



TGB3-63(H)DC

Series DC Circuit Breaker

TGB3-63(H)DC Series DC Circuit Breaker

1 Overview

TGB3-63(H)DC series DC circuit breaker is primarily used in low-voltage terminal power distribution system in the new energy and communication fields, and it has the overload, short circuit protection, isolation, and DC system protection functions.

The product complies with the standards: GB/T 14048.2, IEC/EN 60947-2.

2 Working Environmental Conditions

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

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3 Type Designation

TG	B	3	-	☐	☐	☐	☐	☐	☐
①	②	③	④	⑤	⑥	⑦	⑧	⑨	

①	Enterprise code	
②	Circuit breakers	
③	Design No.	
④	Frame current (A)	63
⑤	Breaking capacity	Default: 6kA H: 10kA
⑥	Derived code	DC: DC
⑦	Number of poles	1P, 2P, 3P, 4P
⑧	Trip characteristics	Type B Type C Type D
⑨	Rated current	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63

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4 Technical Parameters

Table 1

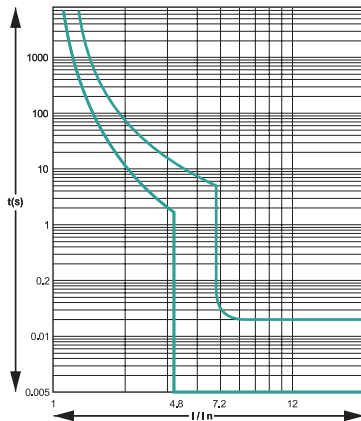
Model	TGB3-63DC	TGB3-63HDC
Standard	GB/T 14048.2 IEC/EN 60947-2	GB/T 14048.2 IEC/EN 60947-2
Product certification	CCC, TUV, CE, CB	CCC, TUV, CE, CB
Frame current (A)	63	63
Number of poles	1P, 2P, 3P, 4P	1P, 2P, 3P, 4P
Rated current I_n (A)	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63	1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63
Rated voltage U_e (V)	DC250V(1P), DC500V(2P), DC750V(3P), DC1000V(4P)	DC250V(1P), DC500V(2P), DC750V(3P), DC1000V(4P)
Rated insulation voltage U_i (V)	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	6	6
Rated limit short-circuit breaking capacity I_{cu} (kA)	6	10
Rated operating short-circuit breaking capacity I_{cs} (kA)	6	7.5
Trip type	Thermal magnetic trip	Thermal magnetic trip
Instantaneous trip characteristics (I_n)	B: 6±20% C: 10±20% D: 14±20%	B: 6±20% C: 10±20% D: 14±20%
Pollution degree	3	3
Protection grade	IP20	IP20
Mechanical life	20,000 times	20,000 times
Electrical life	1500 times	1500 times
Ambinet temp.	-35°C~+70°C	-35°C~+70°C
Altitude of installation site	≤2000m	≤2000m
Max. wiring capacity (mm ²)	25	25
Max. limit torque (N.m)	2.5	2.5
Installation category	Class II, III	Class II, III
Installation method	TH35-7.5 standard rail	TH35-7.5 standard rail
Accessories	OF3: Aux. contact SD3: Alarm contact OF + OF3: Dual aux. integrated contact OF + 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 OF + 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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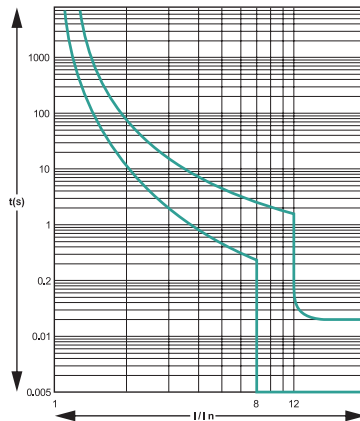
5 Characteristic Curves

