General Introduction

Product Introduction

CDM3LS series residual current action circuit breaker (hereinafter referred to as: CDM3LS), its main function is to provide indirect contact protection for fatal human shock, electrical fire prote ction caused by ground fault current, such as insulation damage. And in the distribution line ov erload, short circuit, undervoltage (accessory function), to provide protection for the circuit and equipment, widely used in power, construction, industry, OEM and other low-voltage electricity places.

- Frame Level：125AF、160AF、250AF、400AF、630AF、800AF
- Rated Working Voltage Ue：400/415
- Breaking Capacity：25kA、35kA、50kA、75kA

(The specific breaking of each shell frame is detailed in the parameter table)

- Pole: Including 2/3/4
- Release type: electromagnetic, thermomagnetic
- Installation mode: fixed, insert type

Standard

Product Standard：

- GB/T 14048.1 General
- IEC 60947-1 General
- GB/T 14048.2 Circuit breaker
- IEC 60947-2 Circuit Breaker

limit environment use standard:

- IEC 60068-2-1（low temp.） GB/T 2423.1
- IEC 60068-2-2（high temp.） GB/T 2423.2
- IEC 60068-2-30（Alternating humidity and heat） GB/T 2423.2

Environment Temperature

Normal working conditions: -5~40˚C, for 40˚C-5˚C, 40˚C-70˚C occasions, please contact us.

When the working environment temperature exceeds 40 ° C, refer to the temperature reduction coefficient table.

Storage temperature: -40~70˚C

(If the storage temperature is lower than normal working conditions, the p roduct should be restored to the working temperature for at least 24 hour s before being put into use)

Pollution Level

CDM3LS working polution level: level 3
IEC 60947-1and 60664-1standard environment (industry)

Humidity

Normal working humidity: under the condition that the ambient air humidity is +40˚C, the relative humidity of the atmosphere cannot exceed 50%; If the temperature is low , it can be used under high relative humidity conditions; For example, 90% at 20˚C.

Special measures should be taken for occasional condensation due to temper

ature changes; Reliable contact indication with isolation

Complies with IEC standard 60947-2 and isolation as defined in GB/T 14048.2

- Isolation position corresponds to O (OFF) position
- The operating handle can indicate the "OFF" position only if the contact is truly open
- Rotating the handle or electrical operating mechanism does not change the reliability of the contact indicating system

Protection Level

CDM3LS body meets IP protection class: IP30 (except terminal)
CDM3LS circuit breakers installed in switchgear: Circuit breakers with toggle handles: IP40

