as about 100Arms at voltage and 55kW power) 400V
Id: Starting current
Current at motor startup. Depending on the specific applications, the starting time td is 5-30s and the average starting current is 7.2In (such as RMS current of 720A at 10s). These values determine the trip level and all other required "long start" protective equipment.
I"d: Peak starting current
Transient current between the first two half-wave periods after the system is powered:10-15ms, Average of 14In (such as peak 1840A)
By selecting appropriate thermal relay trip level, the protection settings must be able to effectively protect the motor and allow passing the peak starting current.

CDM3 motor feeder circuit solutions

CDM3 motor protection series
CDM3 trip unit can be used to constitute the two equipments motor feeder circuit solutions.

Three-element solution

A CDM3 circuit breaker with magnetic protection (3200)
A CDC6 contactor
A CDR6 thermal relay

Two-element solution

A CDM3 circuit breaker with magnetic protection (3300)
A CDC6 contactor

Three-element solution section table

U=220/240V

Motor P(kw)	I(A) 220V	I(A) 240V	In maximum (A)	Circuit breaker type	Rated current	Irm (A)	Contactor type	Thermal relay type	Irth (A)
1.1	5	4.5	6	CDM3-32XX2	10	82	CDC6-0911	CDR6-18 5~7A	4/6
1.5	6.5	6	8	CDM3-32XX2	16	113	CDC6-0911	CDR6-18 6.3~9A	5.5/8
2.2	9	8	10	CDM3-32XX2	16	138	CDC6-1211	CDR6-18 9~12A	7/10
3	12	11	12.5	CDM3-32XX2	16	163	CDC6-1811	CDR6-18 11~15A	9/13
4	15	14	18	CDM3-32XX2	25	250	CDC6-1811	CDR6-18 14~18A	12/18
5.5	21	19	25	CDM3-32XX2	25	325	CDC6-2511	CDR6-32 23~32A	17/25
6.3	24	22	25	CDM3-32XX2	25	325	CDC6-2511	CDR6-32 23~32A	17/25
7.3	28	25	32	CDM3-32XX2	50	450	CDC6-3211	CDR6-32 23~32A	23/32
10	36	33	40	CDM3-32XX2	50	550	CDC6-4011	CDR6-95 37~50A	30/40
11	39	36	40	CDM3-32XX2	50	550	CDC6-4011	CDR6-95 37~50A	30/40
15	52	48	63	CDM3-32XX2	100	700	CDC6-6511	CDR6-95 55~70A	48/65
18.5	63	59	63	CDM3-32XX2	100	900	CDC6-6511	CDR6-95 55~70A	48/65
22	75	70	80	CDM3-32XX2	100	1100	CDC6-8011	CDR6-95 80~95A	63/80
30	100	95	100	CDM3-32XX2	160	1300	CDC6-115	CDR6-185 90~115A	60/100
37	125	115	150	CDM3-32XX2	160	1950	CDC6-150	CDR6-185 130~160A	90/150
45	150	140	150	CDM3-32XX2	160	1950	CDC6-150	CDR6-185 130~160A	90/150
55	180	170	185 220	CDM3-32XX2	200 320	2420 2880	CDC6-225	CDR6-630 180~250A	132/220
75	250	235	265	CDM3-32XX2	320	3500	CDC6-265	CDR6-630 230~320A	200/330
90	300	270	320	CDM3-32XX2	320	4160	CDC6~330	CDR6~630 290~400A	200/330

Three-element solution section table

U=380/415V

Motor P(kw)	I(A) 220V	I(A) 240V	In maximum (A)	Circuit breaker type	Rated current	Irm (A)	Contactor type	Thermal relay type	Irth (A)
2.2	5.3	4.8	6	CDM3-32XX2	10	82	CDC6-0911	CDR6-18 5~7A	4/6
3	7	6.5	8	CDM3-32XX2	16	113	CDC6-0911	CDR6-18 6.3~9A	5.5/8
4	9	8.2	10	CDM3-32XX2	16	138	CDC6-1211	CDR6-18 9~12A	7/10
5.5	12	11	12.5	CDM3-32XX2	16	163	CDC6-1811	CDR6-18 11~15A	9/13
7.5	16	14	18	CDM3-32XX2	25	250	CDC6-1811	CDR6-18 14~18A	12/18
10	21	19	25	CDM3-32XX2	25	325	CDC6-2511	CDR6-32 23~32A	17/25
11	23	21	25	CDM3-32XX2	25	325	CDC6-2511	CDR6-32 23~32A	17/25
15	30	28	32	CDM3-32XX2	50	450	CDC6-3211	CDR6-32 23~32A	23/32
18.5	37	34	40	CDM3-32XX2	50	550	CDC6-4011	CDR6-95 37~50A	30/40
22	43	40	50	CDM3-32XX2	50	650	CDC6-4011	CDR6-95 37~50A	37/50
30	59	55	63	CDM3-32XX2	100	900	CDC6-6511	CDR6-95 55~70A	48/65
37	72	66	80	CDM3-32XX2	100	1100	CDC6-6511	CDR6-95 80-95A	63/80
45	85	80	100	CDM3-32XX2	100	1300	CDC6-8011	CDR6-95 90-115A	60/100
55	105	100	115	CDM3-32XX2	160	1500	CDC6-115	CDR6-185 90~115A	90/150
75	140	135	150	CDM3-32XX2	160	1950	CDC6-150	CDR6-185 130~160A	90/150
90	170	160	185	CDM3-32XX2	200	2420	CDC6-150	CDR6-185 180~250A	132/220
110	210	200	220	CDM3-32XX2	250 320	2860 2880	CDC6-225	CDR6-630 180~250A	132/220
132	250	230	265	CDM3-32XX2	320	3500	CDC6-265	CDR6-630 230~320A	200/330
160	300	270	320	CDM3-32XX2	320	4160	CDC6~330	CDR6~630 290~400A	200/330

CDM3 motor feeder circuit solutions

Three-element solution section table

U=220/240V

Motor P(kw)	I(A) 220V	I(A) 240V	In maximum (A)	Circuit breaker type	Rated current	Irm (A)	Contactor type	Irth (A)
1.1	5	4.5	6	CDM3-32XX2	10	82	CDC6-0911	4/6
1.5	6.5	6	8	CDM3-32XX2	16	113	CDC6-0911	5.5/8
2.2	9	8	10	CDM3-32XX2	16	138	CDC6-1211	7/10
3	12	11	12.5	CDM3-32XX2	16	163	CDC6-1811	9/13
4	15	14	18	CDM3-32XX2	25	250	CDC6-1811	12/18
5.5	21	19	25	CDM3-32XX2	25	325	CDC6-2511	17/25
6.3	24	22	25	CDM3-32XX2	25	325	CDC6-2511	17/25
7.3	28	25	32	CDM3-32XX2	50	450	CDC6-3211	23/32
10	36	33	40	CDM3-32XX2	50	550	CDC6-4011	30/40
11	39	36	40	CDM3-32XX2	50	550	CDC6-4011	30/40
15	52	48	63	CDM3-32XX2	100	700	CDC6-6511	48/65
18.5	63	59	63	CDM3-32XX2	100	900	CDC6-6511	48/65
22	75	70	80	CDM3-32XX2	100	1100	CDC6-8011	63/80
30	100	95	100	CDM3-32XX2	160	1300	CDC6-115	60/100
37	125	115	150	CDM3-32XX2	160	1950	CDC6-150	90/150
45	150	140	150	CDM3-32XX2	160	1950	CDC6-150	90/150
55	180	170	185 220	CDM3-32XX2	200 320	2420 2880	CDC6-225	132/220
75	250	235	265	CDM3-32XX2	320	3500	CDC6-265	200/330
90	300	270	320	CDM3-32XX2	320	4160	CDC6~330	200/330

Three-element solution section table

U=380/415V

Motor P(kw)	I(A) 220V	I(A) 240V	In maximum (A)	Circuit breaker type	Rated current	Irm (A)	Contactor type	Irth (A)
2.2	5.3	4.8	6	CDM3-32XX2	10	82	CDC6-0911	4/6
3	7	6.5	8	CDM3-32XX2	16	113	CDC6-0911	5.5/8
4	9	8.2	10	CDM3-32XX2	16	138	CDC6-1211	7/10
5.5	12	11	12.5	CDM3-32XX2	16	163	CDC6-1811	9/13
7.5	16	14	18	CDM3-32XX2	25	250	CDC6-1811	12/18
10	21	19	25	CDM3-32XX2	25	325	CDC6-2511	17/25
11	23	21	25	CDM3-32XX2	25	325	CDC6-2511	17/25
15	30	28	32	CDM3-32XX2	50	450	CDC6-3211	23/32
18.5	37	34	40	CDM3-32XX2	50	550	CDC6-4011	30/40
22	43	40	50	CDM3-32XX2	50	650	CDC6-5011	37/50
30	59	55	63	CDM3-32XX2	100	900	CDC6-6511	48/65
37	72	66	80	CDM3-32XX2	100	1100	CDC6-8011	63/80
45	85	80	100	CDM3-32XX2	100	1300	CDC6-115	60/100
55	105	100	115	CDM3-32XX2	160	1500	CDC6-115	90/150
75	140	135	150	CDM3-32XX2	160	1950	CDC6-150	90/150
90	170	160	185	CDM3-32XX2	200	2420	CDC6-185	132/220
110	210	200	220	CDM3-32XX2	250 320	2860 2880	CDC6-225	132/220
132	250	230	265	CDM3-32XX2	320	3500	CDC6-265	200/330
160	300	270	320	CDM3-32XX2	320	4160	CDC6~330	200/330

Operating conditions

Altitude derating

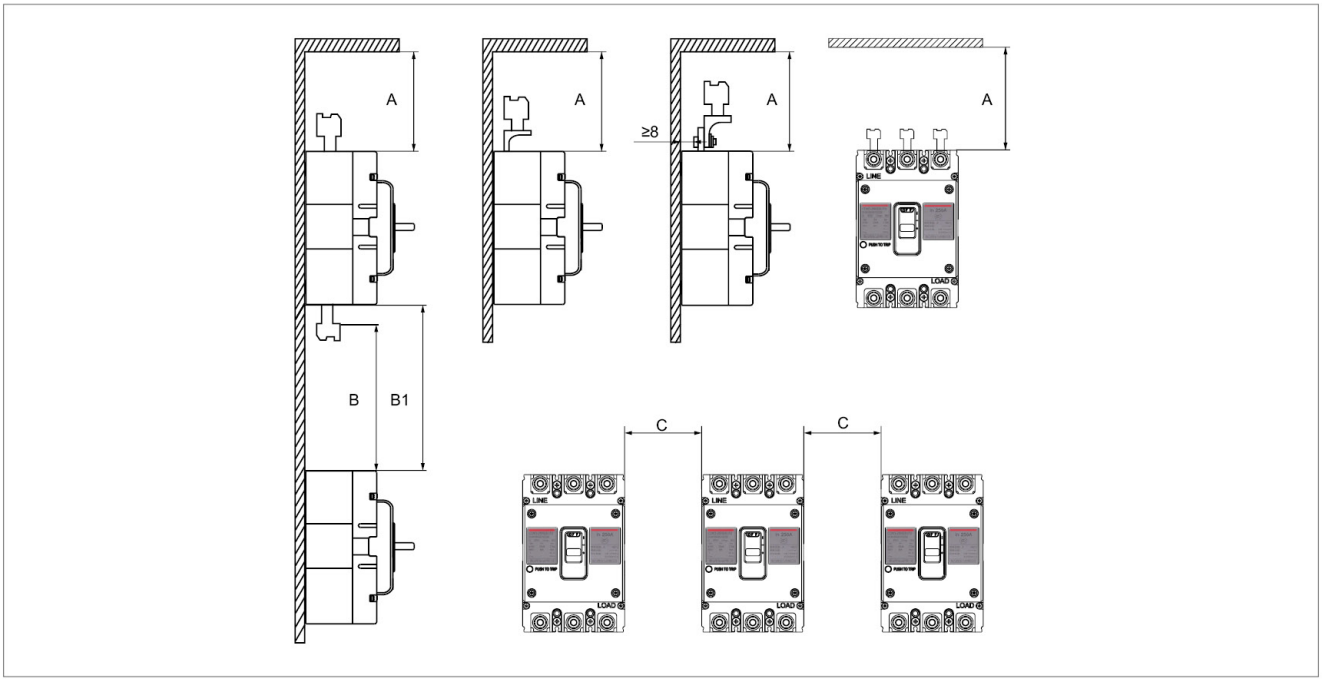
The circuit breaker features will not be affected if the altitude is below 2000m. The air insulation ability and cooling capacity shall be considered if the altitude is above 2000m.