5.1 TGB3-63DC and TGB3-63HDC Product Trip Curve

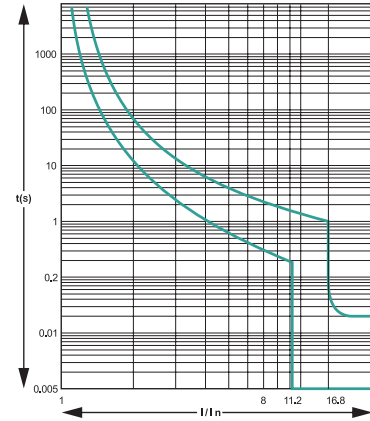
B type curve
Protection against loads with low short circuit current
(e.g. non-inductive or micro-inductive circuits)
Trip characteristics: Instantaneous trip range
($6I_n \pm 20\%$)



C type curve
Protection against conventional loads and distribution cables
Trip characteristics: Instantaneous trip range
($10I_n \pm 20\%$)



D type curve
Protection against impulse loads with high starting currents
(e.g. motors, transformers)
Trip characteristics: Instantaneous trip range
($14I_n \pm 20\%$)



6 Temperature Correction Factors Table

TGB3-63DC, TGB3-63HDC Temperature Correction Factors Table

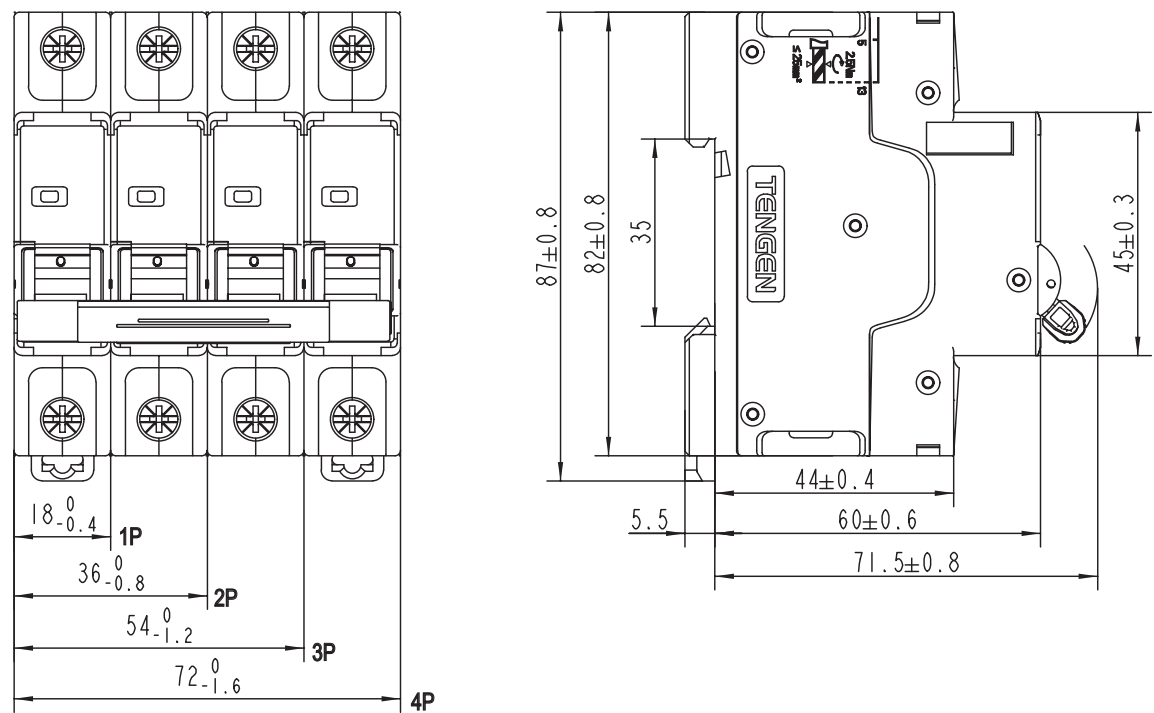
Rated current A	Correction current A											
	-35°C	-30°C	-25°C	-20°C	-15°C	-10°C	-5°C	0°C	5°C	10°C	15°C	20°C
1	1.39	1.37	1.34	1.32	1.29	1.27	1.24	1.22	1.17	1.14	1.12	1.09
2	2.7	2.65	2.6	2.56	2.51	2.47	2.43	2.38	2.34	2.28	2.23	2.18
3	4.03	3.97	3.91	3.85	3.79	3.72	3.66	3.59	3.51	3.42	3.35	3.27
4	5.34	5.27	5.19	5.11	5.03	4.94	4.86	4.77	4.68	4.56	4.46	4.36
5	7.94	7.77	7.6	7.43	7.26	7.09	6.91	6.72	6.53	6.3	6.08	5.85
6	9.51	9.31	9.11	8.91	8.7	8.49	8.28	8.06	7.83	7.56	7.29	7.02
10	12.9	12.75	12.6	12.5	12.3	12.1	11.9	11.7	11.5	11.2	11	10.8
16	20.8	20.5	20.2	19.9	19.6	19.3	19	18.7	18.4	17.92	17.6	17.28
20	26.1	25.7	25.3	24.9	24.6	24.2	23.8	23.4	23	22.4	22	21.6
25	32.7	32.2	31.7	31.2	30.8	30.3	29.8	29.3	28.8	28	27.5	27
32	41.6	41.1	40.5	39.9	39.3	38.7	38.1	37.4	36.8	35.84	35.2	34.56
40	51.2	50.6	49.9	49.2	48.5	47.8	47.1	46.3	45.6	44.8	43.8	42.8
50	64.2	63.3	62.4	61.5	60.6	59.7	58.8	57.9	57	56	54.8	53.5
63	80.2	79.2	78.2	77.2	76.1	75	73.9	72.8	70.3	69.3	68.4	67.4

