



Delixi Electric **Easy** Electric

CDM3 Molded Case Circuit Breaker User Manual



Complied Standard: GB/T 14048.2 IEC/EN 60947-2

☐ Please carefully read the User Manual before the installation and use of the products, keep it properly as backup.

Safety Notice

Danger

- Do not operate the breaker and touch the energized parts (conductors and ports) with wet hands during use; otherwise it may cause electric shock and burning danger;
- Cut off the higher power and ensure that the incoming terminals are electrically neutral before product maintenance and service; otherwise it may cause serious consequences and endanger personal safety;

Caution

- The installation, maintenance and service shall be implemented by qualified persons;
- Characteristics of the product have been set when delivery and cannot be adjusted at will during use;
- Confirm whether the working voltage, rated current, frequency and characteristics of the product meet the working requirements before use;
- To prevent interphase short circuit, the bare wire or copper busbar at the terminal shall be insulated;
- To test the insulation resistance or power frequency withstand voltage, it is required to disconnect the electronic components between the current loop to prevent damage to the product performance;
- Use the matching accessories we provided as the optional accessories to ensure quality. We are not responsible for all adverse consequences generated from the use of the accessories not provided by us;
- Energize the rated voltage of the undervoltage release before switching on the product with an undervoltage release;
- Stop using and contact the supplier immediately in case of any damage or abnormal sound during unpacking;
- Make industrial waste treatment for product scrap. Thank you for your cooperation.

Product Test

Insulation test

The breaker has been subject to the insulation test stipulated in the standard before delivery. The retest, if required before installation, shall follow the steps below:

- (1) Tool: 1000V DC megger (500V DC meg ger for CDM3)
- (2) Between the breaker contacts, between the phases and between the phase and the shell (the shell is covered by tinsel)
- (3) The undervoltage release connected to the main circuit is between the incoming line and the breaker shell
- (4) The insulation resistance shall be no less than 20M Ω .

Note: The user may conduct a substitution test by means of a power frequency withstand voltage tester in case of the absence of a megger. Refer to the insulation test methods for the measuring parts and apply the voltage at 2000V/5s.

Please note the information with



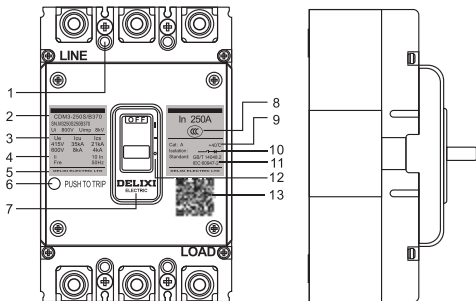
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About CDM3

Packing list

	Ordered product	Flash barrier	Binding screw	Mounting screw	Instruction
No.	1	4 with three poles 6 with four poles	6 with three poles 8 with four poles	4 with three poles 4 with four poles	1



1	Mounting hole	6	Test button	11	Conplied standard
2	Product name	7	Brand trademark	12	Closing, tripping and opening
3	Technical parameters	8	Certification mark	13	QR Code
4	Breaking capacity	9	Category		
5	Brand name	10	Breaker with isolating function		

Product Service Environment and Conditions

- Protection class: IP20
- Pollution class: 3
- Proper operating temperature range is -5 ~ +40°C and the average temperature within 24h shall not exceed +35°C (Please contact the manufacturer if exceeding this range).
- The altitude at the installation site cannot be higher than 2000m; otherwise, degrade the products.
- The relative humidity of the atmosphere shall not exceed 50% at maximum ambient temperature +40°C. The relative humidity can be higher at a lower temperature (such as 90% at +20°C) and the condensation on the product surface due to temperature variation shall be considered.

Model explanation										
M3	63	S	63	3	3	10	2	Default	Default	FR
CDM3	Frame current 63/63A 100/100A 125/125A 160/160A 250/250A 400/400A 630/630A 800/800A 1250/1250A	Breaking capacity C:25kA S:35kA T:35kA F:50kA N:70kA H:85kA R:100kA	Rated current 10/10A - 1250/ 1250A	Poles 3: 3 poles A: 4-pole type A B: 4-pole type B	Tripping 2: Single magnetic tripping 3: Thermal magnetic tripping	Product accessories XX: 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	Protection type Default: Distribution protection 2: Motor protection	Operation mode Default: Handle operation P: Electrically operated mechanism Z: Manual rotation operation	Internal accessory voltage No code: MX/MN AC400V C: MX A Default:MX/MN AC400V A: MX/MN AC230V B: MX DC24V D: MX AC230V MN AC230V E: MX AC400V MN AC230V F: MX DC24V MN AC230V G: MX AC230V MN AC400V H: MX AC400V MN AC400V I: MX DC24V MN AC400V J: MX DC110V K: MX DC220V L: MX DC110V MN AC230V M: MX DC110V MN AC400V N: MX DC220V MN AC230V C230V MN AC230V	Installation Type No Installation Type Default: Fixed Front FR: Fixed Rear PF: Plug-in Front PR: Plug-in Back D: Draw-out