Impact of altitude on the release performance

Altitude	2000m	3000m	4000m	5000m
Maximum working voltage (V)	415	350	310	270
Rated heat value at 40℃ (A)	In	0.96In	0.93In	0.9In
Average insulation voltage (V)	800	700	600	500
Dielectric strength (V)	3000	2500	2100	1800

Safety clearance

Safety clearance (Works for whole series)



Safety clearance (Works for whole series)

Circuit breaker model	A(mm)	b(mm)	B1(mm)	C(mm)
63A 100A 160A 250A	60	60	Bare cable length+B	30
400A 630A 800A 1250A	110	110		70

Note:Regardless of whether the product has accessories, the product must meet the C spacing requirements

Altitude deratingTemperature affect characteristics

Impact of high temperature on the release performance(high-temperature degrading characteristics)
The overload protection ability will be changed slightly when the temperature exceeds 40℃ . In the tripping curve chart, Ir , the setting value of the circuit breaker must be corrected according to the following factors.

Circuit breaker mode	Environment temperature ° C				
	40	45	50	55	60
CDM3-63/100S/125S	1	0.96	0.89	0.83	0.75
CDM3-100FN/125T CDM3L-125	1	0.96	0.89	0.83	0.75
CDM3-160A/250A CDM3L-160/250	1	0.92	0.85	0.79	0.71
CDM3-400A/630A CDM3L-400	1	0.94	0.87	0.81	0.73
CDM3-800A CDM3L-630	1	0.95	0.88	0.82	0.74
CDM3-1250A	1	0.95	0.88	0.82	0.74

Total power consumption of three poles

Circuit breaker mode	Rated current	Front connection (standard configuration)	Rear connection	Plug-in connection	Withdrawable connection
CDM3-63/100S/125S	63/100/125	24/26/28	27/29/31	28/29/32	-
CDM3-100FN/125T	100	40	50	50	-
CDM3-160A/250A	160/250	60/63	87/90	87/90	-
CDM3-400A/630A	400/630	115/180	120/190	125/200	128/205
CDM3-800A	800	200	230	290	300
CDM3-1250A	1250	250	-	-	-

CDM3 installation mode

CDM3 circuit breakers have three installation modes, i.e. fixed, plug-in and withdrawable.

F

Fixed

- Same upper and lower terminals
- It can be directly connected to the busbar or connected to the cables with the extensive terminals
- Fixed rear terminal: facilitate the installation and connection of the product after the panel
- The circuit breaker has 7
  CDM3-63/100L/S
  CDM3-100M/F/T/N
  CDM3-160L/S, CDM3-250S/L
  CDM3-160M/F/T/N,CDM3 M/F/
  T/N
  CDM3-400/630
  CDM3-800

P

Plug-in

- The plug-in structure is achieved by adding "plugin suite" on the fixed circuit breaker
- Pull out or rapidly change the circuit breaker without contacting the loading and outing lines and the installation base
- The plug-in base can be preinstalled to facilitate increase of circuit breakers later
- It can isolate the power cable when it is installed with baseplate
- The circuit breaker can be pulled out when loosening the upper and lower set screws.

W

Withdrawable

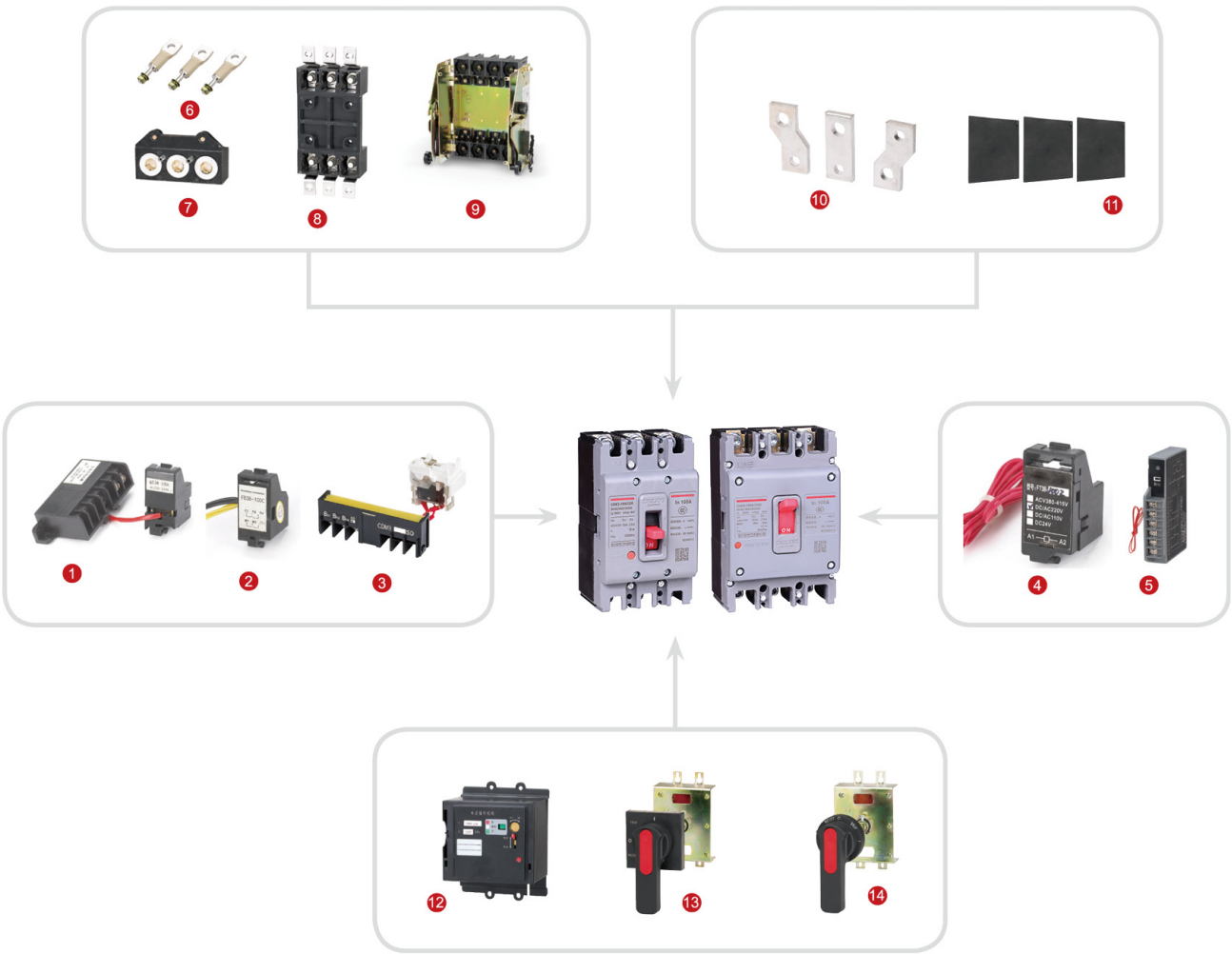
- The withdrawable structure is to install two side plates respectively on the base and the circuit breaker. Similar to the plug-in configuration, the withdrawable circuit breaker has all advantages of the plug-in circuit breaker and is very easy to operate. The withdrawable type is similar to the plug-in type, with all the advantages of it, and easily operating.
- The withdrawable circuit breaker has three positions:
  -Connected: the power supply circuit is connected
  -Testing: the power supply circuit is connected and the circuit breaker can be operated to check the auxiliary circuit
  -Disconneted: the circuit breaker can be removed from the base

	FF	FR	PF	PR	WD
	Fixed front	Fixed rear	Plug-in frontPlug-inrear	Plug-in rear	Withdrawable
CDM3-63	■	■	■	■	
CDM3-100	■	■	■	■	
CDM3-160	■	■	■	■	
CDM3-250	■	■	■	■	
CDM3-400	■	■	■	■	
CDM3-630	■	■	■	■	■
CDM3-800	■	■	■		■
CDM3-1250	■				■

CDM3- List of accessories

Electrical accessories: shunt release, undervoltage release, auxiliary contact, alarm contact, auxiliary alarm integrated release and leakage alarm module Mechanical accessories: interphase barriers, extension terminal, manual operating mechanism and electric operating mechanism.

Overview of Acc



① Undervoltage release
② Auxiliary contact
③ Alarm contact
④ Shunt release
⑤ Leakage alarm module
⑥ Fixed rear connection
⑦ Plug-in rear connection
⑧ Plug-in front connection
⑨ Withdrawable connection
⑩ Extension terminal
⑪ interphase barriers
⑫ Electric operating mechanism
⑬ Square handle operating mechanism
⑭ Round handle operating mechanism

CDM3 Mechanical accessories

Interphase barriers

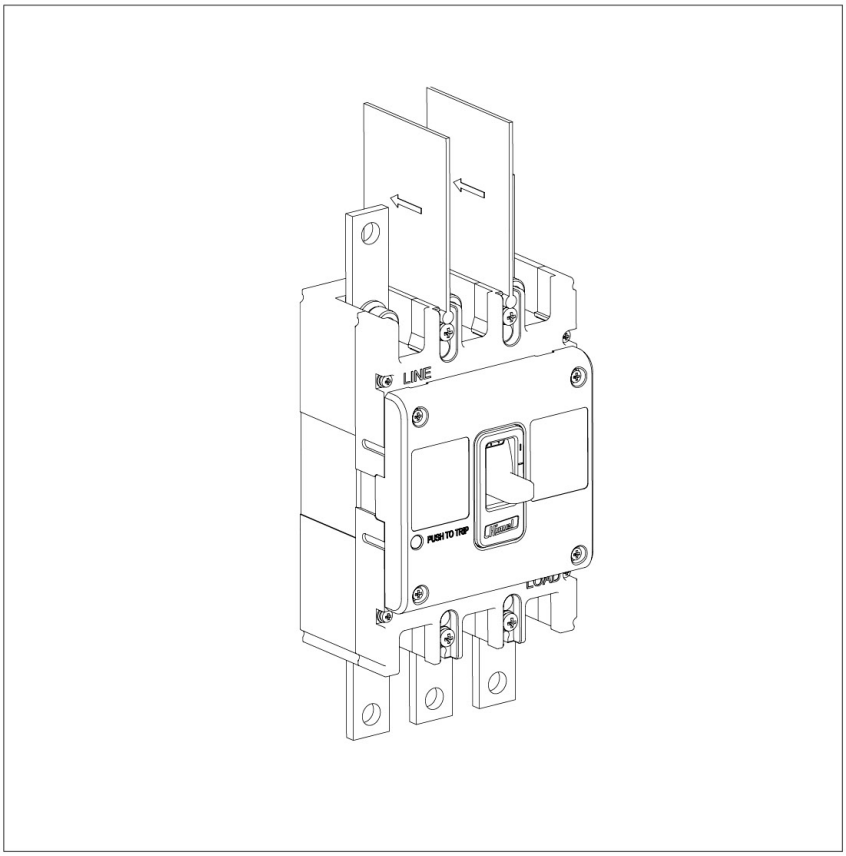
The interphase barriers can enhance the insulating performances of the conductors between the phases .They can be installed from the front slot even after the switch is installed.

Standard offer 4pcs (3P) or 6pcs (4P) interphase barriers
Extension terminals

The extension terminal is connected to the standard terminal of the circuit breaker, so as to provide many other wiring schemes in the limited space:

- Direct extension terminal
- Extension terminal with inter-electrode distance

The busbar and extension terminal can be connected to the inlet or outlet terminal of the circuit breaker.



Handle operating mechanism

The circuit breaker can be operated by the rotation of the handle and the ergonomically designed rotation handle makes the operation of the circuit breaker more flexible.

