DELIXI
ELECTRIC
德力西电气

CDB6i
User Manual

□Please carefully read this manual before the installation and use of this product and keep it properly for reference.

Safety Notice

Please carefully read this manual before the installation, operation, running, maintenance and inspection of this product, and install and use this product properly in line with this manual.

 **Danger:**

- Do not operate the circuit breaker with your wet hands.
- Do not touch the live part during operation.
- Do not maintain and repair the live product.
- Do not use the short-circuit method to test the product.

 **Attention:**

- The installation, maintenance and repair of the product should be carried out by the qualified professionals.
- Do not dismantle or adjust the product without permission during operation as all characteristics of the product have been set at the factory;
- Before use, confirm that the rated voltage, rated current, frequency and features of the product meet the working requirements.
- In order to prevent short circuit between phases, the bare wires or copper busbars of terminals should be insulated;
- If found damage or abnormal sound when unpacking, stop using the product immediately and contact the supplier;
- This product is not suitable for special occasions such as frequently started motors, electric heating equipment, capacitor cabinets, high inductive or high capacitive loads and high temperature environments;
- To scrap the product, the appropriate product waste disposal is required. Thanks for your cooperation.

Table of Contents

1 Main purposes and applications

CDB6i series miniature circuit breakers are mainly used in circuits with AC 50/60Hz, rated voltage of not exceeding 400/415V (phase-to-phase), and rated current ranged 1A～63A. This series of circuit breakers are equipped with short-circuit protection release and overload protection release to provide short-circuit and overload protection.

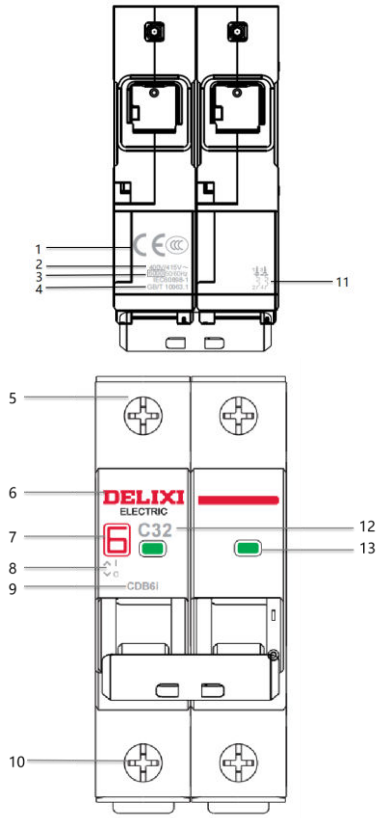
2 Product features, model and meanings

CDB 6i

Design Number

Miniature circuit breaker series

Panel description



Description:

1.Certification mark 2. Rated voltage 3.Rated frequency and Breaking capacity 4.Available standard 5.Power end 6. Company logo 7. Design serial number 8. Close break indication 9. Product model 10. Load side 11. Wiring principle diagram 12. Current specification (trip type+rated current) 13 Contact indication

Note: When closing the handle normally, if the indicator window is not synchronized with the movement,

please stop using it.

3 Normal use, installation and transport conditions

3.1 Normal use and installation conditions

a) The upper limit of ambient air temperature does not exceed +70℃, the lower limit does not exceed -35℃, and the average temperature within 24 hours does not exceed +35℃;

b) The altitude of the installation site does not exceed 2000m;

c) When the temperature is +40°C, the relative humidity of the air does not exceed 50%; at a lower temperature, a greater relative humidity is allowed. For example, at +20°C, the relative humidity does not exceed 90%. Special protective measures shall be taken for the condensation produced occasionally due to temperature changes;

d) The external magnetic field near the circuit breaker installation site should not exceed 5 times the geomagnetic field in any direction;

e) Installed in a medium without explosion hazard, and there is no enough gas and dust that cause corrosion to metals and destroy to insulation in the medium;

f) Installed in the place without significant impact vibration and rain and snow invasion;

g) Pollution level: Level 2;

h) Installation category: CategoryⅡ , Category Ⅲ ;

i) Installed in the power distribution box, electric distribution cabinet or box;

j) Reverse wiring is allowed for product;

k) When wiring products with N pole, connect the neutral wire (zero line) to the pole marked with N.