Remarks:

1. Frame 800 without clamshell design
2. Shunt /auxiliary/alarm contacts are classified into 2 types: terminals and leads and the Standard undervoltage release is configured with terminals.
3. Standard configuration of connection mode: fixed front connection
4. Standard configuration of conventional products: phase partition and mounting screw (without wiring copper bar)
5. Electrically operated mechanism: configure CD2 electrically operated AC mechanism in case of no requirements from customers (CDM3-63~800 only provide CD2 Motor Mechanism) Manual rotation operation: configure H1 circular electrically operated mechanism in case of no customer description.

Accessories

CDM3	63	H1
	Frame current	Accessories sold separately
	63A	AL1: Alarm release (with lead)
	100A	AL2: Alarm release (with terminal)
	125A	MX1: Shunt release (with lead)
	160A	MX2: Shunt release (with terminal)
	250A	OF11K1B: Auxiliary contact 1K1B (with lead)
	400A	OF21K1B: Auxiliary contact 1K1B (with terminal)
	630A	OF12K2B: Auxiliary contact 2K2B (with lead)
	800A	OF22K2B: Auxiliary contact 2K2B (with terminal)
		MN: Undervoltage release
		C3: 3P extension terminal
		C4: 4P extension terminal
		H1: Direct round handle
		H2: Direct square handle
		HL1: Round extension turning handle
		HL2: Square extension turning handle
		CD1: AC electrically operated mechanism
		CD2: General electrically operated mechanism for AC and DC
		IB: Phase partition

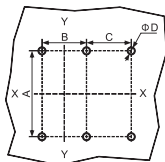
Remarks:

1. The extension terminal is all called accessory plate or wiring copper bar
2. AL/MX/OF is equipped with terminal or lead.
3. 100A frame and the accessories of type S breaking and F/N breaking are different and shall be distinguished.
4. MX shunt voltage type: DC24V, DC110V (customized), DC220V (customized), AC230V and AC400V
5. MN undervoltage type: AC230V, AC400V
6. The internal accessory of 800AF are not sold separately.

CDM3 Installation

Step 1: Installation

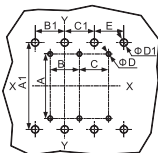
Fixed front mounting hole drawing (mm)



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

Model	Poles	A	B	C	D
CDM3-63F/S/C	3	111	25	--	4.5
CDM3-100S/C	4	111	25	25	4.5
CDM3-125S/C					
CDM3-100F/N	3	129	30	--	5.0
CDM3-125T/L	4	129	30	30	5.0
CDM3-160/250	3	126	35	--	5.5
	4	126	35	35	5.5
CDM3-400/630	3	215	44	--	6.5
	4	215	44	--	6.5
CDM3-800	3	243	70	--	7.5
	4	243	70	70	7.5
CDM3-1250	3	376	70	/	10.5
	-				

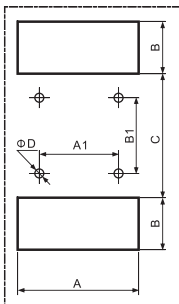
Fixed rear mounting hole drawing (mm)



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

Model	Poles	A	B	C	ΦD	A1	B1	C1	E	$\Phi D1$
63F/S/C	3	111	25	--	4.5	116	25	25	--	12
100S/C	4	111	25	25	4.5	116	25	25	25	12
125S/C										
100F/N	3	129	30	--	5.0	132	30	30	--	15
125T	4	129	30	30	5.0	132	30	30	30	15
160	3	126	35	--	5.5	145	35	35	--	15
250	4	126	35	35	5.5	145	35	35	35	15
400	3	215	44	--	6.5	225	48	48	--	32
630	4	215	44	--	6.5	225	48	48	48	32
800	3	243	70	--	7.5	243	70	70	--	40
	4	243	70	70	7.5	243	70	70	70	40

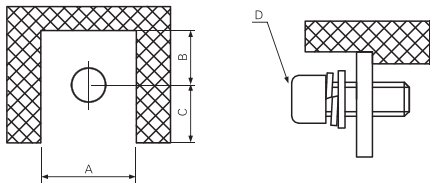
Plug-in front/back panel mounting hole figure (mm)



Note : CDM3-630 630A can provide plug-in rear connection, but need to de-rating to 500A which is available.