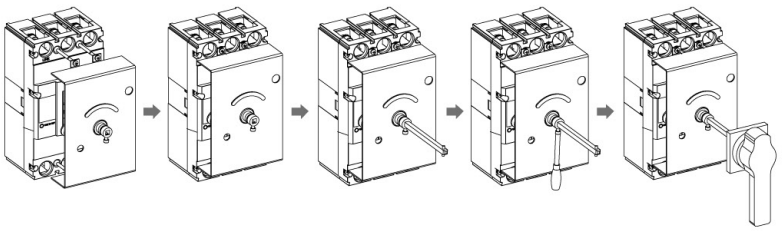
2 types of rotation handle operating mechanisms

- Direct rotation handle (round handle operating mechanism and square handle operating mechanism)
- Extended rotation handle (round extending handle operating mechanism and square extended handle operating mechanism)

User visualization information/settings

- 3 position indications: OFF, ON and TRIP
- The circuit breaker cannot be switched on when the door is open
- The door cannot be opened when the circuit breaker is switched on
- The axial length of the extended handle can be custom made according to the distance from the back of the circuit breaker to the door.

Schematic Diagram of Handle Operating Mechanism Installation



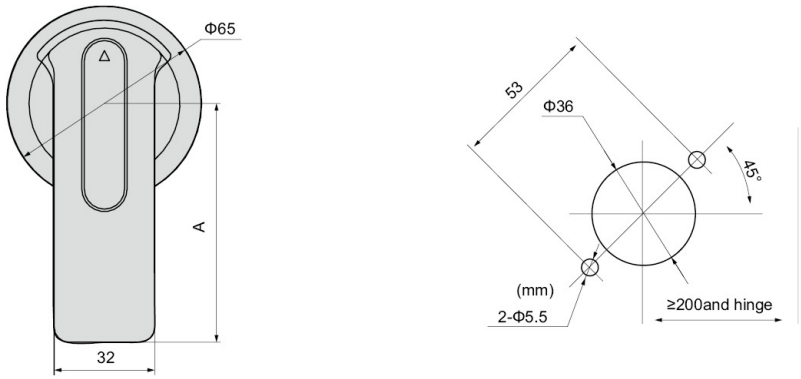
1. Align to the installation direction of the mechanism
2. Tighten the mounting screws
3. Install the lengthened screw
4. Fix the screw
5. Install the lengthened handle

CDM3 Mechanical accessories

Round handle operating mechanism

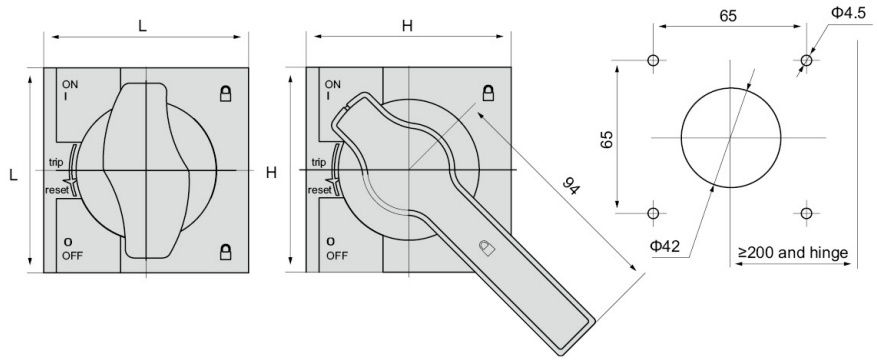
Circuit breaker mode	A	Remark
CDM3-63/100S/125S	65	Size A: 65 or 95 optional, default to 65
CDM3-100F/N/125T	65	
CDM3-160/250A	65	
CDM3-400/630A	95	
CDM3-800A	95	Size A: 95 or 125 optional, default to 95

Accessory size



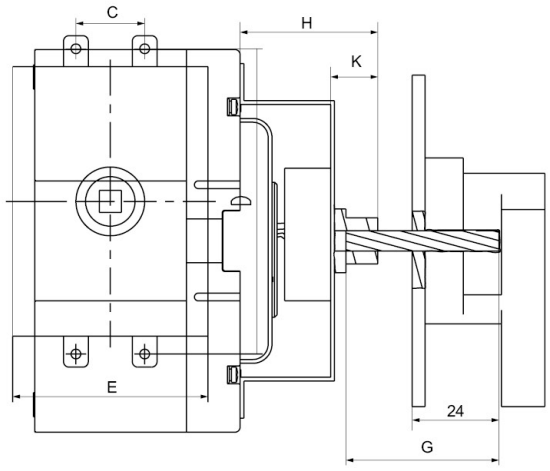
Square handle operating mechanism

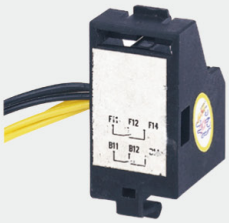
Circuit breaker mode	L	H
CDM3-63/100S/125S	80	80
CDM3-100F/N/125T	80	80
CDM3-160/250A	80	80
CDM3-400/630A	80	80
CDM3-800A	80	80

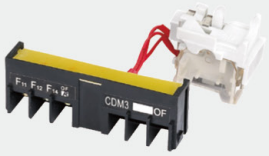


Square handle operating mechanism

Circuit breaker mode	C	D	E	H	K
CDM3-63/100S/125S	25	111	71	54	20
CDM3-100F/N/125T	30	129	92	57	20
CDM3-160/250A	35	143	100	54	20
CDM3-400/630A	44	215	150	78	20
CDM3-800A	70	243	-	76	20







Electrical accessories

Auxiliary contact and alarm contact

Auxiliary contact

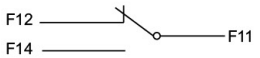
An accessory connected in the auxiliary circuit of the switching device to indicate the circuit breaker status of ON or OFF or Trip

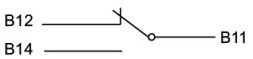
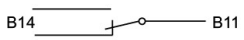
Alarm contact

An accessory used to indicate the circuit breaker status of ON or OFF or Trip. When the alarm contact indicates that the circuit breaker is at Trip status, there are the following five possibilities:

- Overload or short circuit fault
- Residual current fault
- Manual test button trip
- Shunt release action
- Line fault and undervoltage release action

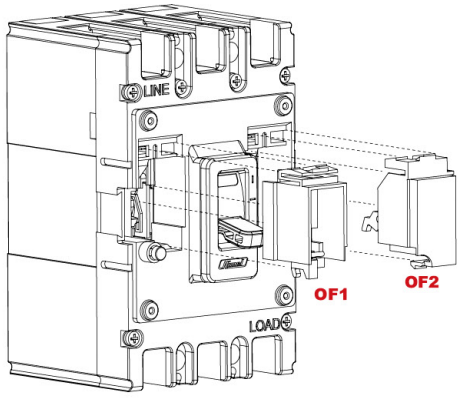
Electrical wiring diagram

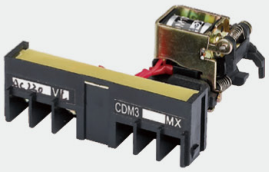
Accessory name	ON	OFF/TRIP
Auxiliary		

Accessory name	ON	OFF/TRIP
Alarm		

Electrical parameters of auxiliary alarm contact			
Conventional Thermal Current		3A	
Thermal Current Use class (IEC/EN 60947-2)		AC 15	DC13
Working electricity 50Hz	AC 400V	0.3A	
Electricty 50HZ	DC 220V		0.15A

Installation diagram of auxiliary contact





Shunt release

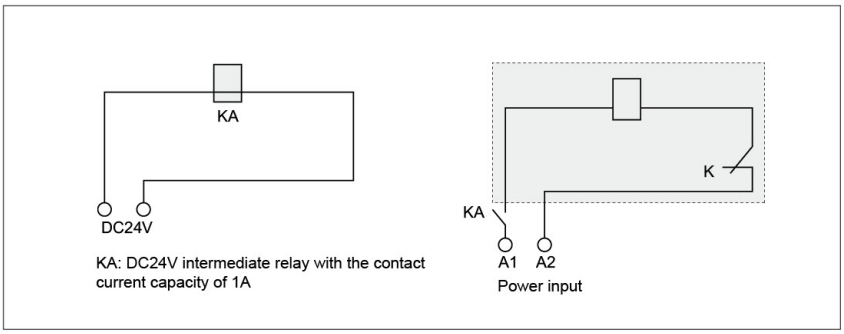
- The shunt release shall reliably trip the circuit breaker at the voltage between 70% and 110% of the rated control power voltage U.
- The circuit breaker shall be reset on the spot after tripping through the shunt release.

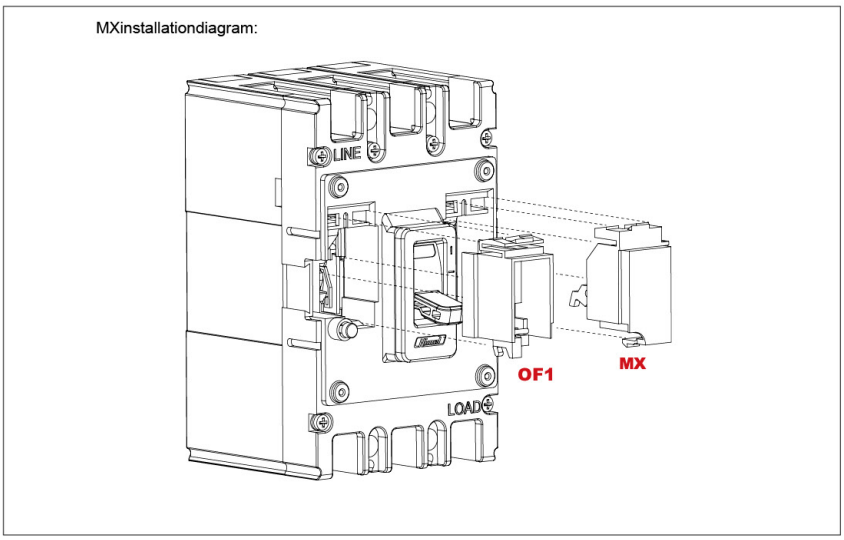
	Shunt coil power consumption(W)		
	AC400V	AC230V	DC24V
CDM3-63/100S/125S	91.6	76.1	91.2
CDM3-100F/N/125T	96.8	73	91.2
CDM3-160/250	112	68.6	85.3
CDM3-400	67	62.3	100
CDM3-630	68	58.2	100
CDM3-800	163	153	120
CDM3-1250	183	175	140

When the rated control voltage of the shunt release is DC24V, the maximum length of the copper wire shall meet the following requirements:

Wire area / Rated control power voltage Uc (DC24V)	1.5mm^2	2.5mm^2
100% Uc	150mm	250mm
85% Uc	100mm	160mm

If not meeting the requirements above, it is recommended to use the figure below to design the shunt release control loop:





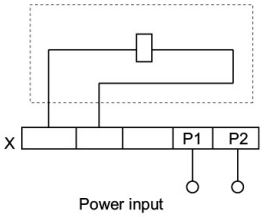
Electrical accessories

Undervoltage release

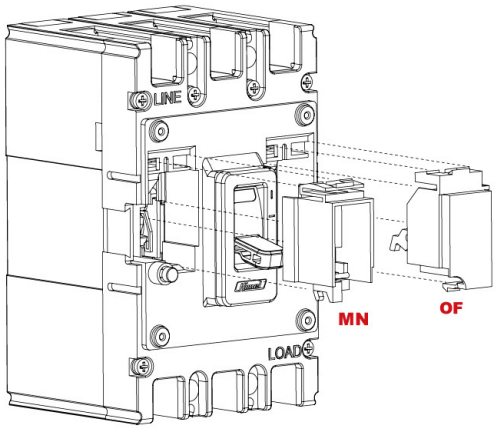
- The undervoltage release shall reliably trip the circuit breaker at the voltage between 35% and 70% of the rated operational voltage;
- The undervoltage release shall ensure that the circuit breaker can be switched on at the voltage between 85% and 110% of the rated operational voltage;
- The undervoltage release shall prevent the circuit breaker from switching on when voltage is below 35%of the rated operational voltagethe

	Undervoltage coil power consumption(W)	
	AC400V	AC230V
CDM3-63/100S/125S	4	3.1
CDM3-100F/N/125T	3.9	3.2
CDM3-160/250	4.3	3.3
CDM3-400	3.6	2.5
CDM3-630	3.4	2.5
CDM3-800	2	1.6
CDM3-1250	2	1.6

Electric wiring diagram of undervoltage release
Wiring diagram
Note: X- terminal block
Note: In the dashed box,
it is the wiring diagram of accessories in the circuit breaker.



