

TGB1NL-40 Series Residual Current Circuit Breaker with Overcurrent Protection, Electromagnetic type

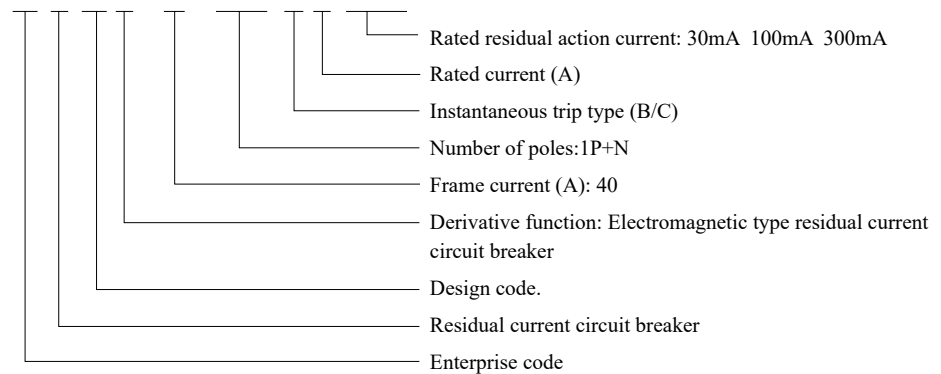


1 Overview

TGB1NL-40 series residual current circuit breaker with overcurrent protection is used in AC 50/60Hz circuit with rated voltage 230V/240V and with rated current up to 40A. It can quickly cut off the power supply in a short time in case of personal electric shock or when the leakage current of the power grid exceeds the specified value for safety protection of people and electrical equipment and is used for infrequent conversion of the line under the overload, short-circuit, and normal operating conditions. It is especially suitable for lighting distribution systems used in buildings, industries, and commercial purposes.

2 Type Designation

TG B 1N L - 40 / 1P+N C 40 30mA



3 Technical Parameters

3.1 Basic parameters

Table 1

Product name	TGB1NL-40
Standard	IEC/EN 61009-1
Certificate	TUV, CB, CE
Electrical characteristics	
Number of poles	1P+N
Rated frequency (Hz)	50/60Hz
Frame current (A) Inm	40
Rated current (A) In	6A, 10A, 16A, 20A, 25A, 32A, 40A
Rated voltage (V) Ue	AC230V/240V
Rated insulation voltage (V) Ui	500V
Rated impulse withstand voltage (kV) Uimp	4kV
Rated short-circuit breaking capacity (kA) Ics	6
Rated short-circuit capacity (kA) Icn	6
Instantaneous trip characteristics	Type B, Type C
Rated residual making and breaking capacity (A) (I Δ m)	500A
Maximum breaking time at rated residual current	≤0.1s
Pollution degree	2
Electrical and mechanical accessories	-
Rated residual operating current (mA) (I Δ n)	30mA, 100mA, 300mA

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Table 1, continued

Product name	TGB1NL-40
Mechanical properties	
Electrical life	2,000 times
Mechanical life	4,000 times
Protection grade	IP20
Indicator window	√
Normal operation conditions and installation characteristics	
Ambient temperature	-25°C ~ +70°C
Installation site altitude	≤ 2,000 meters
Terminals	Fixed with screws
Maximum wiring capacity	25mm ²
Maximum limit torque	2.5N•m
Installation category	II
Installation method	35mm standard rail
Incoming method	Upper and lower

3.2 The breaking time of A and AC type AC residual current (effective value) is shown in Table 2

Table 2

Rated current (In)	Number of poles	Instantaneous trip type	Rated residual operating current (I _{Δn})	Operation type of residual operating current	Rated voltage (ue)	Rated short-circuit breaking capacity (Icn)
6A, 10A 16A, 20A 25A, 32A 40A	1P+N (N pole openable and closable)	Type B Type C	30mA 100mA 300mA	Type A Type AC	AC230V AC240V	6,000A