3.2 Normal storage and transport conditions

a) The lower temperature limit is not less than -40℃, and the upper limit is not more than +85℃;

b) Relative humidity (at 25℃) does not exceed 95%;

c) Handle the product gently during transport, do not upside it down and try to avoid violet collisions.

4 Technical characteristics

4.1 Main technical performance parameters

a) The main technical parameters of the circuit breaker see Table 1

Table 1 Main technical parameters

Trip type	Rated current In A	Number of poles	Rated voltage Ue V	Rated breaking capacity Icn A
B、C、D	1、2、3、4、5、6、8、10、13、16、20、25、32、40、50、63	1P	AC230/400V AC240/415V	6kA
		1P+N	AC230/240V	
		2P	AC400/415V	
		3P		
		3P+N		
		4P		

b) Overcurrent protection characteristics of circuit breakers are shown in Table 2

Table 2 Overcurrent protection characteristics of circuit breaker

Release type	Rated current In A	Test current A	Starting state	Starting time	Expected results	Remarks	Reference temperature
B, C, D	≤63	1.13In	Cold state	t≤1h	No trip	———	$+30^{+5}_{0}$℃
B, C, D	≤63	1.45In	Immediate test	t＜1h	Trip	Current rises to the specified value within 5s	
B, C, D	≤32	2.55In	Cold state	1s<t<60s	Trip	———	
B, C, D	＞32			1s<t<120s			
B	≤63	3In	Cold state	t≤0.1s	No trip	Turn on the auxiliary switch to power on	
C		5In					
D		10In					
B	≤63	5In	Cold state	t＜0.1s	Trip	Turn on the auxiliary switch to	
C		10In					

D		14In				power on	

c) The protection characteristic curves of the circuit breaker are shown in Fig. 1 and Fig. 2, respectively.