Installation diagram of undervoltage release:



Leakage alarm module (leakage MCCB accessory)

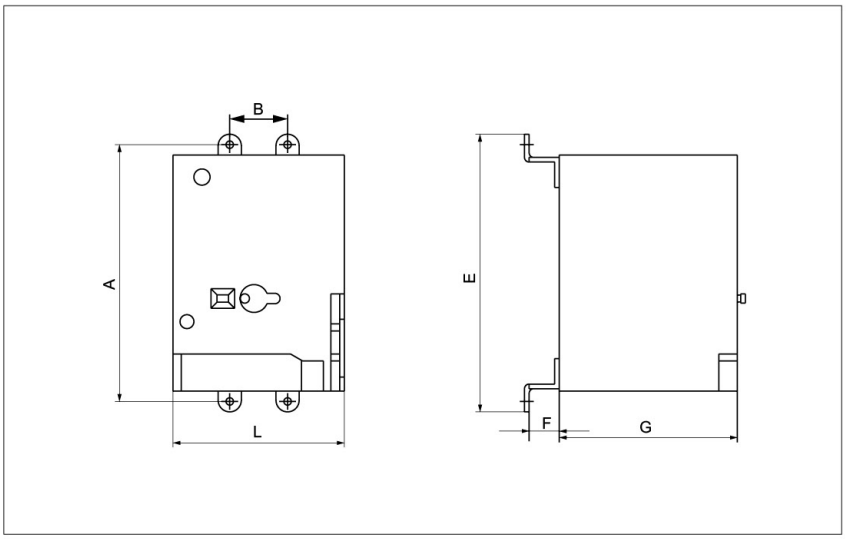
- Leakage with no tripping function. It can be applied in the situation when the leakage reaches the alarm limit but the system power interruption will not work.
- The alarm function of this acc is realized by the LED’ s light. When there’ s red light, it indicates that the leakage in the system exceeds the calibrated value. In this situation, normally open contacts turns into normally closed , and normally closed contacts turn into normally open.

Electric operating mechanism

- Apply to remote electric connection, disconnection and re-trip of the circuit breaker and the automation control occasions.
- Rated voltage of electric operating mechanism: AC400V,AC230V,DC220V
- Operating voltage range of electric operating mechanism: 85%-110% Ue
- There are two types of electric operating mechanisms:
  CD1 AC electric operating mechanism(CDM3-800/1250)
  CD2 General electric operating mechanism for AC and DC(CDM3-63~630)
- CD2 electric operating voltage and tolerance range:
  CD2:63A-250A:Operating frequency ≤ 180times/hour and actuation; time ≤ greater than 0.7S
  CD2:400A-630A:Operating frequency of ≤ 60times/hour; actuation time ≤ 1S
- The voltage tolerance range is 184~253VAC/187~242VDC when the rated control power voltage is 230VAC/220VDC.
  The voltage tolerance range is 320~440VAC when the rated control power voltage is 400VAC.
  The voltage tolerance range is 184~253VAC when the rated control power voltage is 230VAC (CD1-1250).
  As for different operating forces of the circuit breaker, the switch with relatively small force can be normal.

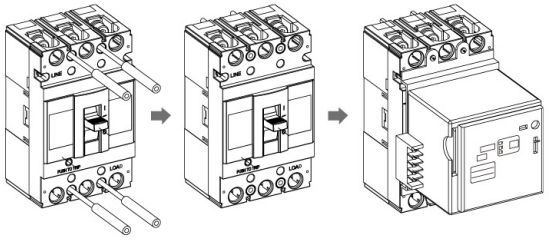
Parameters and installation dimensions of electric operating mechanism

Circuit breaker mode	A	B	E	F	G	L
CDM3-63/100S/125S	111	25	120	13	79	74
CDM3-100F/N/125T	129	30	140	14	77	90.5
CDM3-160/250A	126	35	140	17	77	90.5
CDM3-400/630A	215	44	232	32	115	130
CDM3-800A	243	70	-	16	112	-



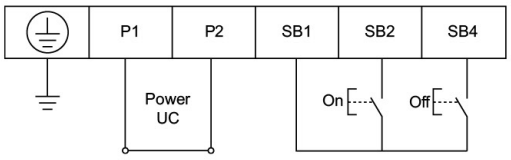
Electrical accessories

Installation drawing of CD2 electric operating mechanism



After tripping of the breaker with an electrically operated mechanism, the electrically operated mechanism must be opened first before closed.

Electric wiring diagram of CD2 electric operating mechanism
AC230V、AC400V and DC220V



CDM3 Installation sites of CDM3 electric accessories

□ Alarm contact ■ Auxiliary contact ● Shunt release ○ Undervoltage release

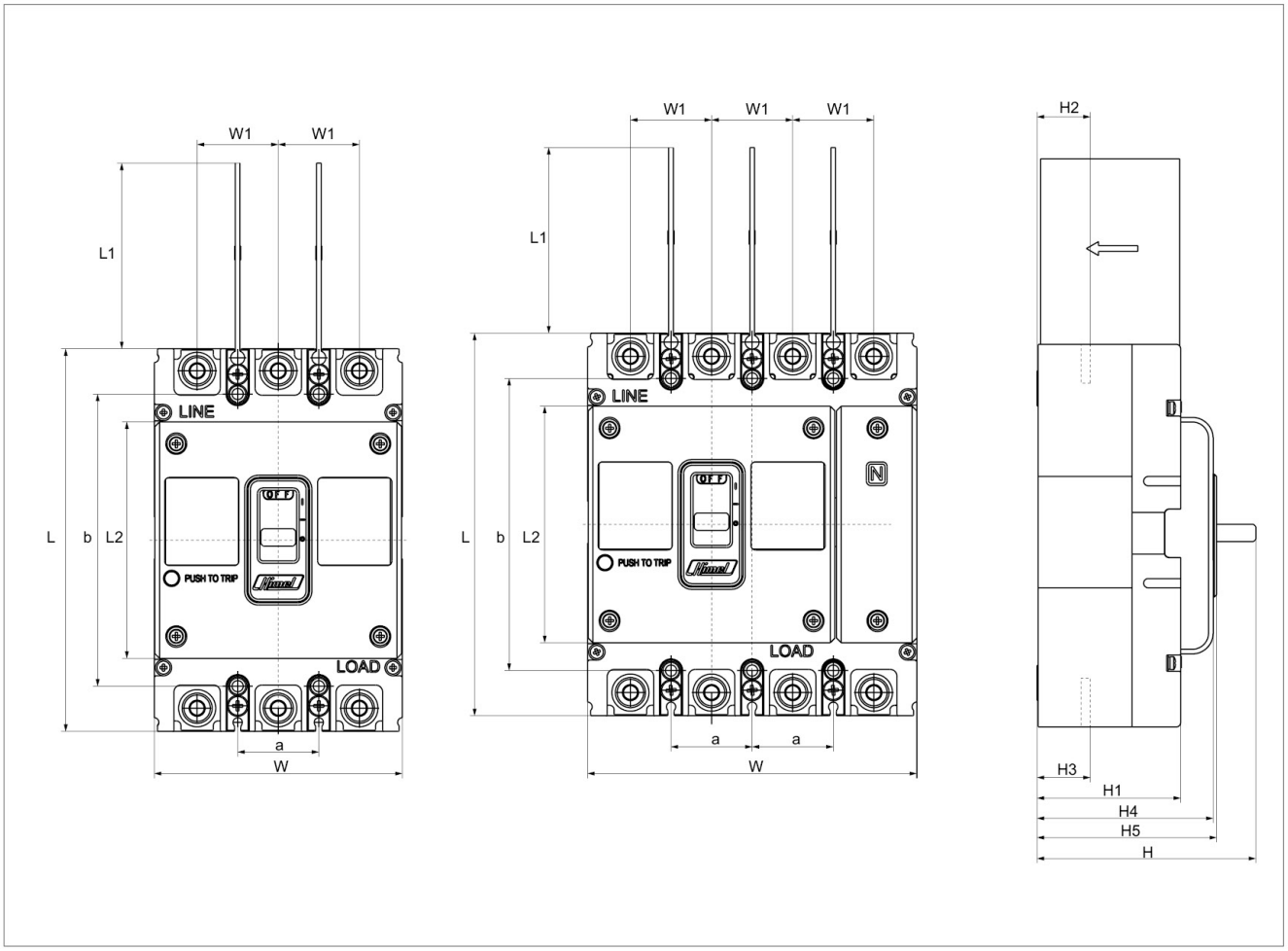



Electromagnetic type	Compound	Accessory name	CDM3-63/100S/125S	CDM3-100F/N	CDM3-160/250	CDM3-400/630	CDM3-800	CDM3-1250
208	308	Alarm code	□	□	□	□	□	
210	310	Shunt release	●	●	●	●	●	●
220	320	Auxiliary contact	■	■	■	■	■	■
230	330	Undervoltage release	○	○	○	○	○	○
240	340	Shunt+ auxiliary	■ ●	■ ●	■ ●	■ ●	● ■	■ ●
250	350	Shunt+ undervoltage	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●
260	360	Two groups of auxiliary contacts	■ ■	■ ■	■ ■	■ ■	■ ■	■ ■
270	270	Auxiliary+ undervoltage	○ ■	○ ■	○ ■	○ ■	○ ■	○ ■
218	318	Shunt + alarm	□ ●	□ ●	□ ●	□ ●	□ ●	
228	328	Auxiliary+ alarm	□■	□■	□■	□■	□■	
238	338	Undervoltage+ alarm	○ □	○ □	○ □	○ □	○□	
248	348	Shunt +auxiliary+alarm	□■ ●	□■ ●	□■ ●	□■ ●	□■ ●	
268	368	Two groups of auxiliary+alarm	□■ ■	□■ ■	□■ ■	□■ ■	□■ ■	
278	378	Auxiliary +undervoltage+ alarm	○ □■	○ □■	○ □■	○ □■		

Note: 200 refers to the circuit breaker body only with a magnetic release; 300 refers to the circuit breaker body with thermal trip and electromagnetic trip.

