



MCB SERIES

BL47LE-125 Circuit Breaker

Instruction manual

GB16917.1 IEC61009-1

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MCB,MCCB,RCBO,ACB,VCB,AC,SPD
RCCB,ATS,EV, DC, DB,GW

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Conforms to the standard:GB16917.1 IEC61009-1



1. Main uses and scope of application

BL47LE-125 residual current operated circuit breaker (referred to as electric circuit breaker) is suitable for AC 50Hz, rated voltage up to 400V, and rated current up to 125A lines. It is used for personal electric shock and equipment leakage protection, and has overload and short circuit protection functions. It can also be used for infrequent switching of lines under normal circumstances.

2. Normal working conditions and working environment

- 2.1 Surrounding air temperature: -5 °C~40 °C, with an average of no more than 35 °C within 24 hours.
- 2.2 Altitude: The altitude of the installation site shall not exceed 2000m.
- 2.3 Atmospheric conditions: The relative humidity of the air at the installation site shall not exceed 50% when the highest humidity is 40 °C, and the average monthly minimum temperature in the wettest month shall not exceed 25 °C, and the relative humidity shall not exceed 90%.
- 2.4 Installation method: Din35 rail type installation.
- 2.5 Pollution level: The pollution level is level 2.



2.6 Installation conditions:

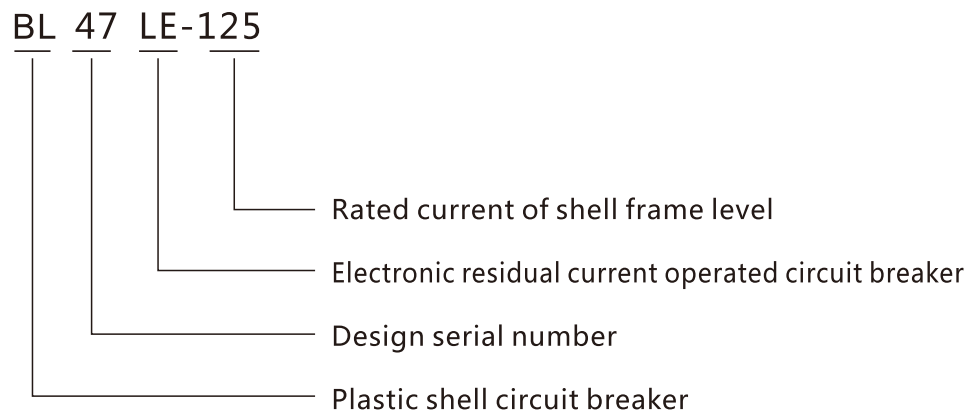
The external magnetic field of the installation place should not exceed 5 times of the geomagnetic field in any direction; the residual current action circuit breaker should be installed vertically in general: the handle is upward for the position of turning on the power supply, and the installation place should be free from significant impact and vibration.

2.7 Wiring method:

Wiring with screw compression.

3. Main specifications and technical parameters

3.1 Model and Its Meaning



3.2 Classification:

3.2.1 Classified by the number of poles and current circuits:

- 3.2.1.1 Single pole two wire residual current operated circuit breaker;
- 3.2.1.2 Two pole residual current operated circuit breaker;
- 3.2.1.3 Three pole residual current operated circuit breaker;
- 3.2.1.4 Three pole four wire residual current operated circuit breaker;
- 3.2.1.5 Four pole residual current operated circuit breaker;

3.2.2 According to the characteristics of the instantaneous release, it is divided into B type (3-5) In, C type (5-10) In, and D type (10-14) In.

3.3 Main technical parameters

- 3.3.1 Rated voltage U_n (V): Single pole with two wires and two poles at 230; Three poles, three poles, four wires, and four poles are 400;
- 3.3.2 Rated current (A): 63A, 80A, 100A, 125A
- 3.3.3 Rated current of shell frame level I_{nm} (A): 63;
- 3.3.4 Rated residual operating current $I_{\Delta n}$ (A): 0.03;
- 3.3.5 Rated residual non operating current $I_{\Delta no}$ (A): $0.5 I_{\Delta n}$;
- 3.3.6 Rated short-circuit breaking capacity $I_{\Delta m}$ (A): 6000;
- 3.3.7 Rated residual making and breaking capacity $I_{\Delta m}$ (A): 2000,
- 3.3.8 The breaking time for rated residual current action is shown in Table 1:

I_n (A)	$I_{\Delta n}$ (mA)	Maximum residual current breaking time (S)			
		$I_{\Delta n}$	$2I_{\Delta n}$	$5I_{\Delta n}$	$I_{\Delta t}$
Any value	Any value	0.3	0.15	0.04	0.04

Note: $I_{\Delta n}$ is the upper limit of the instantaneous tripping range for 500A or B, C, and D types, whichever is greater.

