

## TGB1NL-40 Series Residual Current Circuit Breaker with Overcurrent Protection, Electromagnetic A/AC Type

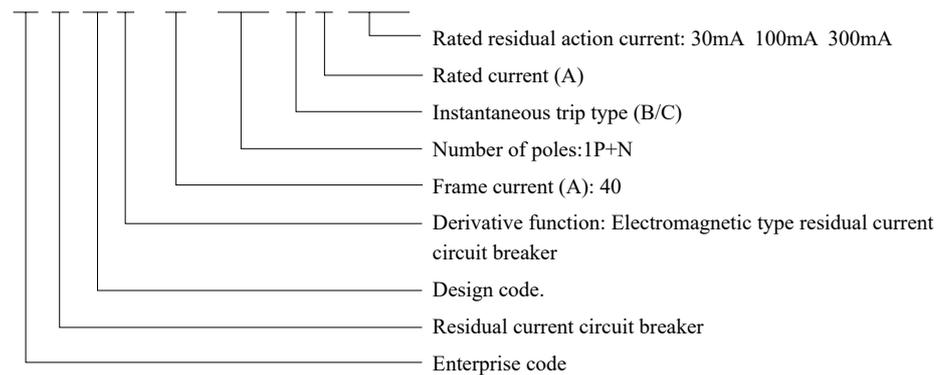


### 1 Overview

TGB1NL-40 Series Residual Current Circuit Breaker with Overcurrent Protection, Electromagnetic A/AC Type 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
<b>Electrical characteristics</b>	
Rated voltage (Ue)	AC230V/240V
Rated frequency (Hz)	50/60Hz
Rated current (Ie)	6, 10, 16, 20, 25, 32, 40A
Rated residual operating current IΔn	30mA, 100mA, 300mA
Rated operating current type	Type AC, Type A
Residual operating current time (t)	≤0.1S;
Rated residual making and breaking capacity IΔm	500/2000A
Number of poles	1P+N
Rated insulation voltage (Ui)	500V
Rated impulse withstand voltage (Uimp)	4KV
Rated ultimate short circuit breaking capacity (Icn)	6KV
Rated run short circuit breaking capacity (Ics)	6KV
Instantaneous release type	Type B/C
Pollution degree	2

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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
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	16mm <sup>2</sup>
Maximum limit torque	2.5N•m
Installation category	Class II, Class III
Installation method	TH35-7.5 standard rail
Incoming method	top inlet and bottom inlet

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

Table 2

I $\Delta$ n	Max. breaking time of RCBO at the following residual current (s)				
	I $\Delta$ n	2I $\Delta$ n	5I $\Delta$ n	0,25A	5A~200A, 500A <sup>a</sup>
30mA	0,1	0,08	/	0,04	0,04
>30mA	0,1	0,08	0,04	/	0,04

<sup>a</sup> Test is carried out according to the d) to verify the correct operation, but any current greater than the lower limit of the overcurrent instantaneous trip range will not be subject to the test in any situation.

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

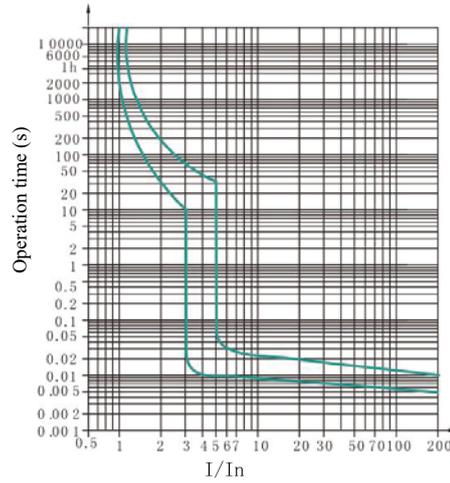
Table 3

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

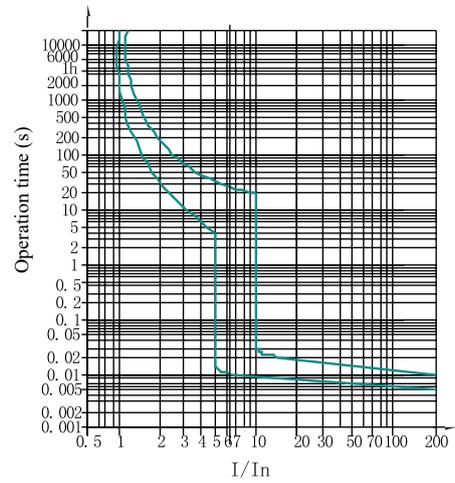
Note: "cold state" refers to no load before the test at the reference temperature +30°C

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### 3.3 Protection characteristic curve of circuit breaker



B type protection characteristic curve



C type protection characteristic curve

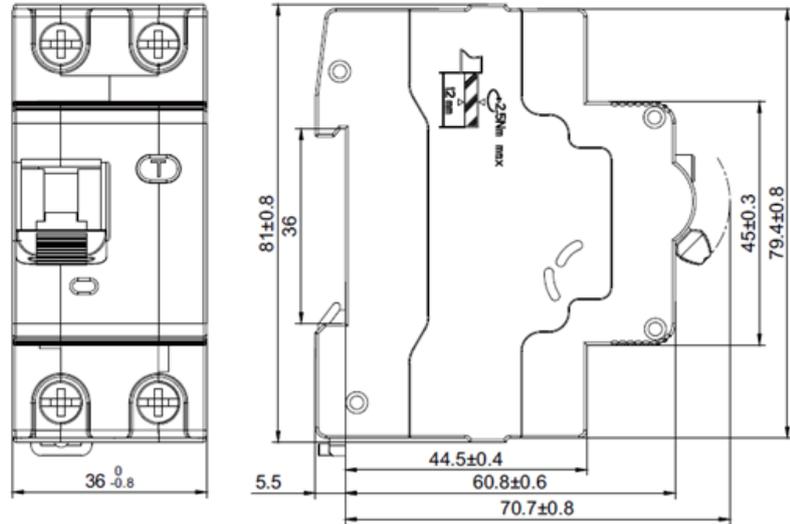
3.5 Wiring: Suitable for wire connection of 16mm<sup>2</sup> and below (see Table 4). The wiring method is that the wire is fixed with screws according to the tightening torque 2.5N·m.

Table 4

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

## TGB1NL-40 Series Residual Current Circuit Breaker with Overcurrent Protection, Electromagnetic A/AC Type

### 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.