Installation dimensions-Rear

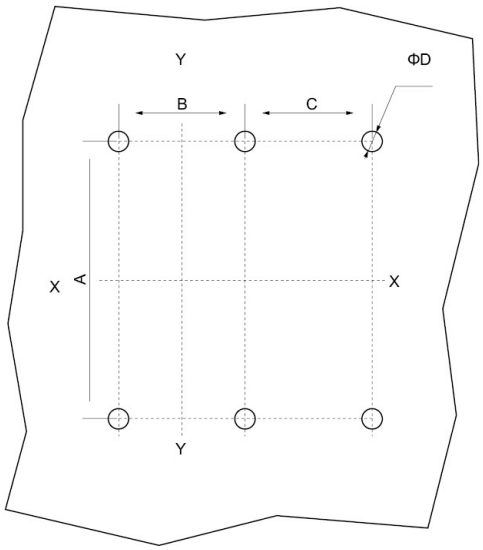
Fixed front installation dimensions



Shell frame	Number of poles	Overall dimension											Installation dimension	
		L	L1	L2	W	W1	H	H1	H2	H3	H4	H5	a	b
63/100S /125S	3P	130	50	83	75	25	81.5	54	24	24	68	70.5	25	111
	4P				100									
100M/F /T/N	3P	150	50	96	92	30	111.5	81	28.5	28	93.5	95.5	30	129
	4P				122									
160 /250S	3P	165	80	102	107	35	94.5	62	23	23	76	77.5	35	126
	4P				142									
160 250FN	3P	165	80	102	107	35	112.5	80	23	23	94	95.5	35	126
	4P				142									
400	3P	257	104.5	150	150	48	145.9	96.2	36	36.5	107.5	112.5	44	215
	4P				198									
630	3P	257	104.5	150	150	48	145.9	96.2	38	39	107.5	112.5	44	215
	4P				198									
800	3P	280	104.5	102	210	70	146.5	97.5	32.5	35.5	100	114	70	243
	4P				280									
1250	3P	406	104	97.2	210	70	197.5	134	58	60	140	158.5	70	376

Installation dimensions-Rear

Fixed front installation dimensions



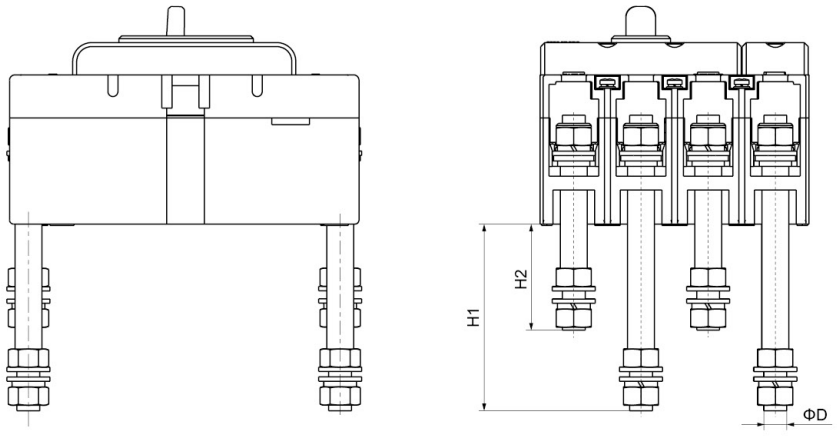
Note: X-X and Y-Y is the center of the three-pole breaker

Shell frame	Number of poles	A	B	C	D
63/100L/S	3P	111	25	/	4.5
	4P			25	
100M/F/T/N	3P	129	30	/	5
	4P			30	
160/250	3P	126	35	/	5.5
	4P			35	
400/630	3P	215	44	/	6.5
	4P			/	
800	3P	243	70	/	7.5
	4P			70	
1250	3P	376	70	/	10.5

Installation dimensions-Rear

Fixed rear installation dimensions

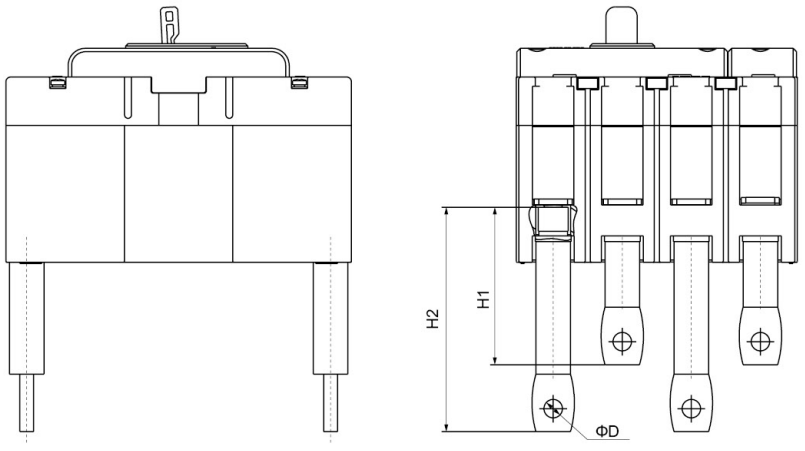
Circuit breaker mode	H1	H2	D
CDM3-63/100L/S	80	67	8
CDM3-100M/F/T/N	97	47	8
CDM3-160	102	72	10
CDM3-250	102	72	10



CDM3 63-250 Installation dimension drawing

Installation dimensions

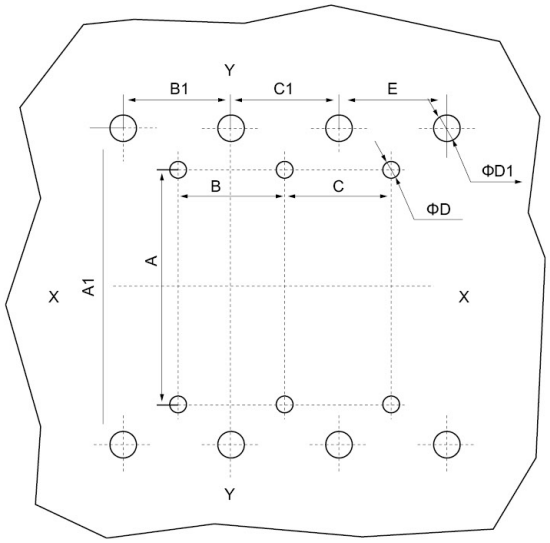
Circuit breaker mode	H1	H2	D
CDM3-400	98	134	12.5
CDM3-630	98	134	12.5
CDM3-800	107	141	12.5



CDM3 400-800 Installation dimension drawing

Installation dimensions-Rear

Fixed rear installation hole dimensions



Note: X-X and Y-Y is the center of the three-pole breaker

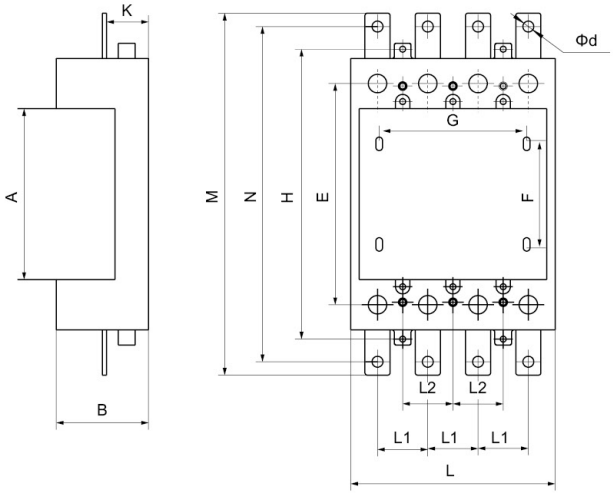
Shell frame	Number of poles	A	B	C	D	A1	B1	C1	E	D
63/100L/S	3P	111	25	-	4.5	116	25	25	-	12
	4P			25					25	
100M/F/T/N	3P	129	30	-	5	132	30	30	-	12
	4P			30					30	
160/250	3P	126	35	-	5.5	145	35	35	-	15
	4P			35					35	
400/630	3P	215	44	-	6.5	225	48	48	-	18
	4P			-					48	
800	3P	243	70	-	7.5	243	70	70	-	27
	4P			70					70	

Installation dimensions-Plug in

Plug-in front installation dimensions

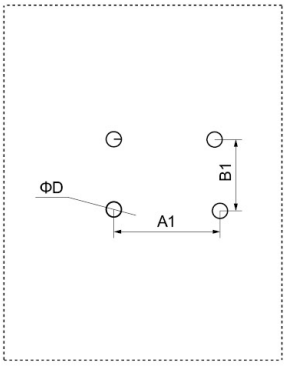
Installation dimensions

Circuit breaker mode	A	B	E	F	$G_{(3P/4P)}$	H	$H_{(3P/4P)}$	L1	L2	M	N	K	Φd
63/100S/125S	91.5	48.2	111	60	50/75	145	75/100	25	25	190	173	22.5	6
100F/N/125T	100.5	56.2	132	67	60/90	170	90/120	30	30	216	198	25	6.5
160/250A	108.5	73.2	144	74	70/105	191	105/140	35	35	243	223	37.5	8.5



Plug-in front hot position drawing

Circuit breaker mode	Number of poles	A	A1	B	B1	C	D
63/100L/S	3	79	50	38	60	90	5.5
	4	104	75				
100M/F/T/N	3	94	60	51	67	90	6.5
	4	124	90				
160/250	3	110	70	55	74	100	6.5
	4	145	105				
400/630	3	152	88	54	145	170	8.5
	4	200	132				

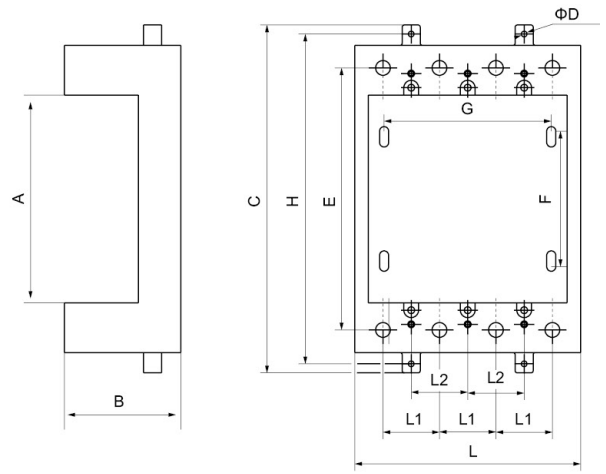


Installation dimensions-Plug in

Plug-in front installation dimensions

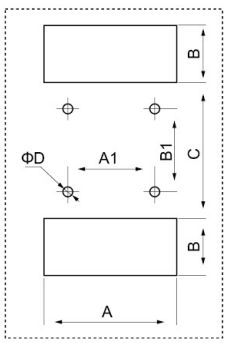
Installation dimensions

Circuit breaker mode	A	B	C	D	E	F	G	H	L	L1	L2
63/100L/S	92	51.5	154	2.5	116	60	76	146	100	25	50
100M/F/T/N	102	55	180	3.5	132	60	90	173	122	30	60
160/250A	109.5	72	200	4	145	74.5	105	190	140	35	35
400/630A	170	80	-	-	225	145	88/132	-	152/200	48	44
800A	155	87	-	-	243	143	90/160	-	210/280	70	70/140



Plug-in front hot position drawing

Circuit breaker mode	Number of poles	A	A1	B	B1	C	D
63/100L/S	3	75	51	22	60	92	4.5
	4	100	76				
100M/F/T/N	3	92	60	30	60	102	4.5
	4	122	90				
160/250	3	109	70	40	74.5	104	6
	4	144	105				
400/630	3	152	88	54	145	170	8.5
	4	200	132				
800	3	210	90	62	143	155	11
	4	280	160				

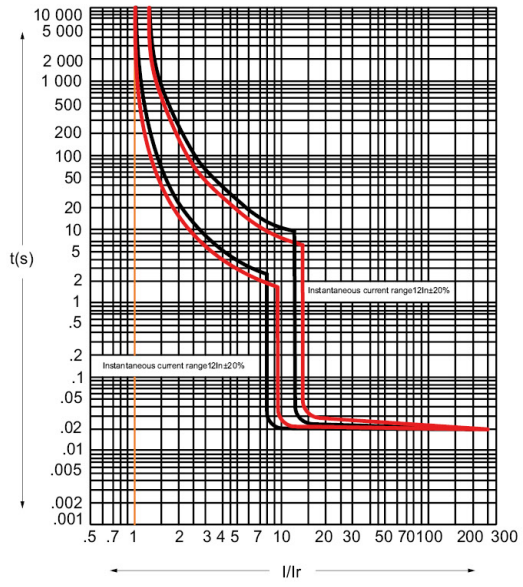


Plug-in rear installation hole pattern

CDM3 series Trip curve

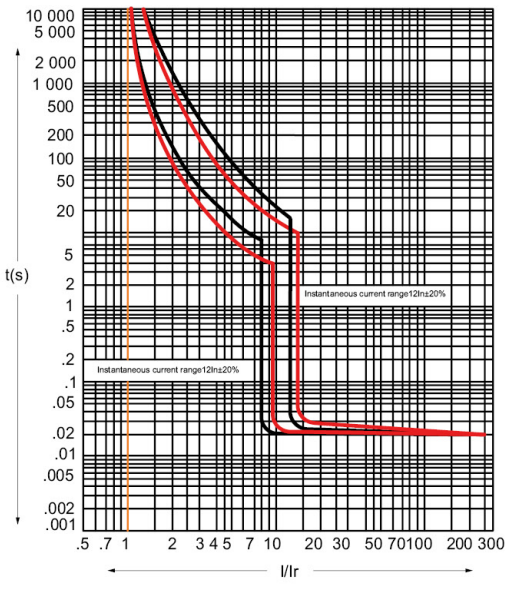
CDM3-100M/F/T/N

CDM3-100M/F/T/N 40A-100A Black line: power distribution protection , red line: motor protection;