3.3 Action characteristics of circuit breaker overcurrent release (see Table 3)

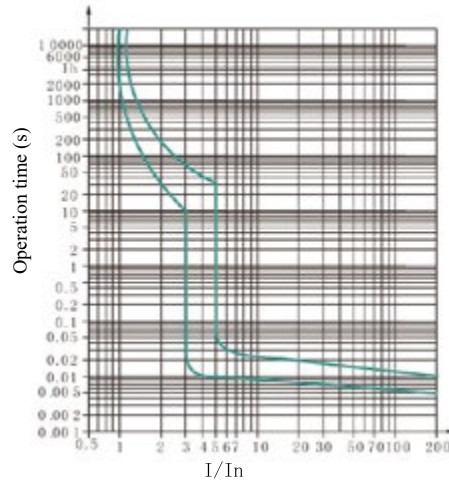
Table 3

Instantaneous trip type	Test current	Start state	Tripping or non-tripping limit time	Expected results	Remarks
B, C	1.13In	Cold state	t ≤ 1h	Non-tripping	The current steadily rises to the specified value
	1.45In	Followed by 1.13In test	t < 1h	Tripping	
	2.55In	Cold state	1s < t < 60s (for In ≤ 32A) 1s < t < 120s (for In > 32A)	Tripping	
B	3In	Cold state	t ≤ 0.1s	Non-tripping	Turn on the current by closing the auxiliary switch
	5In		t < 0.1s	Tripping	
C	5In	Cold state	t ≤ 0.1s	Non-tripping	
	10In		t < 0.1s	Tripping	

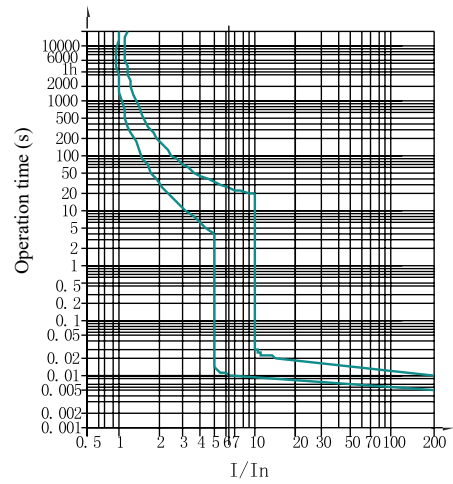
Note: "cold state" refers to no load before the test at the reference temperature +30°C

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3.3 Protection characteristic curve of circuit breaker



B type protection characteristic curve



C type protection characteristic curve

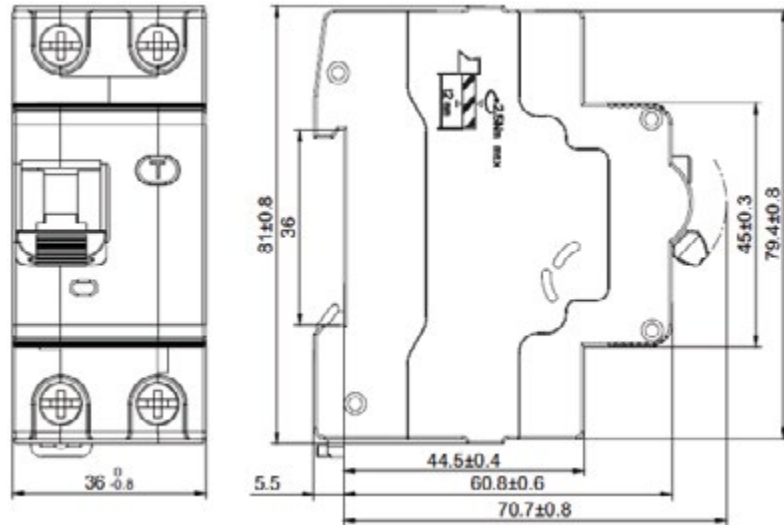
3.5 Wiring: Suitable for wire connection of 25mm^2 and below (see Table 4). The wiring method is that the wire is fixed with screws according to the tightening torque $2.5\text{N}\cdot\text{m}$.

Table 4

Rated current (A)	Wire cross area (mm^2)
6	1
10	1.5
16 ~ 20	2.5
25	4
32	6
40	10

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4 Outline and Installation Dimensions



5 Ordering Notice

- 5.1 Product name, such as TGB1NL-40 residual current operated circuit breaker;
- 5.2 Number of product poles, such as 1P+N;
- 5.3 Instantaneous trip type of product, such as Type C;
- 5.4 Rated current of product, such as 40A;
- 5.5 Rated residual operating current of product, such as 30mA;
- 5.6 Product breaking capacity, such as 6kA;
- 5.7 Working type of residual operating current of product, such as AC type;
- 5.8 Qty., such as 100 units;
- 5.9 Order example: TGB1NL-40 1P+N C40 6kA 30mA AC type, 100 pcs.