B1H 6~63 DC MCB Specificaions

1 Features&Benefits:

◇ Rated Operational Voltage: 250V(1p)，500V(2P)，600V(3P/4P)

◇ Rated Current: 6/10/16/20/25/32/40/50/63A

◇ Rated Impulse Withstand Voltage: 6kV

◇ Tripping Type: Thermal Magnetic

◇ Rated Ultimate Short-Circuit Breaking Capacity: 10 kA

◇ Rated Service Short-Circuit Breaking Capacity: 6 kA

◇ Overload and the short circuit protection function

◇ Non-polarity and Polarity both available

◇ Designed for PV, energy storage and other DC applications

2 Approvals/Standards:

◇ UL / UL1077

◇ CE / IEC/EN 60947-2

◇ REACH/RoHS

Product Model

		B 1	H	C	63	D	3 -	AX

B1 :1 Series Circuit breaker

H : High voltage

Tripping Curve : B: Type B C: Type C

Rated Current : 6:6A 10:10A 16:16A 20:20A 25:25A 32: 32A 40:40A 50:50A 63:63A

D : Direct current, non-polarized

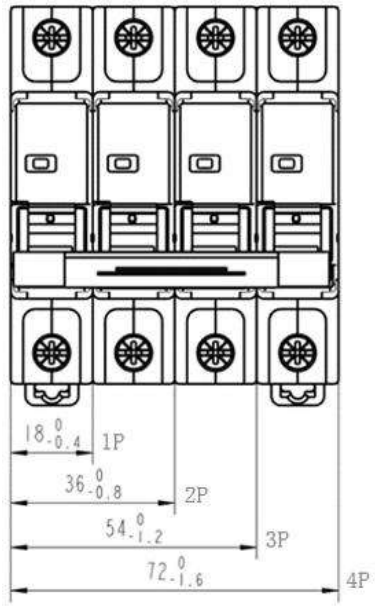
Pole : 1: 1Pole 2: 2Poles 3: 3Poles 4 : 4 Poles

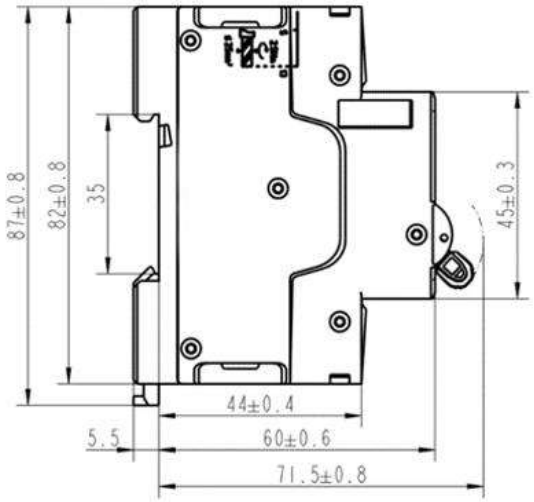
Attachment

4 Characteristic Parameter

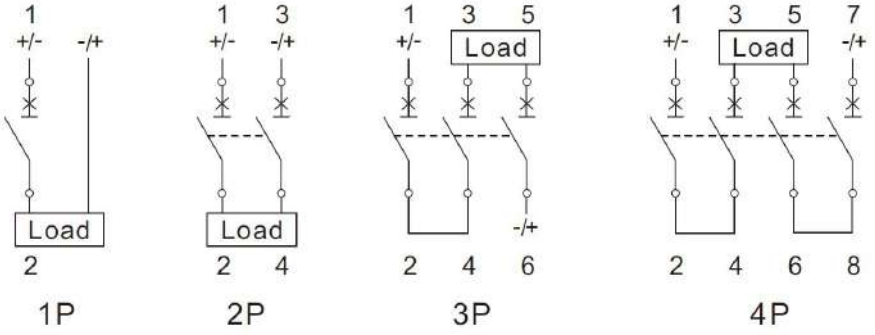
Pole	1P	2P	3P	4P
Rated Oporational Voltage	250VDC	500 VDC	600 VDC	600 VDC
Rated Current	6/10/16/20/25/32/40/50/63A			
Rated Insulation Voltage	1000V			
Rated Impulse Withstand Voltage	6kV			
Tripping Characteristics	B(In=6In±20%)/ C（10In±20%）			
TrippingType	Thermal Magnetic			
Rated Utimate Short-Circuit Breaking Capacity	6kA			
Rated Service Short-Circuit Breaking Capacity	6kA			
Electrical Life	6000 Cycles			
Mechanical Life	8500 Cycles			
Protection Degree	IP20			
Overvoltage Category	III			
Pollution Degree	3			
Resistance to Humidity and Heat	Class 2			
Reference temperature	+40℃			
Ambient Temperature	-5°C~+40°C			
Storag Temperature	-25°C~+70 °C			
Weight	0.12kg/ Pole			
Terminal Capacity	1~25mm^2 ,The line depth is 13 mm.			
Fastening Torque of Terminal	2.0~2.5N·m,M5 slotted screw			