Circuit breaker with rotary handle: IP40

Circuit breaker with electric operation mechanism: IP40

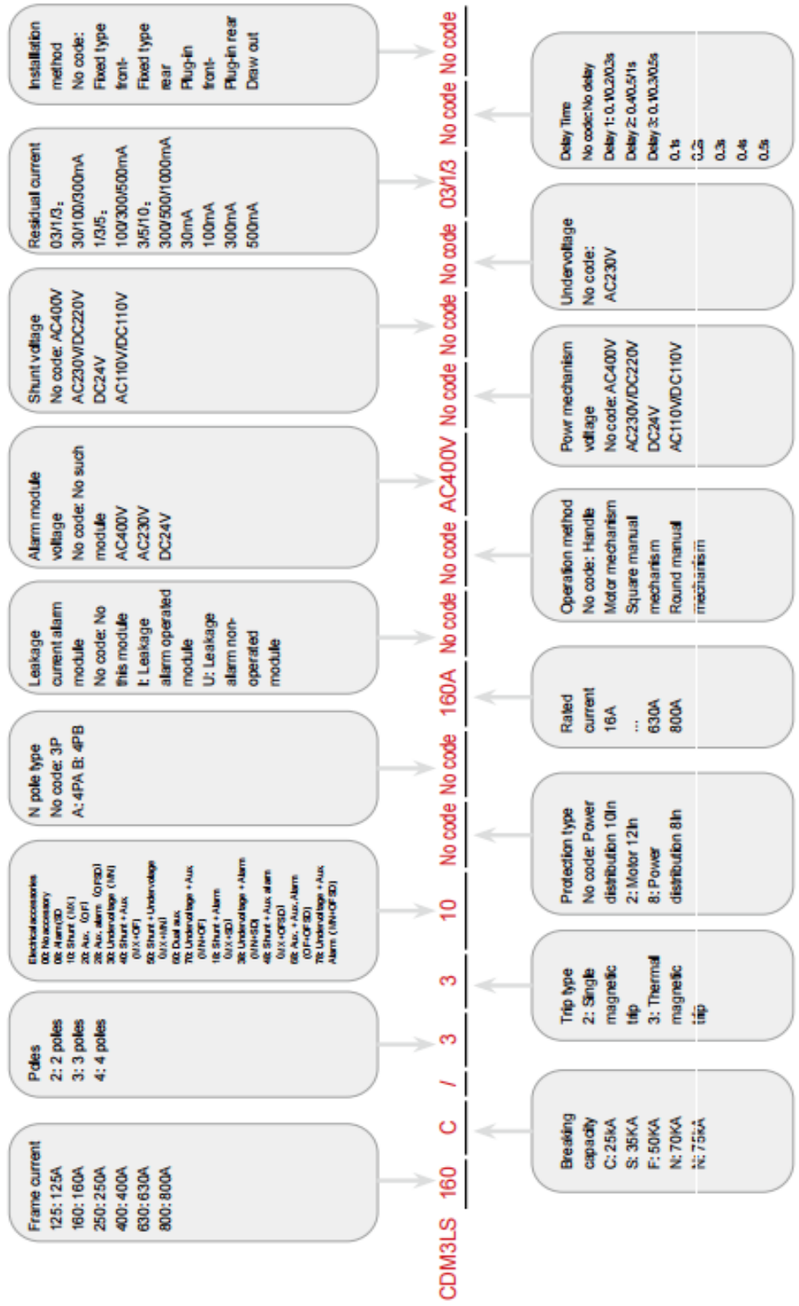
Height

Normal working altitude: ≤2000m

If you need to install at an altitude of more than 2000m, you must take into account the change of dielectric strength and air tempe rature drop, you can refer to the altitude reduction coefficient tabl e to use, or please contact us.

Selection

Material Code Description



Technical Parameter

Frame Current		CDM3LS-125			CDM3LS-160		
Rated working voltage Ue（V）		230 (2P) 400/415			230 (2P) 400/415		
Rated current In（A）		16/20/25/32/40/50/63/80/100/125			100/125/140/160		
Rated insulation voltage Ui（		800			800		
Rated impulse withstand voltageUimp（kV）		8			8		
Pole		2/3/4 (A,B)			2/3/4 (A,B)		
Short circuit breaking capacity		C	S	F (3/4P)	C	S	F (3/4P)
Icu	AC 415V	25	35	50	25	35	50
Ics	AC 415V	15	21	36	15	21	36
Rated Residule Action Current I△n mA (adjustable)	No delay	30mA, 100mA, 300mA 100mA, 300mA, 500mA 50mA, 100mA, 150mA			30mA, 100mA, 300mA 100mA, 300mA, 500mA 50mA, 100mA, 150mA		
	Delay	100mA, 300mA, 500mA			100mA, 300mA, 500mA		
Rated Residule Action Current I△n mA (Single)	No delay	30mA, 50mA, 100mA, 150mA, 200mA, 300mA, 500mA			30mA, 50mA, 100mA, 150mA, 200mA, 300mA, 500mA		
	Delay	50mA, 100mA, 150mA, 200mA, 300mA, 500mA			50mA, 100mA, 150mA, 200mA, 300mA, 500mA		
Rated remaining inactive current I△no mA		50% I△n			50% I△n		
Non-delay type: breaking time s		≤0.1			≤0.1		
Fixed delay: 2I△n Limit no drive time s (special order)		0.1/0.2/0.3/0.4/0.5/1			0.1/0.2/0.3/0.4/0.5/1		
Adjustable delay type: Limit no drive time s at 2I△n (conventional)		Delay 1: 0.1/0.2/0.3s			Delay1: 0.1/0.2/0.3s		
		Delay 2: 0.4/0.5/1s			Delay2: 0.4/0.5/1s		
		-			-		
Rated remaining short-circuit connecting capacityI△m (kA)		25% Icu			25% Icu		
Mechanical Life With maintenance		40000			40000		
Mechanical Life No maintenance		20000			20000		
Electrical Life 400V		10000			10000		
Protection	Power distribution (8/10In)	■ 40A below as 400A			■		
	Motor protection (12In) 1)	■ 40A below as 400A			■		
Release	Thermal magnetic trip	■			■		
	Single magnetic trip	■			■		
Modular mounting of accessories		■			■		
Isolation function (4PA type none)		■			■		
Connection mode							
Fixed plate front wiring		■			■		
Fixed plate rear wiring		■			■		
Insert plate rear wiring		■			■		
Product accessories							
Undervoltage release		■			■		
Shunt release		■			■		
Alarm contact		■			■		
Auxiliary contact		■			■		
Supplementary report		■			■		
Tapping screw		■			■		
Electric operating mechanism CD2		■			■		
Manual exercise		■			■		
Leakage alarm action module		■			■		
Leakage alarm no action module		■			■		
Interphase separator (standard)		■			■		
Certificate		CCC / TUV / CB			CCC / TUV / CB		
Dimension (mm)	2P	62*150*72			75*165*74		
	3P	92x150x93.3			107*165*94		
	4P	122x150x93.3			142*165*94		