Model		Poles	A	A1	B	B1	C	D
Plug-in front panel mounting hole figure	CDM3-63F/S/C	3	--	25	--	96	--	4
	CDM3-100S/C	4	--					
	CDM3-125S/C	4	--					
	CDM3-100F/N	3	--	30	--	110	--	5
	CDM3-125T	4	--					
	CDM3-160/250	3	--	35	--	150	--	5
Plug-in back panel mounting hole figure	CDM3-63F/S/C	3	79	50	30	60	90	5.5
	CDM3-100S/C	4	104	75				
	CDM3-125S/C	4						
	CDM3-100F/N	3	94	60	40	65	90	5.5
	CDM3-125T	4	124	90				
	CDM3-160/250	3	110	70	45	74	100	6.5
		4	145	105				
	CDM3-400/630	3	157	88	60	145	170	8.5
		4	205	132				
	CDM3-800	3	220	140	72	162	171	11
		4	290	162				

Terminal block mounting hole drawing (mm)

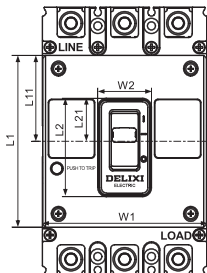


Note:

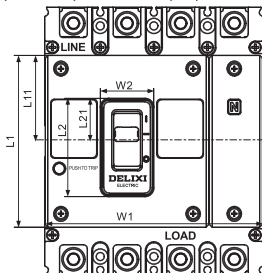
1. The following model of breaker is adaptive to DIN 46235 wiring nose.
2. Purchase the extension terminal accessories in case of exceeding the following wiring capacity.

Model	Maximun wiring capacity of DIN46235 wiring nos	A	B	C	D
CDM3-63F/S/C	25mm ²	16	7.5	7	M8 × 16
CDM3-100S/C	25mm ²				
CDM3-125S/C	25mm ²				
CDM3-100F/N CDM3-125T	25mm ²	18	7.5	9	M8 × 16
CDM3-160	70mm ²	25	12.5	9.5	M8 × 20
CDM3-250	70mm ²				
CDM3-400	120mm ²	32	14	16	M10 × 25
CDM3-630	120mm ²				M10 × 35
CDM3-800	--	44.5	12	16	M12 × 30
CDM3-1250	--	--	--	--	--

CDM3-63 ~ 800A fixed and insert type breaker panel hole size (mm)



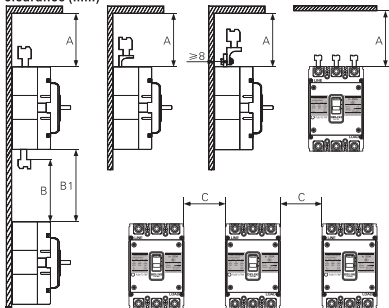
CDM3-63A ~ 1250A 3P



CDM3-63A ~ 1250A 4P

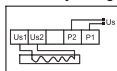
Model	Poles	Exposed front cover and toggle handle			Exposed toggle handle		
		W1	L1	L11	W2	L2	L21
CDM3-63F/S/C CDM3-100S/C CDM3-125S/C	3P	75	83	41.5	22	50	26
	4P	100	83	41.5	22	50	26
CDM3-100F/N CDM3-125T	3P	92	96	48	30	55	24
	4P	122	96	48	30	55	24
CDM3-160 CDM3-250	3P	107	102	51	26	54	27
	4P	142	102	51	26	54	27
CDM3-400 CDM3-630	3P	150	150	75	52.5	75.5	41
	4P	198	150	75	52.5	75.5	41
CDM3-800	3P	210	200	100	65	102	51
	4P	280	200	100	65	102	51
CDM3-1250	3P	210	266	133	78	97	48.5
	4P	--					

Safety clearance (mm)

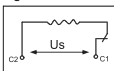


Model	A(mm)	B(mm)	B1(mm)	C(mm)
CDM3-63F/S/C	60	60	Bare conductor length + B	30
CDM3-100S/C	60	60		30
CDM3-100F/N	60	60		30
CDM3-125T	60	60		30
CDM3-125S/C	60	60		30
CDM3-160	60	60		30
CDM3-250	60	60		30
CDM3-400	110	110		70
CDM3-630	110	110		70
CDM3-800	110	110		70
CDM3-1250	110	110		70

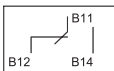
Accessory wiring diagram



Undervoltage release



Shunt release



Alarm contact

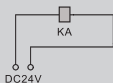


Auxiliary contact

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

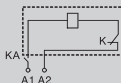
Rated control supply voltage U_s (DC24V)	Wire area	
	1.5mm ²	2.5mm ²
100% U_s	150m	250m
85% U_s	100m	160m

If failed to meet the requirements above, it is recommended to use the figure below to design the shunt release control loop.