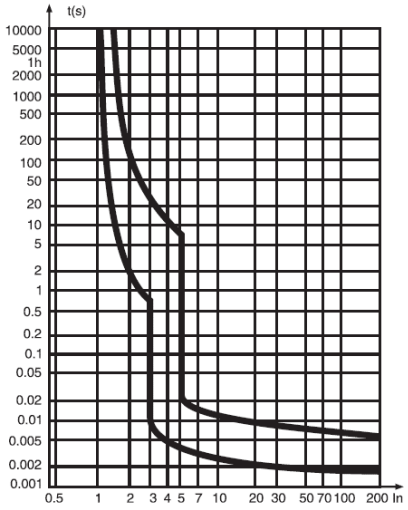


Fig. 1 B type thermal/electromagnetic trip characteristic curve

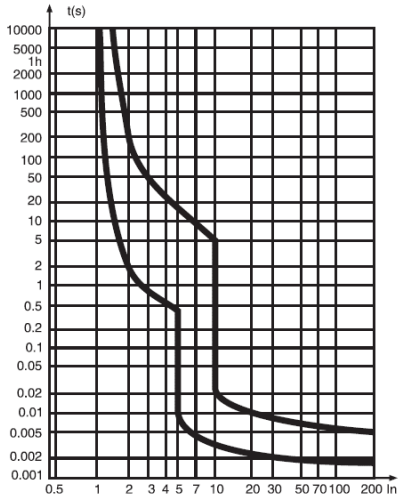


Fig. 2 C type thermal/electromagnetic trip characteristic curve

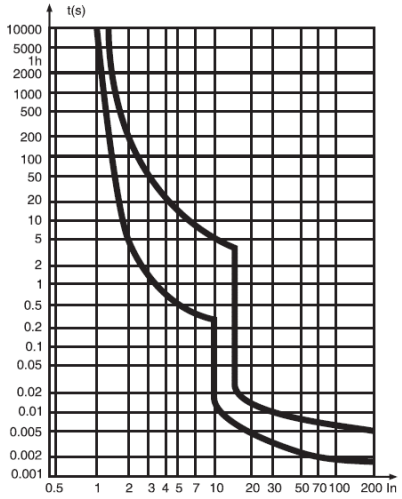


Fig. 3 D type thermal/electromagnetic trip characteristic curve

5 Outline and installation dimensions

The outline and installation dimensions see Fig. 3.

Unit:mm

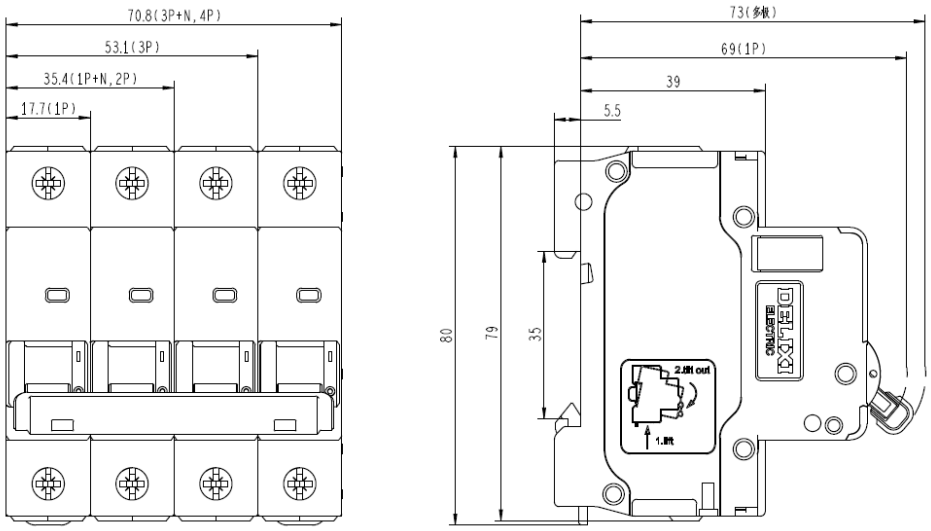


Fig. 3 Outline and installation dimensions

6 Installation and use (maintenance)

Before installing the circuit breaker:

a) Check whether the technical parameters on the printed sign meet the use requirements;

b) Before use, users should check that the insulation resistance between poles (expect for single pole), pole and housing, pole and mounting rail, incoming terminal and outgoing terminal with a 500V megohmmeter should not be less than 5MΩ. If the insulation resistance is less than 5MΩ, do not use the product and contact the supplier for timely replacement;

c) Close and open the circuit breaker several times to check the circuit breaker operating mechanism for blockage and for reliable action;

d) The reference temperature of this series of circuit breakers is $+30_{0}^{+5}$°C. If multiple circuit breakers are installed in the sealed box, the temperature inside the box will increase accordingly, and the use current is 0.8In;

e) The cross-sectional area of the connecting wire should be compatible with the rated current of the circuit

breaker, as shown in Table 3;

Table 3 Rated current and the cross-sectional area of connecting wires

Rated current value A	1, 2, 3, 4, 5, 6	8, 10	13, 16, 20	25	32	40, 50	63
Wire cross-sectional area mm²	1	1.5	2.5	4	6	10	16
Wiring tightening torque N .m	2.0 for power end and load end						

f) This series of circuit breakers are rail-mounted, and TH35-7.5 steel mounting rails are available.

g) When the ambient temperature changes, the rated current value is corrected accordingly, and the temperature correction coefficients are listed in Table 4;