CDM3LS-250			CDM3LS-400		CDM3LS-630		CDM3LS-800	
230 (2P) 400/415			400/415		400/415		400/415	
100/125/140/160/180/200/225/250			200/225/250/315/350/400		400/500/630		630/700/800	
800			800		800		800	
8			8		8		8	
2/3/4 (A,B)			3/4 (A,B)		3/4 (A,B)		3/4 (A,B)	
C	S	F (3/4P)	F	N	F	N	F	N
25	35	50	50	75	50	75	50	75
15	21	36	36	50	36	50	36	50
30mA, 100mA, 300mA 100mA, 300mA, 500mA 50mA, 100mA, 150mA			100mA, 300mA, 500mA 300mA, 500mA, 1000mA		100mA, 300mA, 500mA 300mA, 500mA, 1000mA		100mA, 300mA, 500mA 300mA, 500mA, 1000mA	
100mA, 300mA, 500mA			100mA, 300mA, 500mA 300mA, 500mA, 1000mA		100mA, 300mA, 500mA 300mA, 500mA, 1000mA		100mA, 300mA, 500mA 300mA, 500mA, 1000mA	
30mA, 50mA, 100mA, 150mA, 200mA, 300mA, 500mA			100mA, 150mA, 200mA, 300mA, 500mA, 1000mA		100mA, 150mA, 200mA, 300mA, 500mA, 1000mA		100mA, 150mA, 200mA, 300mA, 500mA, 1000mA	
50mA, 100mA, 150mA, 200mA, 300mA, 500mA			100mA, 150mA, 200mA, 300mA, 500mA, 1000mA		100mA, 150mA, 200mA, 300mA, 500mA, 1000mA		100mA, 150mA, 200mA, 300mA, 500mA, 1000mA	
50% I△n			50% I△n		50% I△n		50% I△n	
≤0.1			≤0.1		≤0.1		≤0.1	
0.1/0.2/0.3/0.4/0.5/1			0.1/0.2/0.3/0.4/0.5/1		0.1/0.2/0.3/0.4/0.5/1		0.1/0.2/0.3/0.4/0.5/1	
Delay1: 0.1/0.2/0.3s			Delay1: 0.1/0.2/0.3s		Delay1: 0.1/0.2/0.3s		Delay1: 0.1/0.2/0.3s	
Delay2: 0.4/0.5/1s			Delay2: 0.4/0.5/1s		Delay2: 0.4/0.5/1s		Delay2: 0.4/0.5/1s	
-			-		Delay3: 0.1/0.3/0.5		Delay3: 0.1/0.3/0.5	
25% Icu			25% Icu		25% Icu		25% Icu	
40000			20000		20000		10000	
20000			10000		10000		8000	
10000			8000		8000		5000	
■			■		■		■	
■			■		■		-	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			-		-		-	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
■			■		■		■	
CCC / TUV / CB			CCC / TUV / CB		CCC / TUV / CB		CCC / TUV / CB	
75*165*74			-		-		-	
107*165*94			150*257*107.5		210*280*118.5		210*280*118.5	
142*165*94			198*257*107.5		280*280*118.5		280*280*118.5	