5 Outline dimensional (mm)

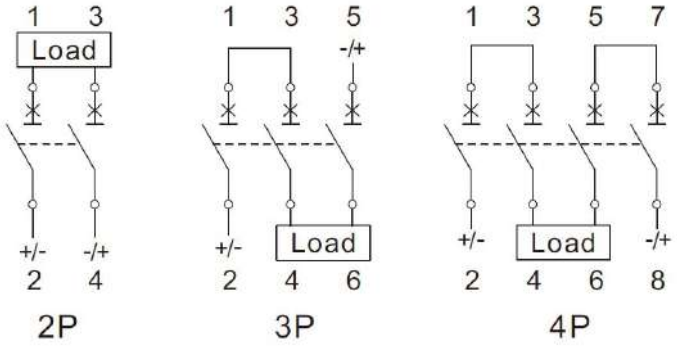




6 Wiring diagram

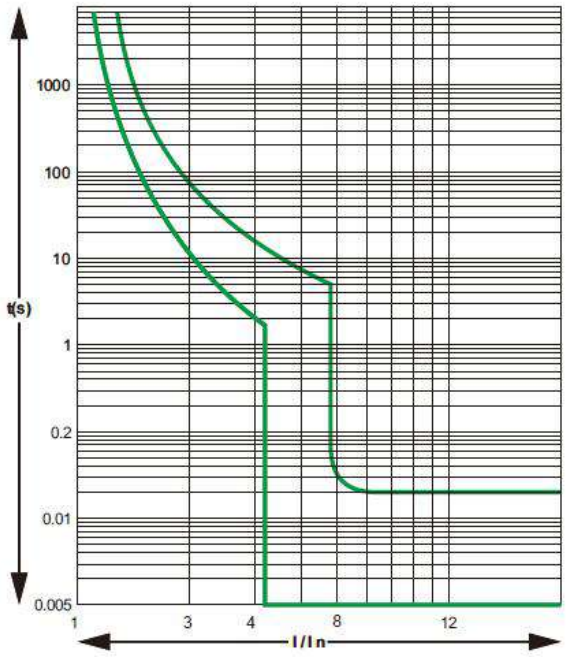


Upward connection diagram

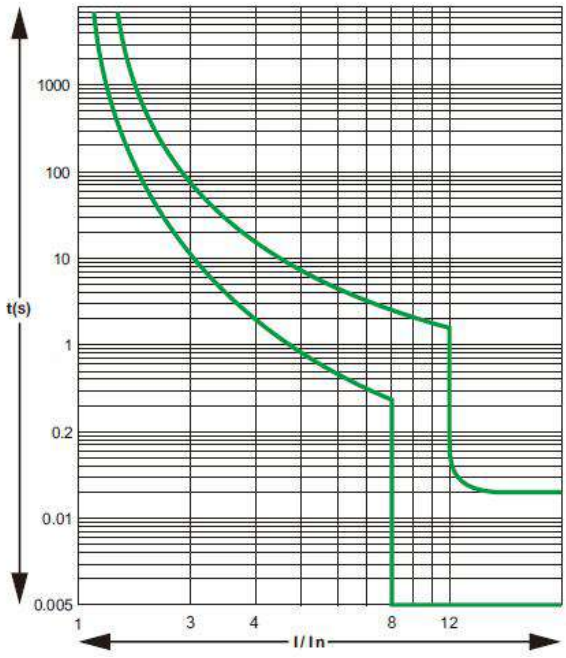


Bottom inlet wiring diagram

7 Tripping Curve



Type B (6In ± 20%)