KA: DC24V intermediate relay with the shock current capacity of 1A

In the dashed box is the schematic diagram of the shunt release



Power input

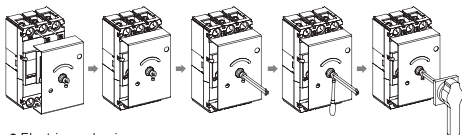
Voltage specification at the power input end:
AC230V, 400V, 50Hz; DC110V, 220V



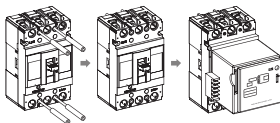
The time of duration on the shunt release shall not exceed 5s; otherwise the shunt release will be burned; when the shunt release with the rated control supply voltage of DC24V, the rated current shall reach 4.5A ~ 5.5A

Installation diagram of accessories

● Manuel mechanism

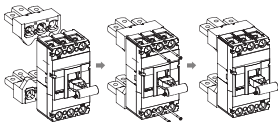


● Electric mechanism

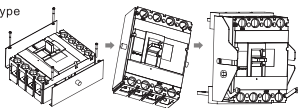


After tripping of the breaker with an electrically operated mechanism, the electrically operated mechanism must be opened first before being closed.

● Fixed



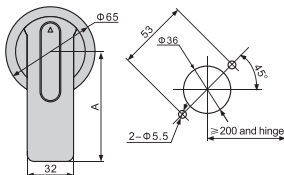
● Draw-out type



Size of accessories

● CDM3-63 ~ 800A extension turning handle (mm)

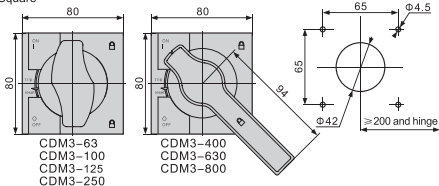
Round



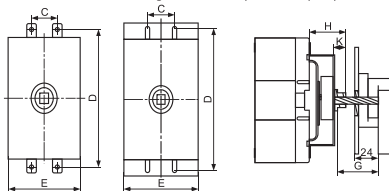
CDM3-63 ~ 250A Size A is 65 or 95 optional, 65 by default

CDM3-400 ~ 800A Size A is 95 or 125 optional, 95 by default

Square



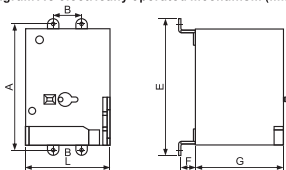
CDM3-63 ~ 800 extension turning handle base plate size (mm)



Note: The delivery standard configuration of the connecting rod at G is 150mm.
Please contact the manufacturer for special customization.

Model	C	D	E	H	K
CDM3-63F/S/C 100S/C 125S/C	25	111	75	54	20
CDM3-100F/N	30	129	92	57	20
CDM3-125T					
CDM3-160/250	35	143	100	54	20
CDM3-400/630	44	215	150	78	20
CDM3-800	70	243	--	76	20
CDM3-1250	--	--	--	--	--

Installation diagram AC electrically operated mechanism (mm)



Model	A	B	E	F	G	L
CDM3-63F/S/C 100S/C 125S/C	111	25	120	13	79	74
CDM3-100F/N	129	30	140	14	77	90.5
CDM3-125T						
CDM3-160/250	126	35	140	17	77	90.5
CDM3-400/630	215	44	232	32	115	130
CDM3-800	243	70	--	16	112	150
CDM3-1250	--	--	--	--	--	--

Step 1: tighten the mounting screw

Step 2: connect the incoming line to the breaker Line and the outgoing line to Load and then tighten the wiring screw

Step 3: install the flash barrier

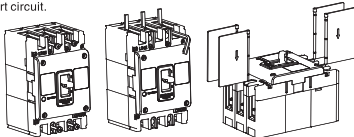
Note: See the electric operation instruction for details



N phase of four-pole product is 100% phase line area;

Malfunction or refusal to move will appear in case of failure to install the wire in accordance with the product standards;

The phase partitions must be installed for products to prevent interphase short circuit.