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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	1.07	1.05	1.03	1	0.96	0.88	0.8	0.75	0.68	0.61
2	2.14	2.1	2.05	2	1.92	1.76	1.6	1.5	1.36	1.22
3	3.21	3.15	3.08	3	2.88	2.64	2.4	2.25	2.03	1.82
4	4.28	4.2	4.1	4	3.84	3.52	3.2	3	2.71	2.43
5	5.63	5.4	5.2	5	4.95	4.93	4.9	4.88	3.39	3.04
6	6.75	6.48	6.24	6	5.94	5.91	5.88	5.85	4.07	3.65
10	10.6	10.4	10.2	10	9.6	9.4	9.2	9	8.73	8.50
16	16.96	16.64	16.32	16	15.36	15.04	14.72	14.08	14	13.60
20	21.2	20.8	20.4	20	19.2	18.8	18.4	17.6	17.5	17.00
25	26.5	26	25.5	25	24	23.5	23	22	21.8	21.25
32	33.92	33.28	32.64	32	30.72	30.08	29.44	28.16	27.9	27.21
40	42	41.2	40.6	40	38.8	37.4	36	34.6	33.8	32.68
50	52.5	51.5	50.8	50	48.5	44.85	41.2	39.35	36	33.10
63	66.5	65.5	64.3	63	60.5	57.23	53.95	50.95	48.8	46.01

