TGB3-63(H) / TGB3-63L

Series Miniature Circuit Breaker

TGB3-63(H) / TGB3-63L Series Circuit Breaker

1 Overview

TGB3 series circuit breakers are primarily used in low-voltage terminal power distribution systems in many fields such as industry, construction, new energy, communication and infrastructure construction. The product has the functions of overload, short circuit protection and isolation.

The product complies with the following standards:

TGB3-63(H) complies with the standards: GB/T 10963.1, GB/T 10963.2, IEC/EN 60898-1, IEC/EN 60898-2.

TGB3-63L complies with the standards: GB/T 14048.2, IEC/EN 60947-2.

2 Working Environmental Conditions

- Altitude: Not exceed 2000m;
- Ambient air temperature: -35°C~+70°C; the mean temperature within 24h does not exceed +40°C;
- Atmospheric conditions: The relative humidity of the air does not exceed 50% at a maximum temperature of +40°C. Higher relative humidity can be allowed at lower temperatures, for example, the relative humidity is 90% at +20°C.

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3 Type Designation

TG	B	3	-	□	□	□	□	□
①	②	③		④	⑤	⑥	⑦	⑧

①	Enterprise code	
②	Circuit breakers	
③	Design No.	
④	Frame current (A)	63
⑤	Breaking capacity	Default: 6kA H: 10kA L: 15kA
⑥	Number of poles	1P, 1P+N, 2P, 3P, 3P+N, 4P
⑦	Trip characteristics	Type B Type C Type D
⑧	Rated current	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63

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4 Technical Parameters

Model	TGB3-63	TGB3-63H	TGB3-63L
Standard	GB/T 10963.1 GB/T 10963.2 IEC/EN 60898-1 IEC/EN 60898-2	GB/T 10963.1 GB/T 10963.2 IEC/EN 60898-1 IEC/EN 60898-2	GB/T 14048.2 IEC/EN 60947-2
Product certification	CCC, TUV, CE, CB	CCC, TUV, CE, CB	CCC, TUV, CE, CB
Frame current (A)	63	63	63
Number of poles	1P, 1P+N, 2P, 3P, 3P+N, 4P	1P, 1P+N, 2P, 3P, 3P+N, 4P	1P, 1P+N, 2P, 3P, 3P+N, 4P
Rated current In (A)	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63
Rated voltage Ue (V)	AC: AC220/380V, 230/400V, 240/415V(1P), AC220/230/240V(1P+N), AC380/400/415V(2P, 3P, 3P+N, 4P) DC: DC60/80V(1P, 2P)	AC: AC220/380V, 230/400V, 240/415V(1P), AC220/230/240V(1P+N), AC380/400/415V(2P, 3P, 3P+N, 4P), DC: DC60/80V(1P, 2P)	AC220/230/240V(1P, 1P+N) AC380/400/415V(2P, 3P, 3P+N, 4P)
Rated insulation voltage Ui (V)	690	690	690
Rated impulse withstand voltage Uimp (kV)	6	6	6
Rated short circuit breaking capacity Icn (kA)	6	10	/
Rated limit short-circuit breaking capacity Icu (kA)	/	/	15
Rated operating short-circuit breaking capacity Ics (kA)	6	7.5	7.5
Trip type	Thermal magnetic trip	Thermal magnetic trip	Thermal magnetic trip
Instantaneous trip characteristics (In)	AC: B: 3~5 C: 5~10 D: 10~14 DC: B: 4~7 C: 7~15	AC: B: 3~5 C: 5~10 D: 10~14 DC: B: 4~7 C: 7~15	B: 4±20% C: 8±20% D: 12±20%
Pollution degree	2	2	3
Protection grade	IP20	IP20	IP20
Mechanical life	20,000 times	20,000 times	20,000 times
Electrical life	10,000 times	10,000 times	10,000 times
Ambinet temp.	-35°C~+70°C	-35°C~+70°C	-35°C~+70°C
Altitude of installation site	≤2000m	≤2000m	≤2000m
Max. wiring capacity (mm^2)	25	25	25
Max. limit torque (N.m)	2.5	2.5	2.5
Installation category	Class II	Class II	Class II, III
Installation method	TH35-7.5 standard rail	TH35-7.5 standard rail	TH35-7.5 standard rail
Accessories	OF3: Aux. contact SD3: Alarm contact OF + OF3: Dual aux. integrated contact SD + SD3: Aux. and alarm integrated contact MX3: Shunt release MX + OF3: Shunt aux. release MV3: Overvoltage release MN3: Undervoltage release MV + MN3: Overvoltage / Undervoltage release MNs3: Undervoltage release	OF3: Aux. contact SD3: Alarm contact OF + OF3: Dual aux. integrated contact SD + SD3: Aux. and alarm integrated contact MX3: Shunt release MX + OF3: Shunt aux. release MV3: Overvoltage release MN3: Undervoltage release MV + MN3: Overvoltage / Undervoltage release MNs3: Undervoltage release	OF3: Aux. contact SD3: Alarm contact OF + OF3: Dual aux. integrated contact SD + SD3: Aux. and alarm integrated contact MX3: Shunt release MX + OF3: Shunt aux. release MV3: Overvoltage release MN3: Undervoltage release MV + MN3: Overvoltage / Undervoltage release MNs3: Undervoltage release