Table 4 Rated current and temperature correction coefficient table

Rated current A	Corrected value of rated current A										
	-35℃	-20℃	-10℃	0℃	10℃	20℃	30℃	40℃	50℃	60℃	70℃
1	1.27	1.22	1.18	1.15	1.10	1.05	1	0.94	0.90	0.84	0.81
2	2.54	2.43	2.31	2.25	2.17	2.06	2	1.93	1.85	1.63	1.61
3	3.81	3.68	3.57	3.43	3.29	3.18	3	2.82	2.63	2.57	2.45
4	5.08	4.89	4.75	4.67	4.48	4.24	4	3.98	3.52	3.25	3.22
5	6.35	6.21	5.98	5.83	5.77	5.42	5	4.85	4.57	4.19	4.05
6	7.62	7.33	7.05	6.84	6.62	6.30	6	5.64	5.42	5.06	4.86
8	10.08	9.78	9.44	9.15	8.51	7.98	8	7.1	6.92	6.75	6.48
10	12.60	12.25	11.87	11.64	11.15	10.62	10	9.30	8.96	8.48	8.10
13	16.38	15.78	15.34	14.83	14.22	13.75	13	12.10	11.75	10.93	10.52
16	20.16	19.49	18.72	18.06	17.98	16.96	16	15.04	14.42	13.47	12.96
20	25.20	24.35	23.68	22.82	22.47	21.20	20	18.80	17.85	16.78	16.20
25	31.50	30.52	29.61	28.78	28.09	26.50	25	23.25	22.52	21.02	20.25
32	40.32	38.96	37.68	36.62	35.96	33.92	32	30.08	28.81	26.84	26.20
40	50.40	48.85	47.13	46.32	45.80	42.80	40	36.80	36.21	33.5	32.40
50	63.50	61.58	59.52	57.35	55.04	52.59	50	46	44.25	42.36	40.50
63	79.38	76.86	74.25	71.18	69.13	67.41	63	58.59	56.83	52.93	51.03

h) When the handle moves upwards, this means that the circuit is in the ON state; when the handle moves downwards, this means that the circuit is in the OFF state;

i) Insert the residual current operated circuit breaker into the mounting rail until it is fixed on the rail without any looseness or falling off. To remove the residual current operated circuit breaker, push it upward forcedly and pull its upper portion outwards until the circuit beaker is removed from the mounting rail.

Maintenance and repair:

a) The maintenance and repair of the product must be performed by qualified professionals;

b) Do not maintain or repair the live product;

c) Maintain the product once a year under normal operating conditions.The maintenance contents see Table 5.

Table 5 Maintenance and Repair

Item	Contents
Appearance	No dust, no condensation; remove them if necessary No damage No change in colors of the housing and wiring terminal
Connection of the wiring terminal	Tighten it according to the torque specified in Table 3 without any looseness
Handle ON/OFF operatoin	Flexible action

7 Unpacking inspection

After unpacking, user must check whether the product is intact, whether the exposed metal parts are rusted, and whether the product is defected due to poor transport or storage. If found one of the above situations, please contact the supplier in time for solution.

8 Company's Commitment

Under the premise that the user complies with the use and storage conditions and that the product is well sealed, if the product is damaged or cannot work normally due to poor manufacturing quality within 36 months from the production date, our company will repair or replace the product free of charges. When the warranty period expires, a paid repair is provided. For any damage caused by one of the following situations, a paid repair is given even within the warranty period:

a) Improper use, maintenance or storage;
b) Modify without permission, improper repair;
c) Damage caused by product falling off and during installation process after purchase;
d) Force majeures such as earthquake, fire, lightning stroke, abnormal voltage and secondary disaster.

If you have any question, please contact the dealer or our company's customer service department. Customer service hotline: 400-826-8008

DELIXI
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Certificate of qualification

DELIXI ELECTRIC LTD

Product: Miniature Circuit Breaker

Type: CDB6i

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

Standard: GB/T10963.1

Inspector: 01

Date of production: See box label

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This Manual will be issued in Step. 2022 First Edition