Attached with torque table and connecting conductor table

Model	Cross wire connection screw	Hexagon	Torque force N.m
63F/S/C 100S/C 125S/C	/	M6	4~8
125T	M8	/	3.5~4.5
160/250	/	M8	9.5~10.5
400/630	/	M10	19.5~20.5
800/1250	/	M12	29.5~30.5

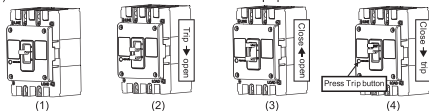
Connecting conductor (mm²)

Rated current A	10	16 20	25	32	40 50	63	80	100	125 140	160	180 200 225	250	315 350	400
Cross-section of conductor	1.5	3	4	6	10	16	25	35	50	70	95	120	185	240

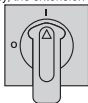
Rated current A	Quantity	Copper conductor or insulated copper wire	Copper busbar
		Cross section mm ²	Size: mm x mm
500	2	150	30×5
630	2	185	40×5
700, 800	2	240	50×5
1250	2	500	100×5

Operate and debug CDM3

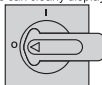
- (1) The preset position is at trip
- (2) Press the handle to the "Open" position
- (3) Close the breaker and the handle reaches the "Close" position
- (4) Press and the breaker handle returns to "Trip" position.



If installed correctly, the extension turning handle can clearly display the breaker status

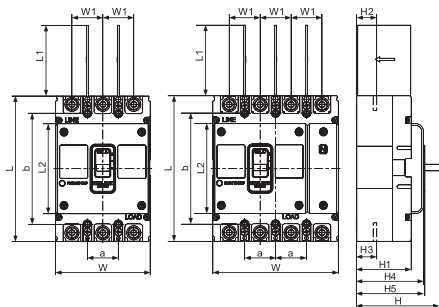


Closed position



Open position

Overall and Installation Dimensions of CDM3



Frame	Poles	Overall dimension												Installation dimension	
		L	L1	L2	L3	W	W1	H	H1	H2	H3	H4	H5	a	b
63, 100C/S 125C/S	3P	130	50	83	181	75	25	81.5	56	24	24	68	70.5	25	111
	4P					100									
100F/N	3P	150	50	96	197	92	30	111.5	81	28.5	28	93.5	95.5	30	129
	4P					122									
125T/L	3P	150	50	96	197	92	30	83.5	63	24	23.5	75.5	77.5	30	129
	4P					122									
160/250S	3P	165	80	102	259	107	35	94.5	62	23	23	76	77.5	35	126
	4P					142									
160/ 250F/N/H	3P	165	80	102	259	107	35	112.5	80	23	23	94	95.5	35	126
	4P					142									
400	3P	257	104.5	150	342	150	48	145.9	96.2	36	36/ 36.5	107.5	112.5	44	215
	4P					198									
630	3P	257	104.5	150	342	150	48	145.9	96.2	38	39	107.5	112.5	44	215
	4P					198									
800	3P	280	102	102	417	210	70	146.5	97.5	32.5	35.5	100	114	70	243
	4P					280									
1250L	4P	406	104	97	406	210	70	198	134	58	60	140	160	70	376
1250H					548										

Maintenance and tendance

- When maintenance and tendance are performed, the work should be done by professionally qualified persons.
- The superior power should be disconnected in order to make sure the input port is uncharged.
- In the normal operating condition, maintenance and tendance should be done once in a year, with the content of maintenance as follows:

Type	Item	Content
Molded case circuit breaker	Appearance	No dust, no dews, if any, cleaning is needed
		No damage
		The color of housing and connection terminal is unchanged
	Arc isolating plate	Insert the arc isolating plate in place according to the illustrated instructions
	Connections of the connection terminal	Tighten it and let it stay secure according to the torque table
	Closing/releasing operation with handle	Flexible operation is necessary
	Release button	After the product is released, the handle indicates the releasing position
Circuit breaker with accessories	Insulation test	Conduct the test according to the requirements of the product test on the front page
	With undervoltage release	Disconnect the undervoltage release from the power, the circuit breaker should be in secure disconnection, with the handle indicating the releasing position
	With shunt release	Connect the release with constant voltage, the circuit breaker should be in secure disconnection, with the handle indicating the releasing position
	With auxiliary contacts	When the circuit breaker is released and closed, the converting signal for the auxiliary contact is normal
	With alarm contacts	When the circuit breaker is closed and released (press the release button), the converting signal of the alarm contact is normal.

DELIXI
ELECTRIC

Certificate of qualification

DELIXI ELECTRIC LTD

Product: Molded Case Circuit Breaker

Type: CDM3 Series

This product has passed the inspection and is approved to delivery.

Standard: GB/T 14048.2

Inspector: 01

Date of production: See box label