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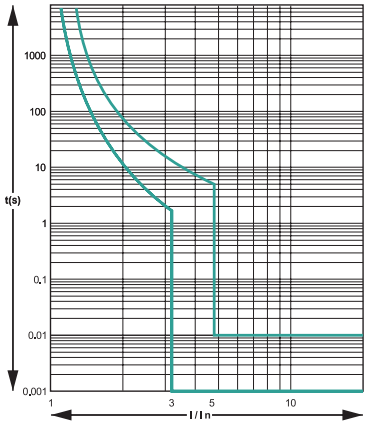
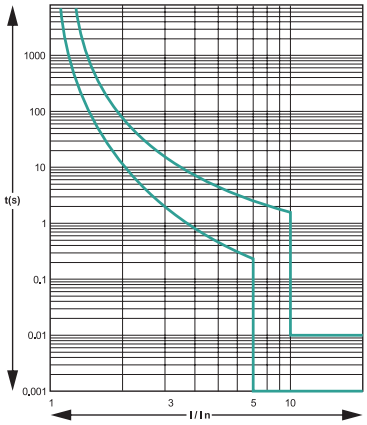
5 Characteristic Curves

5.1 TGB3-63 and TGB3-63H Product Trip Curve (AC voltage)

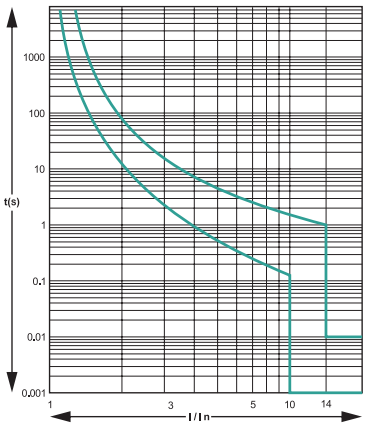
B type curve
Protection against loads with low short circuit current
(e.g. non-inductive or micro-inductive circuits)
Trip characteristics: Instantaneous trip range
(3In~ 5In)



C type curve
Protection against conventional loads and distribution cables
Trip characteristics: Instantaneous trip range
(5In~ 10In)

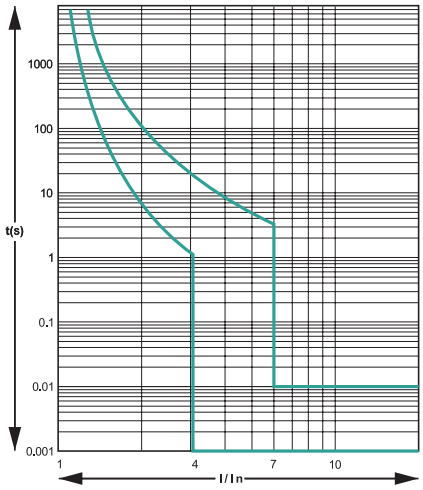


D type curve
Protection against impulse loads with high starting currents
(e.g. motors, transformers)
Trip characteristics: Instantaneous trip range
(10In~14In)

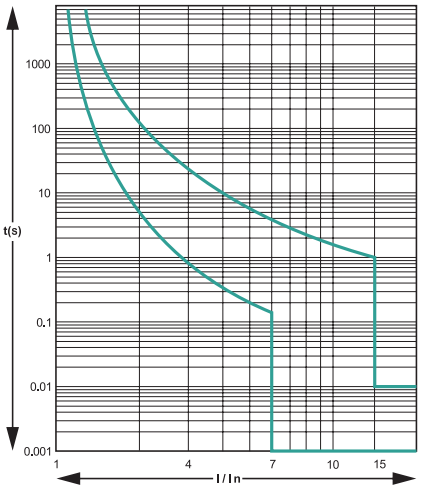


5.2 TGB3-63 and TGB3-63H Product Trip Curve (DC voltage)

B type curve
Protection against loads with low short circuit current
(e.g. non-inductive or micro-inductive circuits)
Trip characteristics: Instantaneous trip range
(3In~ 5In)



C type curve
Protection against conventional loads and distribution cables
Trip characteristics: Instantaneous trip range
(7In~ 15In)



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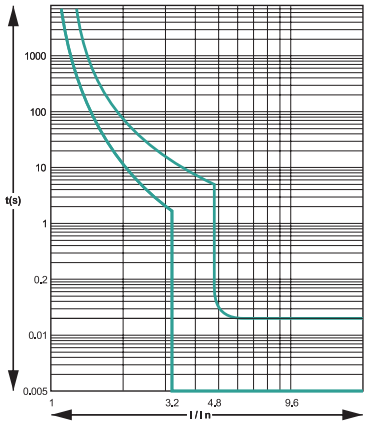
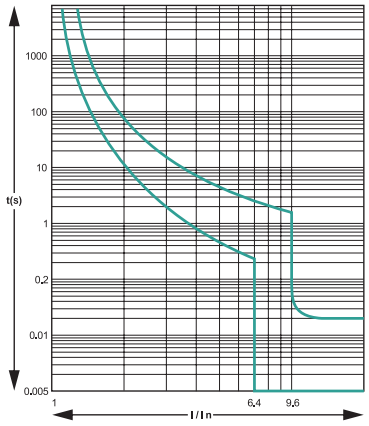
5.3 TGB3-63L Product trip curve

