

TGB1NLE-32(63) Series Residual Current Circuit Breaker with Overcurrent Protection, Electronic AC Type

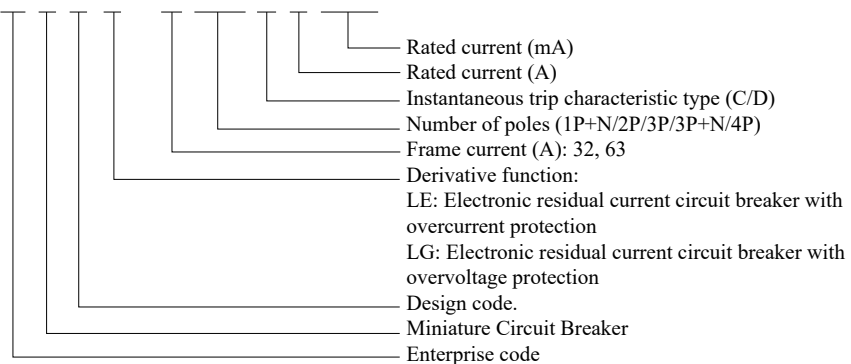


1 Overview

TGB1NLE-32(63) series residual current circuit breaker with overcurrent protection (hereinafter referred to as leakage circuit breaker) is mainly used in AC 50Hz line with rated working voltage 230V/400V and rated current up to 63A. In case of personal electric shock or when the grid leakage exceeds the specified value, the residual current circuit breaker can quickly cut off the power supply in a very short time for protection of the safety of people and electrical equipment, for overload, short circuit, and overvoltage protection and infrequent conversion of the line under normal conditions, especially suitable for industrial and commercial lighting distribution systems.

2 Type Designation

TG B 1N LE - 63 1P+N C 16 30mA



3 Technical Parameters

3.1 The main technical parameters of the product (see Table 1)

Table

Product name	TGB1NLE-32	TGB1NLE-63
Standard	IEC61009-1	
Electrical characteristics		
Number of poles	1P+N, 2P, 3P, 3P+N, 4P (N pole normally open)	1P+N, 2P, 3P, 3P+N, 4P (N pole normally open)
Rated frequency (Hz)	50	50
Frame current (A) I_{nm}	32	63
Rated current (A) I_e	6, 10, 16, 20, 25, 32	40, 50, 63
Rated voltage (V) U_e	AC230(1P+N, 2P) AC400(3P, 3P+N, 4P)	AC230(1P+N, 2P) AC400(3P, 3P+N, 4P)
Rated insulation voltage (V) U_i	690	690
Rated impulse withstand voltage (kV) U_{imp}	4	4
Rated short-circuit breaking capacity (kA) I_{cs}	6	6
Rated short-circuit breaking capacity (kA) I_{cn}	6	6
Instantaneous trip characteristics	C(5In ~ 10In) D(10In ~ 14In)	C(5In ~ 10In) D(10In ~ 14In)
Trip form	Thermal magnetic trip	Thermal magnetic trip
Pollution degree	2	2
Electrical and mechanical accessories	MX: Shunt release OF: Auxiliary contact SD: Alarm contact MX+OF: Shunt release + auxiliary contact MV: Overvoltage release MN: Undervoltage release MV+MN: Overvoltage and undervoltage release MNS: No-voltage release	MX: Shunt release OF: Auxiliary contact SD: Alarm contact MX+OF: Shunt release+ auxiliary contact MV: Overvoltage release MN: Undervoltage release MV+MN: Overvoltage and undervoltage release MNS: No-voltage release
Rated residual current (mA) $I_{\Delta n}$	15, 30, 50, 75, 100, 300	30, 50, 75, 100, 300
Maximum breaking time at rated residual current	0.1s	0.1s
Overvoltage protection: $U_{vo}=280V\pm5\%$	√	√

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Table 1, Continued

Product name	TGB1NLE-32	TGB1NLE-63
Mechanical properties		
Electrical life	10,000 times	10,000 times
Mechanical life	20,000 times	20,000 times
Protection grade	IP20	IP20
Normal operation conditions and installation characteristics		
Ambient temperature	-35°C ~ +70°C	-35°C ~ +70°C
Installation site altitude	≤2,000 meters	≤2,000 meters
Terminals	Fixed with screw	Fixed with screw
Maximum wiring capacity (mm ²)	16	25
Maximum limit torque (Nm)	2	2.5
Installation category	Class II, III	Class II, III
Installation method	TH35-7.5 standard rail	TH35-7.5 standard rail
Incoming method	Top inlet and bottom inlet	Top inlet and bottom inlet