CDM3-160/250

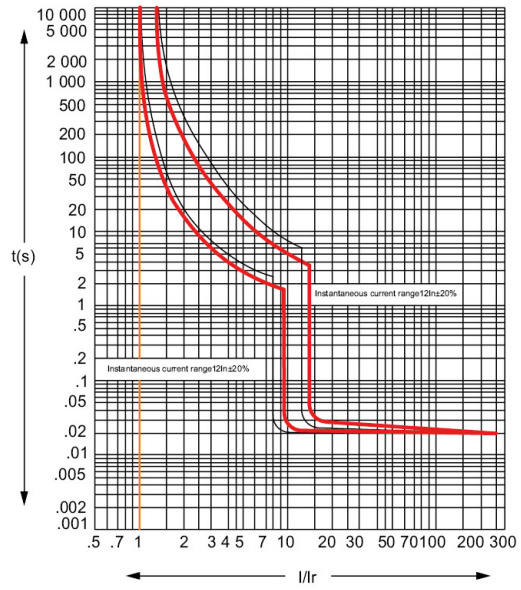
Black line: power distribution protection , red line: motor protection;



CDM3 series Trip curve

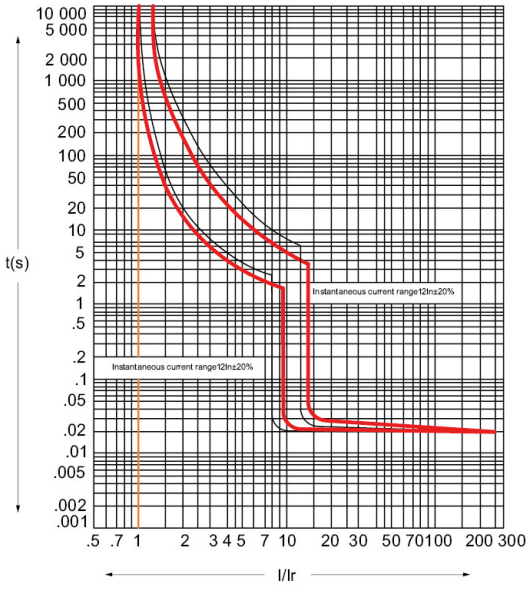
CDM3-400

Black line: power distribution protection , red line: motor protection;



CDM3-630

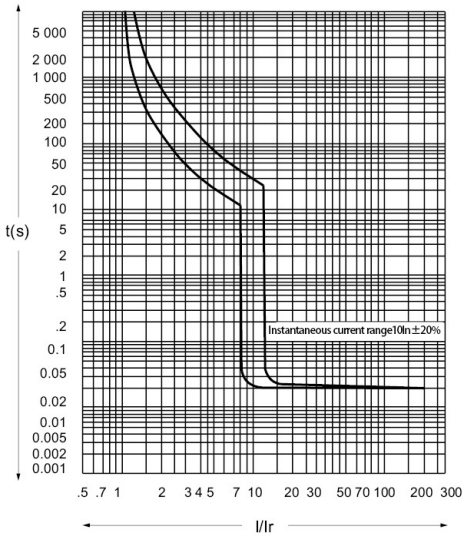
Black line: power distribution protection , red line: motor protection;



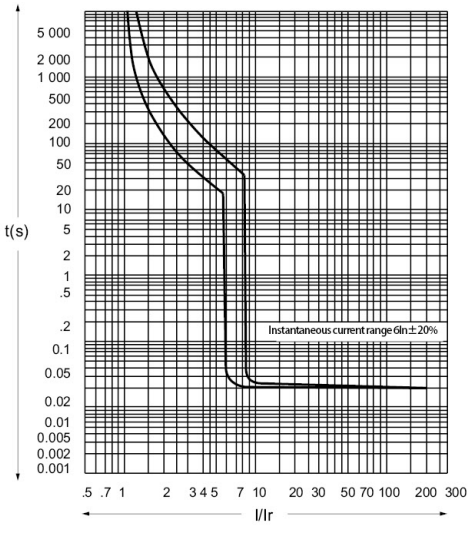
CDM3 series Trip curve

CDM3-800A

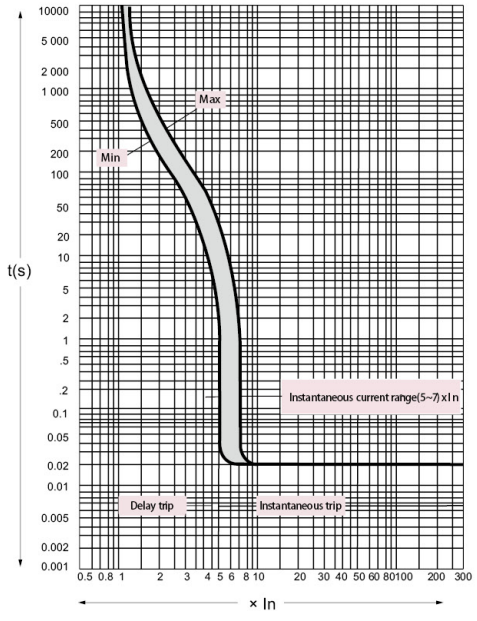
CDM3-800A 630A
For power distribution



CDM3-800A 700A~800A
For power distribution



CDM3-1250A



CDM3 Repaire and maintenance

Operated and debug CDM3

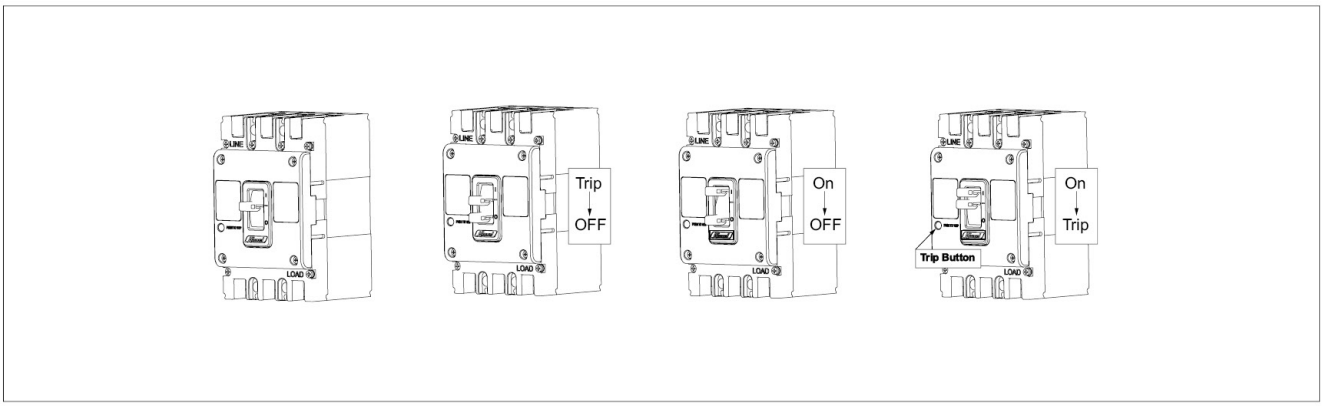
First, check the circuit breaker handle status

1.The normal status of delivered products is at "trip"

2. Press the handle to the "OFF" position

3. Close the breaker and push the toggle to ON position.

4. Tap the test button and the breaker handle returns to "Trip" position.

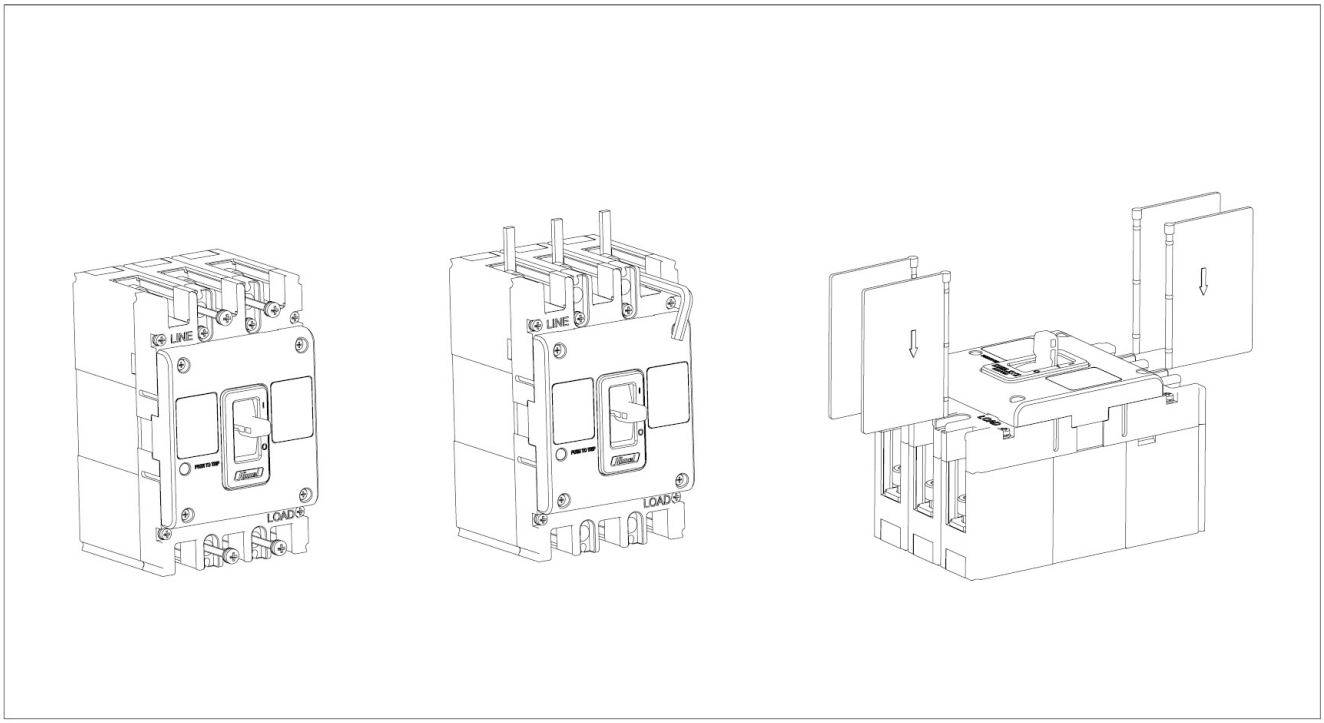


Repaire and maintenance

- The repair and maintenance shall be implemented by qualified persons
- The superior power supply must be cut off to ensure that the incoming terminals are electrically neutral
- Conduct maintenance and protection once a year under normal operating conditions with the maintenance content as follows:

Type	Item	Content
Moulded case circuit breaker	Appearance	No dust or condensation .Clean is needed if there' s any.
		No damage
		Non-discoloring shell and connectors
	Flash barrier	Insert the flash barrier in place according to the instructions
	Connector connection	Tighten without looseness according to the Rated Torque Chart
	Handle on/off operation	Operation shall be flexible
	Trip button	The handle indicates trip after the trip of the product
	Insulation test	Conduct a test according to the product test requirements On the first page of User Manuel
Circuit breaker with accessories	With undervoltage release	The circuit breaker shall be disconnected reliably and the handle indicates trip if the undervoltage release is powered off
	With undervoltage release	The circuit breaker shall be disconnected reliably and the handle indicates trip if the release is provided with rated voltage
	With auxiliary contact	The switching signal of the auxiliary contact shall be normal when the circuit breaker is connected and then disconnected
	With alarm contact	The switching signal of the alarm contact shall not function when the circuit breaker is closed and then tripped by pressing the trip button

Appendix: Torque table and connecting conductor



Torque table

Shell frame	Hexagon	Torque force N.m
63/100/125S	M8	9.5-10.5
160/250	M8	9.5-10.5
400/630	M10	19.5-20.5
800/1250	M12	29.5-30.5

Connecting conductor mm

Rated current A	10	16/20	25	32	40/50	63	80	100	125	140	160	180/220/225	250	315	400	500	600	700/800	1000	1250
Conductor cross-section mm	1.5	3	4	6	10	16	25	35	50	50	70	95	120	185	240	2*150	2*185	2*240	2*500	2*500

Fixed thermomagnetic release

Rated current(A)at 40℃ In		10	16	20	25	32	40	50	63	80	100	125	140	160	180	200	225	250	315	350	400	500	630	700	800	1000	1250
Circuit breaker	63	■	■	■	■	■	■	■	■																		
	100	■	■	■	■	■	■	■	■	■	■																
	125	■	■	■	■	■	■	■	■	■	■	■															
	160										■	■	■	■													
	250										■	■	■	■	■	■	■	■									
	400															■	■	■	■	■	■						
	630																				■	■	■				
	800																						■	■	■		
	1250																								■	■	■
Overload protection: thermal protection (Ir)																											
Tripping current value (A)		Fixed (1.3In)																									
Short circuit current protection(magnetic protection)																											
Tripping current value (A)		Fixed (10In)																									

Protection

The circuit breaker equipped with TM thermomagnetic release is mainly for protection of the cable, which is on the power distribution system for transformer power supply.