Note: 1) 2P products donot have motor protection

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Capacity reduction coefficient table

The height below 2000 meters has no effect on the circuit breaker performance. Beyond this 2000m, the air insulation characteristics and cooling capacity must be considered. Correction is required according to the coefficients given in the table below.

Height (m)	2000	2500	3000	3500	4000	4500	5000
Insulation Voltage Ui (V)	800	728	728	664	664	616	616
Impulse Withstand Voltage Uimp (kV)	8	7	7	6.5	6.5	6	6
Max Working Voltage Ue (V)	690	690	690	660	600	600	550
Power Withstand Voltage (V)	2000	1820	1820	1660	1660	1540	1540
Rated working current in 40℃ In(A)	1In	0.98In	0.94In	0.92In	0.88In	0.86In	0.85In

In the plateau environment, the breaking capacity needs to be reduced according to the corresponding rated operating voltage, which is generally selected between 75% and 50%, and is inversely proportional to the altitude.Details can be communicated with Delixi Electrical Technology department.
Reference GB/T 20645 special environmental conditions for high altitude voltage electrical appliances technical requirements.

Temperature reduction coefficient table

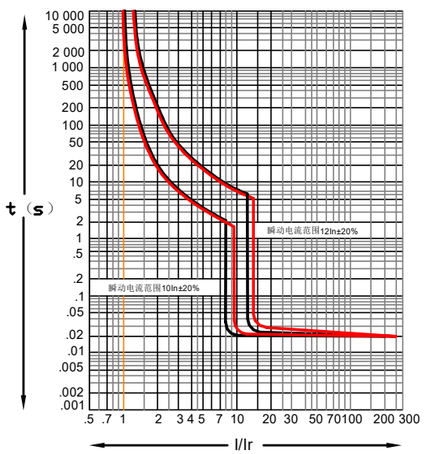
The ambient temperature of the product is: -5 ° C ~40 ° C, when the temperature exceeds 40 ° C, the high temperature will affect the performance of the release device, and the overload protection will have a small change. In the time/current curve of the release device, the Ir setting value of the circuit breaker must be corrected according to the following coefficient. For use between -40 ° C and -25 ° C, please contact us.

Product	Model	Temp℃														
		-40℃	-35℃	-30℃	-25℃	-20℃	-15℃	-10℃	-5℃	0℃	40℃	45℃	50℃	55℃	60℃	70℃
CDM3LS	125 C/S/F	1.37	1.35	1.33	1.31	1.3	1.2	1.17	1.15	1.13	1	0.97	0.96	0.94	0.92	0.88
	160 C/S/F	1.39	1.38	1.37	1.36	1.33	1.27	1.23	1.2	1.16	1	0.98	0.95	0.94	0.93	0.86
	250 C/S/F	1.48	1.46	1.39	1.35	1.3	1.26	1.19	1.17	1.15	1	0.96	0.95	0.93	0.91	0.88
	400F/N	1.59	1.58	1.55	1.52	1.44	1.42	1.4	1.32	1.28	1	0.95	0.94	0.92	0.87	0.87
	630F/N	1.54	1.52	1.48	1.45	1.36	1.34	1.25	1.22	1.18	1	0.95	0.94	0.93	0.92	0.87
	800F/N	1.39	1.37	1.35	1.33	1.31	1.29	1.24	1.22	1.18	1	0.95	0.94	9.93	0.91	0.79