Modular Devices

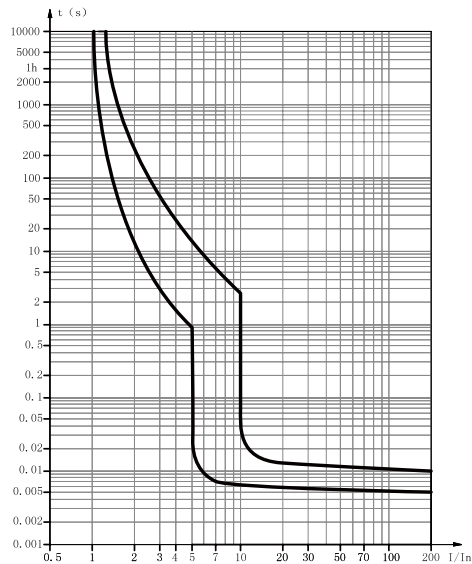
3.2 Action characteristics of circuit breaker overcurrent release (see Table 2)

Table 2

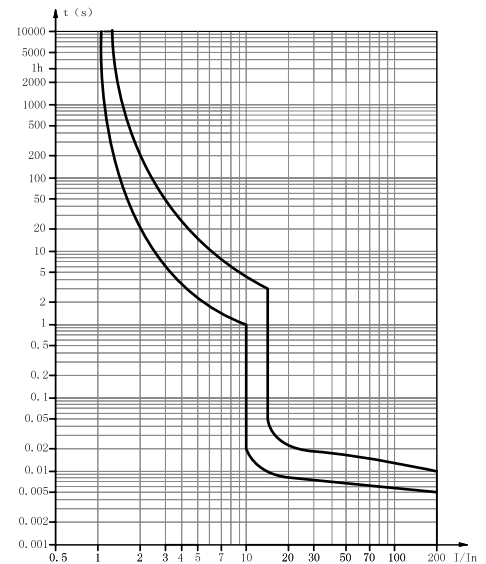
No.	Test current (A)	Start state	Set time	Expected outcome	Remarks
a	1.13I _n	Cold state	t ≤ 1h	No trip	The current rises to the specified value within 5s
	1.45I _n	Followed by 1.1.3I _n test	t < 1h	trip	
	2.55I _n	Cold state	1s < t < 60s (For I _n ≤ 32A) 1s < t < 120s (For I _n ≤ 32A)	trip	
c	5I _n	Cold state	t ≤ 0.1s	No trip	Turn on the auxiliary switch for making current
	10I _n	Cold state	t < 0.1s	trip	
d	10I _n	Cold state	t ≤ 0.1s	No trip	Turn on the auxiliary switch for making current
	14I _n	Cold state	t < 0.1s	trip	

Note: The cold state refers to the temperature 30°C without load before the test.

3.3 Protection characteristic curve of circuit breaker



C Type protection characteristic curve



D Type protection characteristic curve

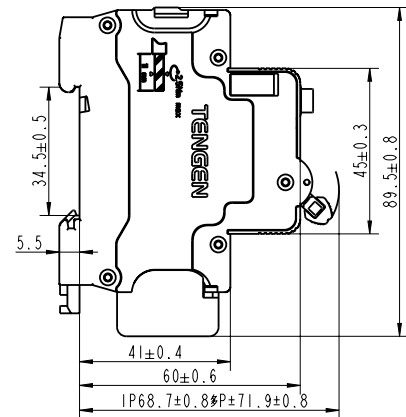
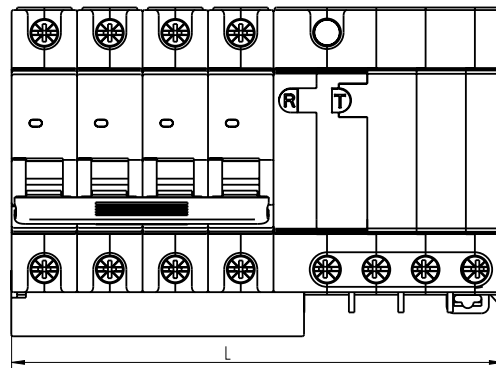
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3.4 Wiring: Suitable for wire connection of 25mm² and below (see Table 3). The wiring method is that the wire is fixed with screws according to the tightening torque 2.5N·m.

Table 3

Rated current (A)	Cross area of wire (mm ²)
6	1
10	1.5
16 ~ 20	2.5
25	4
32	6
40 ~ 50	10
63	16

4 Outline and Installation Dimensions



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Table 4

Model	Number of poles	L(mm)
TGB1NLE(LG)-32	1P+N	45
TGB1NLE(LG)-63	1P+N	54
TGB1NLE(LG)-32	2P	63
TGB1NLE(LG)-63	2P	72
TGB1NLE(LG)-32	3P	90
TGB1NLE(LG)-63	3P	103.5
TGB1NLE(LG)-32	3P+N	99
TGB1NLE(LG)-63	3P+N	117
TGB1NLE(LG)-32	4P	117
TGB1NLE(LG)-63	4P	135

5 Ordering Notice

- 5.1 Product model and name, such as: TGB1NLE-32 residual current operated circuit breaker
- 5.2 Trip type, such as: C type
- 5.3 Number of poles of product, such as 2P
- 5.4 Rated current, such as 10A
- 5.5 Rated residual operating current, such as: 30mA
- 5.6 Order quantity, such as: 50 units
- 5.7 Order example: TGB1NLE-32 2P C10 30mA, 50 units