Overload protection: thermal protection (Ir)

The overload protection function provides inverse time limit curve on the basis of bimetal. If the limit is exceeded, the deformation of the bimetal can lead in the tripping of the circuit breaker operating mechanism.

Short circuit protection: magnetic protection (Ii)

Magnetic protection achieves short circuit protection through a magnetic trip device. The circuit breaker will trip instantaneously Short circuit protection Ii non-adjustable

Material code: M363S6333102FR
Material description: CDM3-63S/33102 63A Fixed at rear

Product	Framesize	Breaking Capacity	Rated Current	Poles	Tripping Type	Product accessories	Protection Type	Operation Type	Product Inner Acc	Installation Type	Temperature
CDM3	63: 63A 100: 100A 125: 125A 160: 160A 250: 250A 400: 400A 630: 630A 800: 800A 1250: 1250A	S:35kA T:35kA F:50kA N:70kA H:85kA R:100kA	0:10A … 1250:1250A	3: 3 Poles A: 4 Poles A type (The N phase is directly connected with a wire, and without contacts. It's always closed.) B: 4 Poles B type (The N phase is equipped with contacts, but without magnetic protection or thermal protection. It closes earlier and opens later than the other 3 poles).	2: Mag 3: Mag-therm	00:No accessories 08: Alarm 10: Shunt 20: Auxiliary 30: Undervoltage 40: Shunt+auxiliary 50: Shunt+undervoltage 60: Two groups of auxiliary 70: Undervoltage+auxiliary 18: Shunt+alarm 28: Auxiliary+alarm 38: Undervoltage+alarm 48: Shunt+auxiliary alarm 68: Auxiliary+auxiliary alarm 78: Undervoltage+auxiliary alarm	Default: Power Distribution 2: Motor Protection	Default:Toggle P: MCH Z: Turning Toggle	Default: MX/MN AC400V A: MX/MN AC230V B: MX DC24V C: MX AC230V MN AC230V D: MX AC400V MN AC230V E: MX DC24V MN AC230V F: MX AC230V MN AC400V G: MX AC400V MN AC400V H: MX DC24V MN AC400V : MX DC110V J: MX DC220V K: MX DC110V MN AC230V L: MX DC110V MN AC400V M: MX DC220V MN AC230V N: MX DC220V MN AC400V	Default: Fixed Front FR: Fixed Rear PF: Plug-in Front PR: Plug-in Back D: Draw-out	Default:40℃ T:50℃

Remark:

1. Shunt/auxiliary/alarm contacts are classified into terminals and standard configured leadsTwo types for Shunt/auxiliary/alarm contacts: ternimals and configured leads (standard offer)
2. Standard configuration of connection mode: fixed front connection
3. Standard configuration of conventional products: phase partition and mounting screw (without wiring copper bar)
4. As customized models, DC110V and DC220V shall be described specially

CDM3 Molded Case Circuit Breaker

Selection of accessories
CDM3-100 H1

Name	Current frame	Breaking Capacity	Product Inner Acc	Voltage Type	Installation Position	Poles
CDM3	100	FN	AL1	A2	L	3P
	63:63A 100:100A 125:125A 160:160A 250:250A 400:400A 630:630A 800:800A 1250:1250A	S:35kA T:35kA F:50kA N:70kA H:85kA R:100kA	AL1:Alarm (with wire) AL2:Alarm (with terminal) MX1:Shunt release (with wire) MX2:Shunt release (with terminal) OF11K1B:Auxiliary contact left(with wire) OF:21K1B:Auxiliary contact left(with terminal) MN:Undervoltage release C3:Expanding terminal 3P(3pcs) C4:Expanding terminal 4P(4pcs) H1:Round direct manually operated H2:Square direct manually operated HL1:Round extended m anually o perated HLE2:Square extended manually operated CD1:AC Electric operating mechanism CD2:DC Electric operating mechanism	MX shunt: A2:AC230V A3:AC400V D1:DC110V D2:DC24V D3:DC220V MN under voltage: A2:AC230V A3:AC400V	L:Left R:Right	3P:3P 4P:4P

Remark:
1. The extension terminal is all called accessory plate or wiring copper bus
2. AL/MX/OF is equipped with terminal or lead
3. 100AF and the accessories of type S breaker and F/N breaker are different and shall be distinguished
4. MX shunt voltage type: AC230V、AC400V、DC24V、DC110V、DC220V
5. MN under-voltage type: AC230V、AC400V
6. Shunt: installed on the right
Under-voltage: installed on the left
Auxiliary, alarm and auxiliary alarm: optional on left or right
7. CD1:CDM3-800~1250;CD2:CDM3-63~630
8. CDM3-800 internal accessories (alarm, auxiliary, shunt, undervoltage) does not provide single selling
9. CDM3-1250 only provide motor mechanism selling separately

Material order reference

CDM3-63AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M363S103300	CDM3-63S/3300 10A
M363S163300	CDM3-63S/3300 16A
M363S203300	CDM3-63S/3300 20A
M363S253300	CDM3-63S/3300 25A
M363S323300	CDM3-63S/3300 32A
M363S403300	CDM3-63S/3300 40A
M363S503300	CDM3-63S/3300 50A
M363S633300	CDM3-63S/3300 63A
M363F103300	CDM3-63F/3300 10A
M363F163300	CDM3-63F/3300 16A
M363F203300	CDM3-63F/3300 20A
M363F253300	CDM3-63F/3300 25A
M363F323300	CDM3-63F/3300 32A
M363F403300	CDM3-63F/3300 40A
M363F503300	CDM3-63F/3300 50A
M363F633300	CDM3-63F/3300 63A
M363S10A300	CDM3-63S/4300A 10A
M363S16A300	CDM3-63S/4300A 16A
M363S20A300	CDM3-63S/4300A 20A
M363S25A300	CDM3-63S/4300A 25A
M363S32A300	CDM3-63S/4300A 32A
M363S40A300	CDM3-63S/4300A 40A
M363S50A300	CDM3-63S/4300A 50A
M363S63A300	CDM3-63S/4300A 63A
M363S10B300	CDM3-63S/4300B 10A
M363S16B300	CDM3-63S/4300B 16A
M363S20B300	CDM3-63S/4300B 20A
M363S25B300	CDM3-63S/4300B 25A
M363S32B300	CDM3-63S/4300B 32A
M363S40B300	CDM3-63S/4300B 40A
M363S50B300	CDM3-63S/4300B 50A
M363S63B300	CDM3-63S/4300B 63A
M363F10A300	CDM3-63F/4300A 10A
M363F16A300	CDM3-63F/4300A 16A
M363F20A300	CDM3-63F/4300A 20A
M363F25A300	CDM3-63F/4300A 25A
M363F32A300	CDM3-63F/4300A 32A
M363F40A300	CDM3-63F/4300A 40A
M363F50A300	CDM3-63F/4300A 50A
M363F63A300	CDM3-63F/4300A 63A
M363F10B300	CDM3-63F/4300B 10A
M363F16B300	CDM3-63F/4300B 16A
M363F20B300	CDM3-63F/4300B 20A
M363F25B300	CDM3-63F/4300B 25A
M363F32B300	CDM3-63F/4300B 32A
M363F40B300	CDM3-63F/4300B 40A
M363F50B300	CDM3-63F/4300B 50A
M363F63B300	CDM3-63F/4300B 63A

CDM3-63AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M3100S103300	CDM3-100S/3300 10A
M3100S163300	CDM3-100S/3300 16A
M3100S203300	CDM3-100S/3300 20A
M3100S253300	CDM3-100S/3300 25A
M3100S323300	CDM3-100S/3300 32A
M3100S403300	CDM3-100S/3300 40A
M3100S503300	CDM3-100S/3300 50A
M3100S633300	CDM3-100S/3300 63A
M3100S803300	CDM3-100S/3300 80A
M3100S1003300	CDM3-100S/3300 100A
M3100F403300	CDM3-100F/3300 40A
M3100F503300	CDM3-100F/3300 50A
M3100F633300	CDM3-100F/3300 63A
M3100F803300	CDM3-100F/3300 80A
M3100F1003300	CDM3-100F/3300 100A
M3100S10A300	CDM3-100S/4300A 10A
M3100S16A300	CDM3-100S/4300A 16A
M3100S20A300	CDM3-100S/4300A 20A
M3100S25A300	CDM3-100S/4300A 25A
M3100S32A300	CDM3-100S/4300A 32A
M3100S40A300	CDM3-100S/4300A 40A
M3100S50A300	CDM3-100S/4300A 50A
M3100S63A300	CDM3-100S/4300A 63A
M3100S80A300	CDM3-100S/4300A 80A
M3100S100A300	CDM3-100S/4300A 100A
M3100S10B300	CDM3-100S/4300B 10A
M3100S16B300	CDM3-100S/4300B 16A
M3100S20B300	CDM3-100S/4300B 20A
M3100S25B300	CDM3-100S/4300B 25A
M3100S32B300	CDM3-100S/4300B 32A
M3100S40B300	CDM3-100S/4300B 40A
M3100S50B300	CDM3-100S/4300B 50A
M3100S63B300	CDM3-100S/4300B 63A
M3100S80B300	CDM3-100S/4300B 80A
M3100S100B300	CDM3-100S/4300B 100A
M3100F40A300	CDM3-100F/4300B 10A
M3100F50A300	CDM3-100F/4300B 16A
M3100F63A300	CDM3-100F/4300B 20A
M3100F80A300	CDM3-100F/4300B 25A
M3100F100A300	CDM3-100F/4300B 32A
M3100F40B300	CDM3-100F/4300B 40A
M3100F50B300	CDM3-100F/4300B 50A
M3100F63B300	CDM3-100F/4300B 63A
M3100F80B300	CDM3-100F/4300B 80A
M3100F100B300	CDM3-100F/4300B 100A