Trip diagram

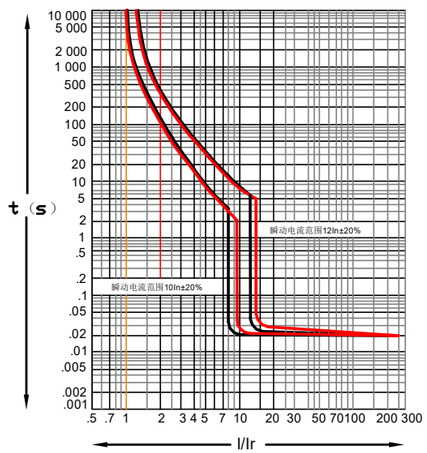
CDM3LS-125AF

CDM3LS-125AF 40A-100AThe black line is the distribution protection, the red line is the motor starting protection; 16A-32A instantaneous operating current is 400A±20%



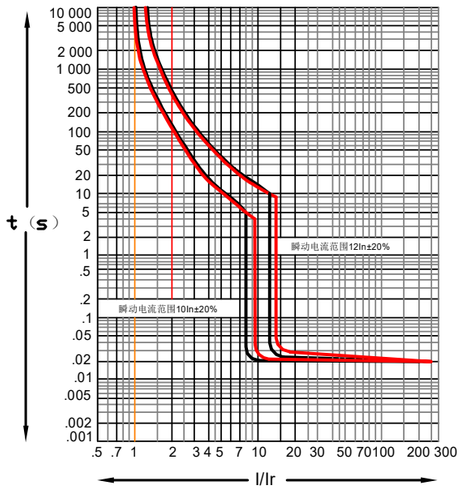
CDM3LS-160/250AF

CDM3LS-160AF 100A-160A The black line is for distribution protection, and the red line is for motor start protection；
CDM3LS-250AF 100A-250A The black line is for distribution protection, and the red line is for motor start protection；

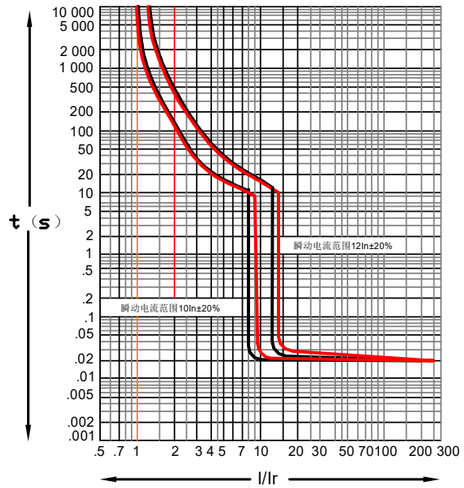


CDM3LS-400AF

CDM3LS-400AF 250A-400A black line for distribution protection, red line for motor start protection; CDM3LS-630AF 400A-630A black line for distribution protection, red line for motor start protection;

