

Specification

Product name: Miniature circuit breaker

Model name: MCB full series



1. Scope of Application

This specification is applicable to the MCB series of small circuit breakers.

2. Compliance Standards

- 1) GB/T 10963.1 《Circuit Breakers for Overcurrent Protection for Household and Similar Application Part1: Circuit Breakers for AC (IEC60898-1)》.

3. Product Features

The MCB series of small circuiters adopt excellent silver alloy contacts, arc extinguishing mechanisms, and insulating materials, featuring strong breaking capacity, safety, reliability, small size, and long life.

4. Environmental Conditions

The normal operating conditions and installation conditions for the MCB series of small circuit breakers are as follows:

- Ambient temperature (temperature the control panel) $-30^{\circ}\text{C} \sim 70^{\circ}\text{C}$ (de-rated use above 30°C), with an average of no more than 35 over 24h
- Storage temperature $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}$
- Altitude below 2000 meters
- relative humidity of the atmosphere at the installation site shall not exceed 50% when the ambient air temperature is $\geq 40^{\circ}\text{C}$, and can be higher at temperatures, with the average maximum relative humidity of the wettest month being 90%, and the average minimum temperature of that month being 25°C . Special should be taken for occasional condensation due to temperature changes.
- The pollution level of the installation site can allow for pollution level 2 as specified in GB1048.1-2012, section 6.1.3.2
- The external magnetic field at the installation site should not 5 times the earth's magnetic field in any direction
- Standard mounting rail TH35 standard mounting rail
- The installation site should be free from impact and vibration

5. Miniature circuit breaker performance

5-1 Rated values

The rated insulation voltage of MCB miniature circuit breaker is 500V, the rated working voltage is AC400/415V (2P/3P), the rated frequency is 50/60Hz. model and meaning of the main circuit As shown in Table 1:

Table 1 Circuit breaker model and meaning

MCB	6K	2P	C	10
↓	↓	↓	↓	↓
Specifications	Rated short-circuit breaking capacity(kA)	Polar (P)	instantaneous tripping characteristic	In(A)
MCB	6	2P	C、D	10、16、32、63
		3P	D	16、20、32、40、63

For example

Specifications	Rated short-circuit breaking capacity	Polar	instantaneous tripping characteristic	In	Un
MCB-6K2P-C10	6kA	2P	C	10A	400/415V

5-2 Overcurrent characteristics are shown in Table 2

Table 2

NO.	Instantaneous trip type	Rated current A	Initial state	Test current A	Regulated time t	Result	Test environment Temperature °C	Note
a		In	Cold state	1.13In	$t \geq 1h$	No uncoupling	30~35	
b		In	Hot state	1.45In	$t < 1h$	decoupling	30~35	Immediately following the a test
c		In	Cold state	2.55In	$1s < t < 120s$	decoupling	30~35	
d	C/D	In	Cold state	5In/10In	$t \geq 0.1s$	No uncoupling	30~35	
e	C/D	In	Cold state	10In/15In	$t < 0.1s$	decoupling	30~35	

5-3 temperature rise

The test currents are: In, the connecting wires and the tightening torque are shown in the following table 3

Table 3

In(A)	Screw tightening torque (kgf.cm)	Conductor cross-sectional area (mm ²)	Wire length (m)	Temperature rise value (K) Terminal for connecting external wires
$6 < In \leq 13$	20(M5)	1.5	1	60
$13 < In \leq 20$		2.5	1	
$20 < In \leq 25$		4	1	
$25 < In \leq 32$		6	1	
$32 < In \leq 50$		10	1	
$50 < In \leq 63$		16	2	

5-4. Insulation resistance and withstand voltage (rated insulation voltage 500V)

5-4-1 Insulation resistance DC500V ohmmeter for measurement should be greater than the

Switch state	Switch open	Switch closed		
Measurement position	Between each pair of terminals of each pole (switch OFF)	Each pole and the other poles connected together	Between all poles connected together and the frame	Between the metal parts of the mechanism and the frame
Measurement	Over 2MΩ	Over 2MΩ	Over 5MΩ	Over 5MΩ

Note: Electronic components connected between the current loops should be disconnected during the test.

5-4-2 Pressure resistance: No abnormality shall occur when the voltage in the following table is applied to the insulation resistance measuring position

Applied voltage	Frequency	Time
2000V	50Hz or 60Hz	1 min

5-5. Mechanical and electrical life

Conditions: sinusoidal voltage AC415V (2P/3P), current In, power factor between 0.85 ~ 0.9
Connecting wires as per Table 3, operating frequency twice per minute, connection 1.5s ~ 2s.

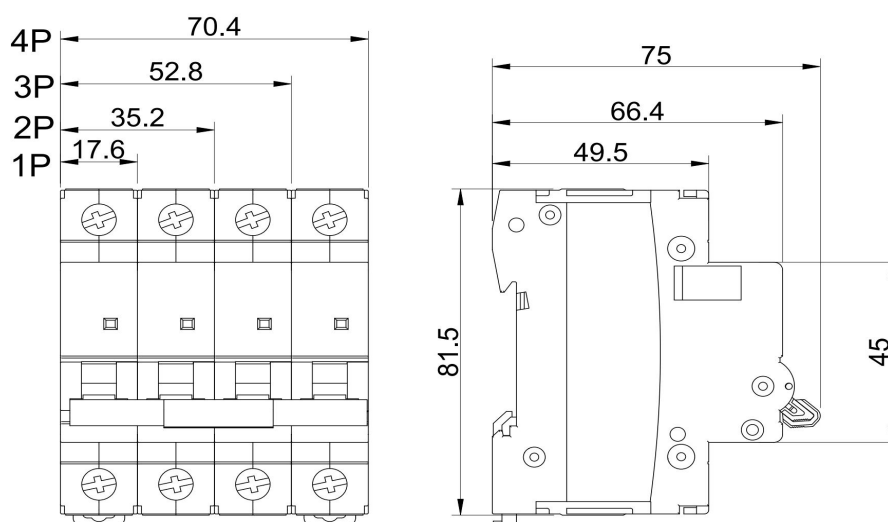
5-5-1.MCB shall be subjected to 4000 load operation cycles, each cycle consisting of one closing operation followed one opening operation. The first 2000 operation cycles shall be opened manually; the next 2000 operation cycles shall be opened by the test device.

5-5-2.BHA-B no load, manual operation 20000 times operation cycle.

6. Appearance & installation dimensions (tolerance $\pm 0.5\text{mm}$)

Type name \ Model	Dimensions H×W×D
MCB 2P	81.5×35.2×75
MCB 3P	81.5×52.8×75

MCB-6K 6kA



7. Characteristic curve