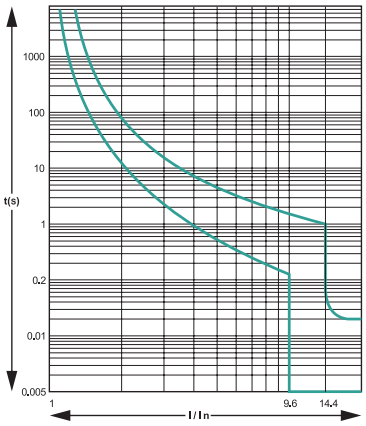
B type curve
Protection against loads with low short circuit current
(e.g. non-inductive or micro-inductive circuits)
Trip characteristics: Instantaneous trip range
(4In±20%)



C type curve
Protection against conventional loads and distribution cables
Trip characteristics: Instantaneous trip range
(8In±20%)



D type curve
Protection against impulse loads with high starting currents
(e.g. motors, transformers)
Trip characteristics: Instantaneous trip range
(12In±20%)



6 Temperature Correction Factors Table

6.1 TGB3-63, TGB3-63H, TGB3-63L Correction Factors Table

Rated current A	Correction current A											
	-35°C	-30°C	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C
1	1.27	1.25	1.23	1.21	1.19	1.17	1.15	1.13	1.10	1.08	1.06	1.05
2	2.41	2.38	2.35	2.32	2.29	2.26	2.23	2.2	2.17	2.13	2.10	2.07
3	3.89	3.83	3.76	3.7	3.64	3.57	3.50	3.44	3.37	3.30	3.22	3.14
4	4.84	4.81	4.75	4.68	4.62	4.55	4.49	4.42	4.35	4.29	4.22	4.15
5	6.35	6.25	6.15	6.05	5.95	5.85	5.75	5.65	5.50	5.40	5.30	5.25
6	7.70	7.58	7.46	7.34	7.21	7.09	6.96	6.83	6.70	6.56	6.42	6.27
10	13.89	13.62	13.35	13.07	12.81	12.53	12.23	11.93	11.63	11.33	11.01	10.67
16	20.78	20.43	20.08	19.75	19.40	19.05	18.70	18.33	17.96	17.58	17.20	16.80
20	25.67	25.28	24.88	24.47	24.06	23.64	23.22	22.78	22.34	21.89	21.43	20.96
25	32.21	31.72	31.22	30.70	30.18	29.65	29.10	28.55	27.98	27.41	26.82	26.22
32	41.04	40.46	39.82	39.17	38.51	37.84	37.15	36.47	35.75	35.03	34.30	33.54
40	51.63	50.86	50.04	49.21	48.37	47.51	46.63	45.74	44.83	43.90	42.95	41.98
50	64.92	63.97	62.92	61.86	60.77	59.67	58.54	57.40	56.23	55.05	53.81	52.56
63	83.48	82.06	80.64	79.19	77.72	76.22	74.70	73.14	71.54	69.91	68.24	66.53

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Rated current A	Correction current A									
	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C	65°C	70°C
1	1.02	1	0.97	0.94	0.91	0.89	0.86	0.83	0.80	0.77
2	2.03	2	1.96	1.93	1.89	1.86	1.82	1.78	1.74	1.70
3	3.06	3	2.92	2.84	2.76	2.67	2.58	2.49	2.38	2.27
4	4.07	4	3.93	3.85	3.77	3.69	3.61	3.53	3.44	3.36
5	5.10	5	4.85	4.70	4.55	4.45	1.30	4.15	4.00	3.85
6	6.14	6	5.84	5.68	5.52	5.36	5.19	4.01	4.83	4.64
10	10.34	10	9.63	9.24	8.85	8.45	8.01	7.55	7.06	6.55
16	16.40	16	15.55	15.11	14.66	14.20	13.71	13.21	12.70	12.15
20	20.47	20	19.47	18.95	18.42	17.87	17.30	16.71	16.10	15.47
25	25.61	25	24.33	23.67	23.00	22.28	21.56	20.80	20.02	19.21
32	32.77	32	31.17	30.34	29.48	28.60	27.69	26.75	25.78	24.77
40	40.99	40	38.93	37.85	36.75	35.61	34.43	33.21	31.95	30.63
50	51.28	50	47.82	46.24	44.81	43.33	41.81	40.23	38.58	35.77
63	64.78	63	60.11	58.19	56.21	54.16	52.03	49.81	47.50	43.05

7 Outline and Installation Dimensions

TGB3-63, TGB3-63H, TGB3-63L Outline Dimensions