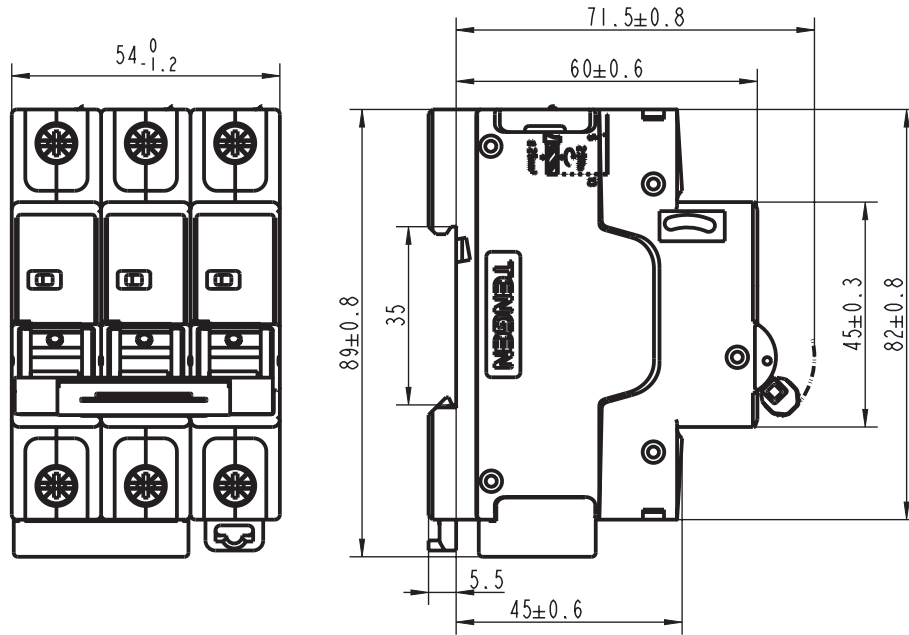
7 Outline and Installation Dimensions

7.1 TGB3-63DC and TGB3-63HDC outline and installation dimensions without short busbars

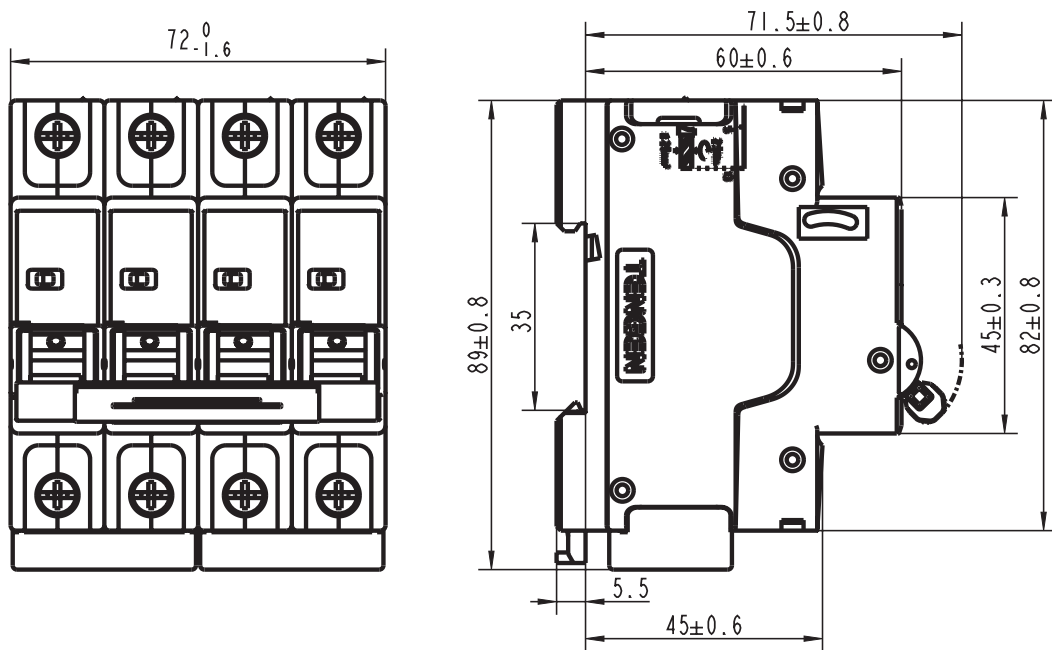


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7.2 TGB3-63DC and TGB3-63HDC outline and installation dimensions with short busbars



3P product



4P product