CDM3-100AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M3160S1003300	CDM3-160S/3300 100A
M3160S1253300	CDM3-160S/3300 125A
M3160S1403300	CDM3-160S/3300 140A
M3160S1603300	CDM3-160S/3300 160A
M3160S100A300	CDM3-160S/4300A 100A
M3160S125A300	CDM3-160S/4300A 125A
M3160S140A300	CDM3-160S/4300A 140A
M3160S160A300	CDM3-160S/4300A 160A
M3160S100B300	CDM3-160S/4300B 100A
M3160S125B300	CDM3-160S/4300B 125A
M3160S140B300	CDM3-160S/4300B 140A
M3160S160B300	CDM3-160S/4300B 160A
M3160F1003300	CDM3-160F/3300 100A
M3160F1253300	CDM3-160F/3300 125A
M3160F1403300	CDM3-160F/3300 140A
M3160F1603300	CDM3-160F/3300 160A
M3160F100A300	CDM3-160F/4300A 100A
M3160F125A300	CDM3-160F/4300A 125A
M3160F140A300	CDM3-160F/4300A 140A
M3160F160A300	CDM3-160F/4300A 160A
M3160F100B300	CDM3-160F/4300B 100A
M3160F125B300	CDM3-160F/4300B 125A
M3160F140B300	CDM3-160F/4300B 140A
M3160F160B300	CDM3-160F/4300B 160A
M3160N1253300	CDM3-160N/3300 125A
M3160N1403300	CDM3-160N/3300 140A
M3160N1603300	CDM3-160N/3300 160A
M3160N100A300	CDM3-160N/4300A 100A
M3160N125A300	CDM3-160N/4300A 125A
M3160N140A300	CDM3-160N/4300A 140A
M3160N160A300	CDM3-160N/4300A 160A
M3160N100B300	CDM3-160N/4300B 100A
M3160N125B300	CDM3-160N/4300B 125A
M3160N140B300	CDM3-160N/4300B 140A
M3160N160B300	CDM3-160N/4300B 160A
M3160H1003300	CDM3-160H/3300 100A
M3160H1253300	CDM3-160H/3300 125A
M3160H1403300	CDM3-160H/3300 140A
M3160H1603300	CDM3-160H/3300 160A

CDM3-100AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M3250S1003300	CDM3-250S/3300 100A
M3250S1253300	CDM3-250S/3300 125A
M3250S1403300	CDM3-250S/3300 140A
M3250S1603300	CDM3-250S/3300 160A
M3250S1803300	CDM3-250S/3300 180A
M3250S2003300	CDM3-250S/3300 200A
M3250S2253300	CDM3-250S/3300 225A
M3250S2503300	CDM3-250S/3300 250A
M3250S100A300	CDM3-250S/4300A 100A
M3250S125A300	CDM3-250S/4300A 125A
M3250S140A300	CDM3-250S/4300A 140A
M3250S160A300	CDM3-250S/4300A 160A
M3250S180A300	CDM3-250S/4300A 180A
M3250S200A300	CDM3-250S/4300A 200A
M3250S225A300	CDM3-250S/4300A 225A
M3250S250A300	CDM3-250S/4300A 250A
M3250S100B300	CDM3-250S/4300B 100A
M3250S125B300	CDM3-250S/4300B 125A
M3250S140B300	CDM3-250S/4300B 140A
M3250S160B300	CDM3-250S/4300B 160A
M3250S180B300	CDM3-250S/4300B 180A
M3250S200B300	CDM3-250S/4300B 200A
M3250S225B300	CDM3-250S/4300B 225A
M3250S250B300	CDM3-250S/4300B 250A
M3250F1003300	CDM3-250F/3300 100A
M3250F1253300	CDM3-250F/3300 125A
M3250F1403300	CDM3-250F/3300 140A
M3250F1603300	CDM3-250F/3300 160A
M3250F1803300	CDM3-250F/3300 180A
M3250F2003300	CDM3-250F/3300 200A
M3250F2253300	CDM3-250F/3300 225A
M3250F2503300	CDM3-250F/3300 250A
M3250F100A300	CDM3-250F/4300A 100A
M3250F125A300	CDM3-250F/4300A 125A
M3250F140A300	CDM3-250F/4300A 140A
M3250F160A300	CDM3-250F/4300A 160A
M3250F180A300	CDM3-250F/4300A 180A
M3250F200A300	CDM3-250F/4300A 200A
M3250F225A300	CDM3-250F/4300A 225A
M3250F250A300	CDM3-250F/4300A 250A
M3250F100B300	CDM3-250F/4300B 100A
M3250F125B300	CDM3-250F/4300B 125A
M3250F140B300	CDM3-250F/4300B 140A
M3250F160B300	CDM3-250F/4300B 160A
M3250F180B300	CDM3-250F/4300B 180A
M3250F200B300	CDM3-250F/4300B 200A
M3250F225B300	CDM3-250F/4300B 225A
M3250F250B300	CDM3-250F/4300B 250A

CDM3-250AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M3250N1003300	CDM3-250N/3300 100A
M3250N1253300	CDM3-250N/3300 125A
M3250N1403300	CDM3-250N/3300 140A
M3250N1603300	CDM3-250N/3300 160A
M3250N1803300	CDM3-250N/3300 180A
M3250N2003300	CDM3-250N/3300 200A
M3250N2253300	CDM3-250N/3300 225A
M3250N2503300	CDM3-250N/3300 250A
M3250N100A300	CDM3-250N/4300A 100A
M3250N125A300	CDM3-250N/4300A 125A
M3250N140A300	CDM3-250N/4300A 140A
M3250N160A300	CDM3-250N/4300A 160A
M3250N180A300	CDM3-250N/4300A 180A
M3250N200A300	CDM3-250N/4300A 200A
M3250N225A300	CDM3-250N/4300A 225A
M3250N250A300	CDM3-250N/4300A 250A
M3250N100B300	CDM3-250N/4300B 100A
M3250N125B300	CDM3-250N/4300B 125A
M3250N140B300	CDM3-250N/4300B 140A
M3250N160B300	CDM3-250N/4300B 160A
M3250N180B300	CDM3-250N/4300B 180A
M3250N200B300	CDM3-250N/4300B 200A
M3250N225B300	CDM3-250N/4300B 225A
M3250N250B300	CDM3-250N/4300B 250A
M3250H1003300	CDM3-250H/3300 100A
M3250H1253300	CDM3-250H/3300 125A
M3250H1403300	CDM3-250H/3300 140A
M3250H1603300	CDM3-250H/3300 160A
M3250H1803300	CDM3-250H/3300 180A
M3250H2003300	CDM3-250H/3300 200A
M3250H2253300	CDM3-250H/3300 225A
M3250H2503300	CDM3-250H/3300 250A

CDM3-400AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M3400F2003300	CDM3-400F/3300 200A
M3400F2253300	CDM3-400F/3300 225A
M3400F2503300	CDM3-400F/3300 250A
M3400F3153300	CDM3-400F/3300 315A
M3400F3503300	CDM3-400F/3300 350A
M3400F4003300	CDM3-400F/3300 400A
M3400F200A300	CDM3-400F/4300A 200A
M3400F225A300	CDM3-400F/4300A 225A
M3400F250A300	CDM3-400F/4300A 250A
M3400F315A300	CDM3-400F/4300A 315A
M3400F350A300	CDM3-400F/4300A 350A
M3400F400A300	CDM3-400F/4300A 400A
M3400F200B300	CDM3-400F/4300B 200A
M3400F225B300	CDM3-400F/4300B 225A
M3400F250B300	CDM3-400F/4300B 250A
M3400F315B300	CDM3-400F/4300B 315A
M3400F350B300	CDM3-400F/4300B 350A
M3400F400B300	CDM3-400F/4300B 400A
M3400N2003300	CDM3-400N/3300 200A
M3400N2253300	CDM3-400N/3300 225A
M3400N2503300	CDM3-400N/3300 250A
M3400N3153300	CDM3-400N/3300 315A
M3400N3503300	CDM3-400N/3300 350A
M3400N4003300	CDM3-400N/3300 400A
M3400N200A300	CDM3-400N/4300A 200A
M3400N225A300	CDM3-400N/4300A 225A
M3400N250A300	CDM3-400N/4300A 250A
M3400N315A300	CDM3-400N/4300A 315A
M3400N350A300	CDM3-400N/4300A 350A
M3400N400A300	CDM3-400N/4300A 400A
M3400N200B300	CDM3-400N/4300B 200A
M3400N225B300	CDM3-400N/4300B 225A
M3400N250B300	CDM3-400N/4300B 250A
M3400N315B300	CDM3-400N/4300B 315A
M3400N350B300	CDM3-400N/4300B 350A
M3400N400B300	CDM3-400N/4300B 400A
M3400H2003300	CDM3-400H/3300 200A
M3400H2253300	CDM3-400H/3300 225A
M3400H2503300	CDM3-400H/3300 250A
M3400H3153300	CDM3-400H/3300 315A
M3400H3503300	CDM3-400H/3300 350A
M3400H4003300	CDM3-400H/3300 400A
M3400H200A300	CDM3-400H/4300A 200A
M3400H225A300	CDM3-400H/4300A 225A
M3400H250A300	CDM3-400H/4300A 250A
M3400H315A300	CDM3-400H/4300A 315A
M3400H350A300	CDM3-400H/4300A 350A
M3400H400A300	CDM3-400H/4300A 400A

CDM3-400AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M3400H200B300	CDM3-400H/4300B 200A
M3400H225B300	CDM3-400H/4300B 225A
M3400H250B300	CDM3-400H/4300B 250A
M3400H315B300	CDM3-400H/4300B 315A
M3400H350B300	CDM3-400H/4300B 350A
M3400H400B300	CDM3-400H/4300B 400A
M3400R2003300	CDM3-400R/3300 200A
M3400R2253300	CDM3-400R/3300 225A
M3400R2503300	CDM3-400R/3300 250A
M3400R3153300	CDM3-400R/3300 315A
M3400R3503300	CDM3-400R/3300 350A
M3400R4003300	CDM3-400R/3300 400A

CDM3-630AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M3630F4003300	CDM3-630F/3300 400A
M3630F5003300	CDM3-630F/3300 500A
M3630F6303300	CDM3-630F/3300 630A
M3630F400A300	CDM3-630F/4300A 400A
M3630F500A300	CDM3-630F/4300A 500A
M3630F630A300	CDM3-630F/4300A 630A
M3630F400B300	CDM3-630F/4300B 400A
M3630F500B300	CDM3-630F/4300B 500A
M3630F630B300	CDM3-630F/4300B 630A
M3630N4003300	CDM3-630N/3300 400A
M3630N5003300	CDM3-630N/3300 500A
M3630N6303300	CDM3-630N/3300 630A
M3630N400A300	CDM3-630N/4300A 400A
M3630N500A300	CDM3-630N/4300A 500A
M3630N630A300	CDM3-630N/4300A 630A
M3630N400B300	CDM3-630N/4300B 400A
M3630N500B300	CDM3-630N/4300B 500A
M3630N630B300	CDM3-630N/4300B 630A
M3630H4003300	CDM3-630H/3300 400A
M3630H5003300	CDM3-630H/3300 500A
M3630H6303300	CDM3-630H/3300 630A
M3630H400A300	CDM3-630H/4300A 400A
M3630H500A300	CDM3-630H/4300A 500A
M3630H630A300	CDM3-630H/4300A 630A
M3630H400B300	CDM3-630H/4300B 400A
M3630H500B300	CDM3-630H/4300B 500A
M3630H630B300	CDM3-630H/4300B 630A
M3630R4003300	CDM3-630R/3300 400A
M3630R5003300	CDM3-630R/3300 500A
M3630R6303300	CDM3-630R/3300 630A

CDM3-800AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M3800F6303300	CDM3-800F/3300 630A
M3800F7003300	CDM3-800F/3300 700A
M3800F8003300	CDM3-800F/3300 800A
M3800F630A300	CDM3-800F/4300A 630A
M3800F700A300	CDM3-800F/4300A 700A
M3800F800A300	CDM3-800F/4300A 800A
M3800F630B300	CDM3-800F/4300B 630A
M3800F700B300	CDM3-800F/4300B 700A
M3800F800B300	CDM3-800F/4300B 800A
M3800N6303300	CDM3-800N/3300 630A
M3800N7003300	CDM3-800N/3300 700A
M3800N8003300	CDM3-800N/3300 800A
M3800N630A300	CDM3-800N/4300A 630A
M3800N700A300	CDM3-800N/4300A 700A
M3800N800A300	CDM3-800N/4300A 800A
M3800N630B300	CDM3-800N/4300B 630A
M3800N700B300	CDM3-800N/4300B 700A
M3800N800B300	CDM3-800N/4300B 800A
M3800R6303300	CDM3-800R/3300 630A
M3800R7003300	CDM3-800R/3300 700A
M3800R8003300	CDM3-800R/3300 800A

CDM3-125 AF Power distribution protection Thermal magnetic tripping

Order reference	Product name
M31250H8003300	CDM3-1250H/3300 800A
M31250H10003300	CDM3-1250H/3300 1000A
M31250H12503300	CDM3-1250H/3300 1250A