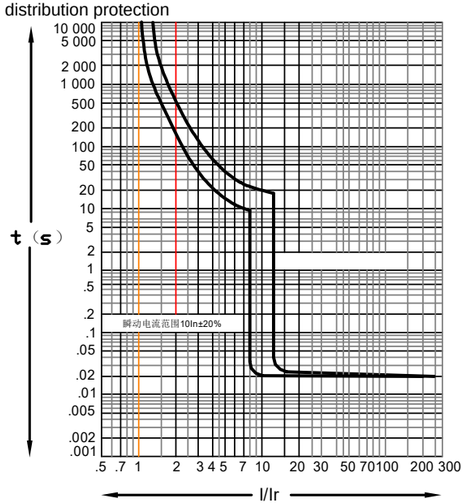


CDM3LS-630AF



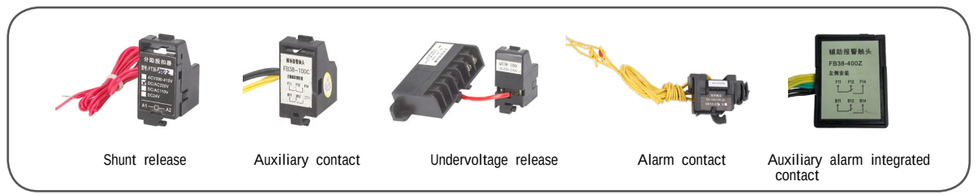
CDM3LS-800AF

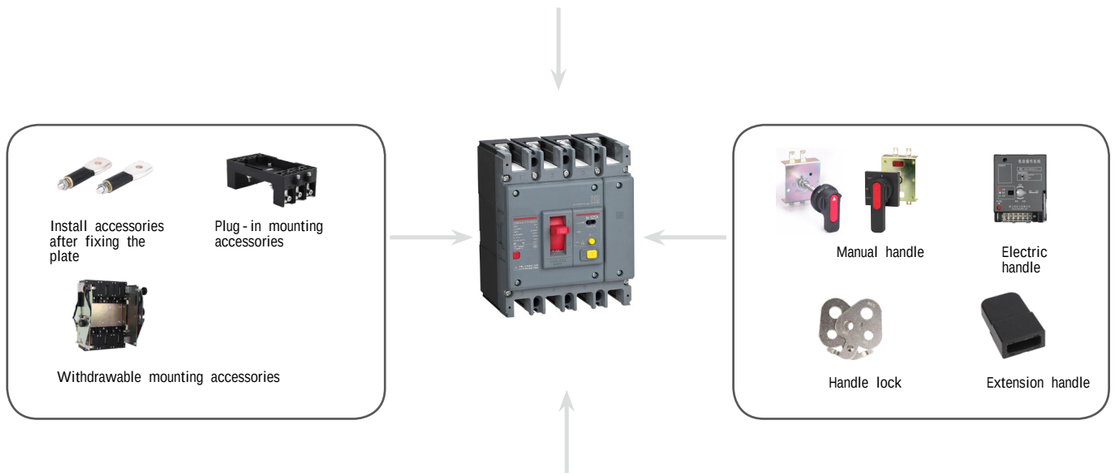
CDM3LS-800AF 630A-800A The black line is for power distribution protection

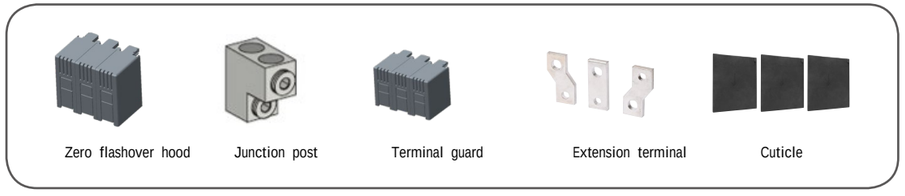


Accessory

- Electrical accessories: shunt release device, undervoltage release device, auxiliary contact, alarm contact, auxiliary alarm integrated module.
- Installation accessories: after fixing the plate installation accessories, insert installation accessories, pull out installation accessories
- Operating accessories: hand operation mechanism, electric operation mechanism, handle lock, extended handle
- Other accessories: zero flare cover, cable connector, dust cover, interphase partition, extension terminal







Accessory Selection

Electrical Accessory

CDM3LS	Frame Current	Installation Position	Accessory	Voltage Type	Type
	63/100	Left	分励	AC230	缺省：引线 0.5m（欠压为端子）
	125	Right	报警	AC400V	100: 引线 1m
	160/250		欠压	DC24V	150: 引线 1.5m
	400/630		辅助	DC110V/AC110V	200: 引线 2m
	800		双辅	DC220V	Terminal
			辅报		

Note: Except undervoltage, the electrical accessories are in the form of lead 0.5m, optional 1m, 1.5m, 2m
The default type of undervoltage is terminal shingled voltage: AC400V, AC230V/DC220V, DC24V, DC110V/AC110V
Undervoltage type: AC400V, AC230V (left side installation only)

Operating accessory

CDM3LS	Frame Current	Accessory	Type
	63/100	Electric handle	AC230V/DC220V
	125	Square handle	AC400V
	160/250	Round handle	DC24V
	400/630	Expansion square handle	DC110V/AC110V
	800	Expansion round handle	

Other accessories

CDM3LS	Frame Current	Accessory	Pole
	63/100	Expansion terminal	3P
	125	Interphase partition	4P
	160/250	Junction post	
	400/630	Handle position lock	
	800	Terminal case	