3.3.9 Overcurrent protection characteristics are shown in Table 2

Number	Rated current I_n A	Starting state	Test current A	Set time t	Expected results	Remarks
1	$I_n > 63$	Cold state	$1.13I_n$	$t \geq 2h$	No Tripping	
2	$I_n > 63$	Immediately following the previous test	$1.45I_n$	$t < 2h$	Tripping	The current rises steadily to the specified value within 5S
3	$I_n > 63$	Cold state	$2.55I_n$	$1s < t < 120S$	Tripping	
4	All values	Cold state	$> 3I_n$	$t \geq 0.1S$	No Tripping	B
			$\leq 5I_n$	$t < 0.1S$	Tripping	
			$> 5I_n$	$t \geq 0.1S$	No Tripping	C
			$\leq 10I_n$	$t < 0.1S$	Tripping	
			$> 10I_n$	$t \geq 0.1S$	No Tripping	D
			$\leq 20I_n$	$t < 0.1S$	Tripping	

Note: $I_n = 63A$, items 1 and 2 (2h) are changed to (1h)

3.3.10 Mechanical and Electrical Life:

Electrical lifespan: 2000 times, $\cos \Phi = 0.7$;

Mechanical life: 4000 times;

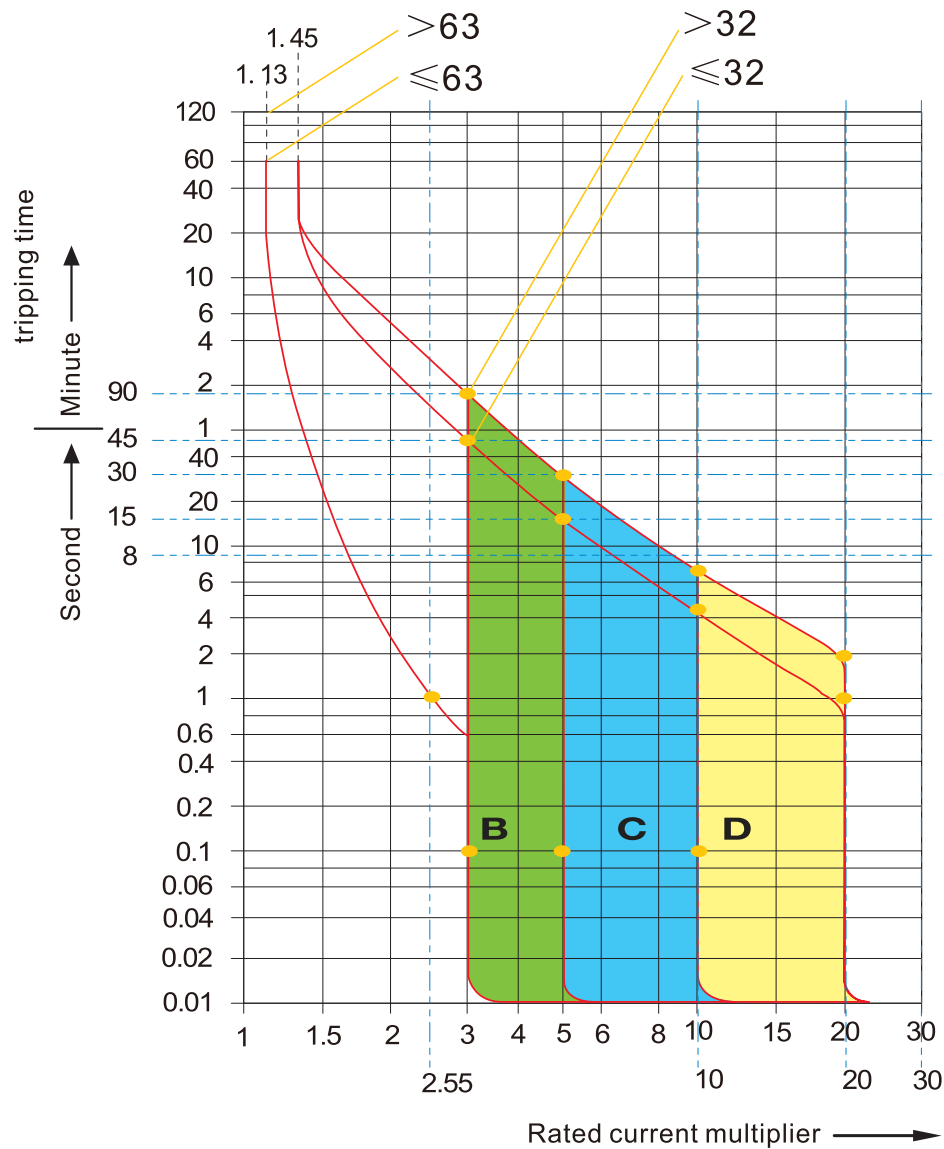
Operating frequency: $I_n \leq 25A$, 240 times/h.

$I_n > 25A$ 120 times/h.

3.3.11 Insulation impulse voltage resistance performance: The poles connected together with the neutral pole can withstand a peak impulse voltage of 6000V. The connection between each pole and the neutral pole and the metal bracket can withstand a peak impulse voltage of 8000V.

3.3.12 The peak current of the residual current operated circuit breaker is 200A, and the peak voltage is $2.5I_n$. It has the ability to withstand surge overvoltage without causing misoperation.

3.3.13 The characteristic curve of the release is shown in Figure 1; The correction factor for multi pole parallel installation is shown in Figure 2; The current carrying correction coefficient is shown in Figure 3.



B, C, D characteristic curve diagram

Figure 1

Number of poles mounted side by side	Fm
1	1
2	0.95
3	0.9
4	0.86
5	0.82
6	0.795
7	0.78
8	0.77
9	0.76
>9	0.76

Correction factor for multi pole parallel installation

Figure 2

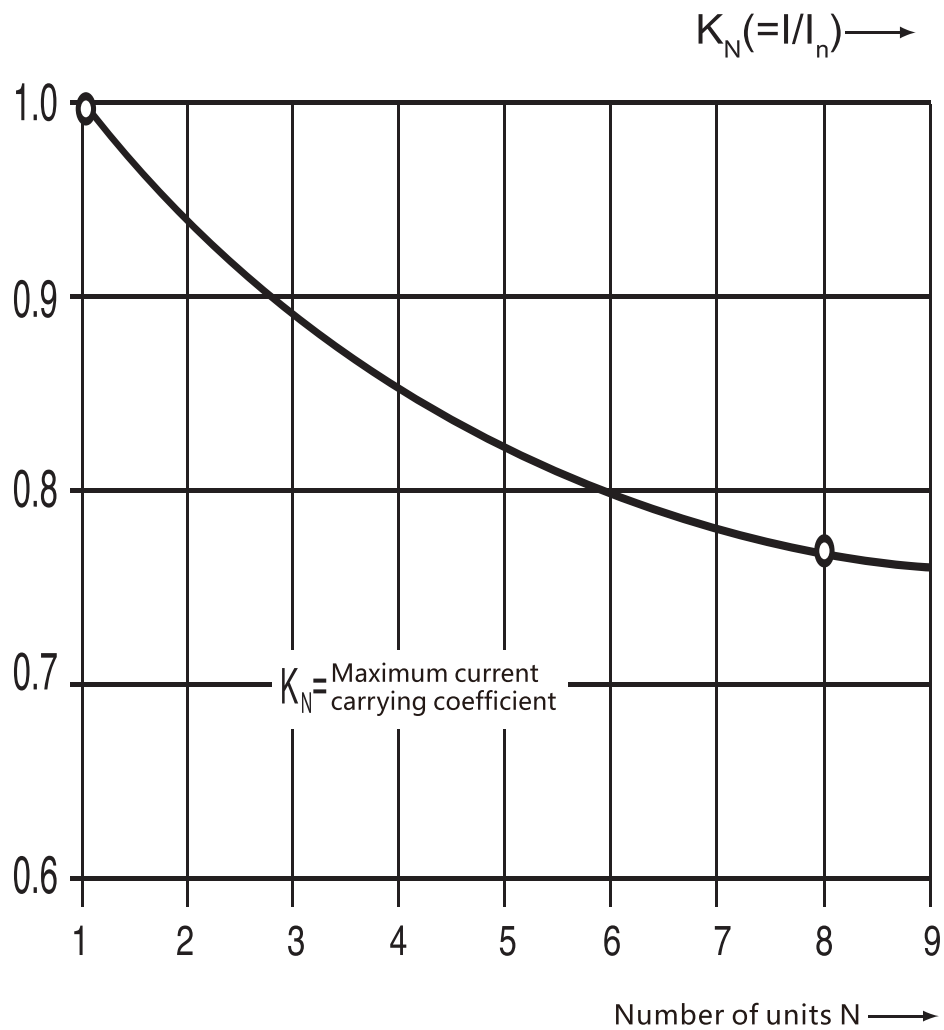


Figure 3

3.4 The outline and rail dimensions are shown in Figs. 4 and 5, and the mounting dimensions are shown in Table 3.

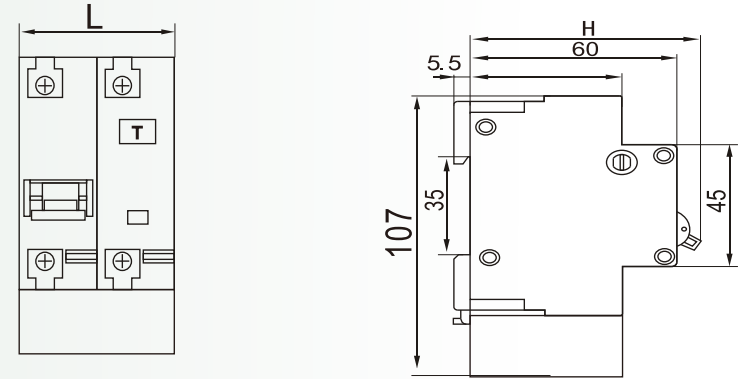


Figure 4

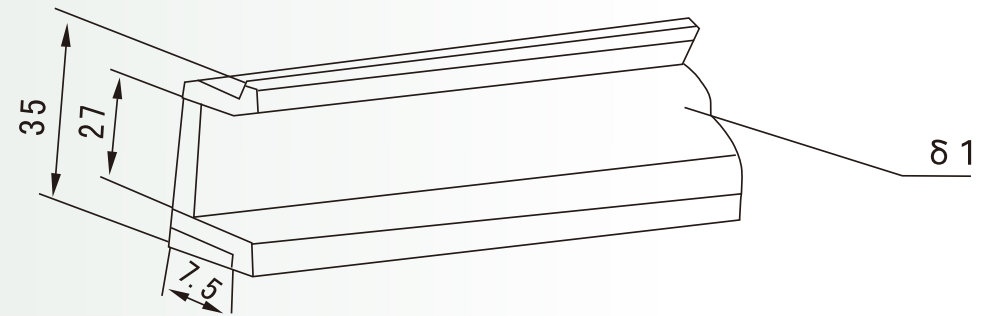


Figure 5

Extreme numbers	1 P+N	2 P	3 P	3 P+N	4 P
L mm	54 ± 1	81 ± 1	108 ± 1.5	108 ± 1.5	135 ± 1.5
H mm	67 ± 1	71 ± 1	71 ± 1	71 ± 1	71 ± 1

Table 3

4. Installation use and maintenance

5.1 To close the residual current operated circuit breaker, push the handle upward in the direction of the ON arrow; to break, pull the handle downward in the direction of the OFF arrow.

5.2 The overload, short-circuit and residual current protection characteristics of the residual current operated circuit breaker are all set by the manufacturer and cannot be disassembled and adjusted at will during use.

5.3 After one month operation of the residual current action circuit breaker, it is necessary to press the test button under closed energized state to check whether the residual current action protection performance is normal and reliable. Press the test button once a month, the residual current action circuit breaker should be broken once), failure should be unloaded and sent to the manufacturer for repair. This product warranty for one year.

5.4 Installation in strict accordance with this manual wiring diagram for proper wiring.

5. Cautions

1. When wiring, please select the standard wires according to the "Technical Data Sheet".
2. When wiring, the wiring screws should be pressed tightly to prevent product damage.
3. After the circuit breaker is tripped due to overload, short circuit or leakage, the reason should be found out before closing the circuit breaker.
4. The test button should be pressed at least once a month, and the circuit breaker should be able to operate reliably to ensure the normal use of the product.

6. Ordering instructions

1. Mark the following points when ordering:
 - 1.1 Product model and name: such as BL47LE-125 leakage circuit breaker
 - 1.2 Instantaneous release type and rated current, such as: C100.
 - 1.3 The number of circuit breaker poles, such as: 3P + N.
 - 1.4 Order quantity, such as: 500 units; 2.
2. Ordering example: BL47LE-125,3P+N,C100.500 pcs.