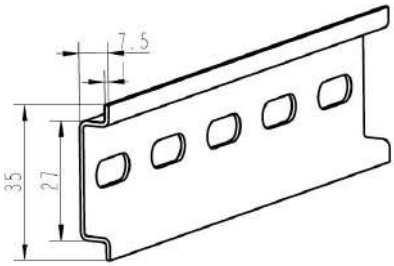
Type C (10 In ± 20%)

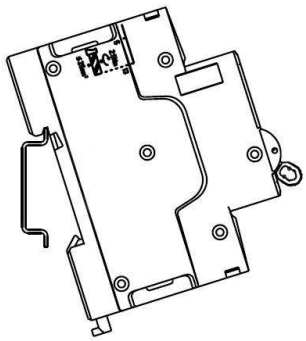
8 Installation and Maintenance

8.1 Before installation, it is necessary to check whether the basic parameters of the nameplate and labels meet the working requirements; Before using the product, the user should use an ohmmeter to check the insulation resistance between the contacts (except for single poles)
8.2 Between the contacts and the casing, between the contacts and the mounting rail, and between the incoming and outgoing terminals. The insulation resistance should be no less than 5MΩ;
8.3 After each operation of closing and opening the circuit breaker, check whether there is any jamming phenomenon in the operating mechanism of the circuit breaker and whether the mechanism operates reliably.

9 Installation method

9.1 Install using standard guide rails (TH35-7.5). The installation site should be free from significant shock and vibration.
9.2 The circuit breaker should generally be installed vertically. The handle pointing upwards is the position for connecting the power supply.





10 Wire cross-sectional area size The cross-sectional area of the connecting conductor should be compatible with the rated current of the circuit breaker.

Rated current A	6	10	16、20	25	32	40、50	63
Wire cross-sectional area mm²	1	1.5	2.5	4	6	10	16

11 Altitude correction factor

Altitude H(m)	Rated current	Maximum operating voltage	Rated power frequency withstand voltage	Rated impact withstand voltage	Rated short-circuit breaking capacity
H≤2000	In	Ue	1.0	1.0	1.0
2000＜H≤3000	0.97In	Ue	0.89	0.89	0.83
3000＜H≤4000	0.94In	Ue	0.80	0.80	0.71
4000＜H≤5000	0.90In	Ue	0.73	0.73	0.63

12 Parallel Capacity Reduction Coefficient Table

Number of circuit breakers arranged side by side	1	2 ~ 3	4 ~ 5	6 ~ 9	10
Reduction factor	1	0.9	0.8	0.7	0.6

13 The reference temperature for the product test is +40 ℃. For other temperatures, the temperature correction coefficients can be found in the table.

Rated current	Adjust the current value A																				
A	-35℃	-30℃	-25℃	-20℃	-15℃	-10℃	-5℃	0℃	5℃	10℃	15℃	20℃	25℃	30℃	35℃	40℃	45℃	50℃	55℃	60℃	65℃	70℃
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	6.75	6.48	6.24	6	5.94	5.91	5.88	5.85	4.07	3.65
10	12.9	12.75	12.6	12.5	12.3	12.1	11.9	11.7	11.5	11.2	11	10.8	10.6	10.4	10.2	10	9.6	9.4	9.2	9	8.73	8.50
16	20.8	20.5	20.2	19.9	19.6	19.3	19	18.7	18.4	17.92	17.6	17.28	16.96	16.64	16.32	16	15.36	15.04	14.72	14.08	14	13.60
20	26.1	25.7	25.3	24.9	24.6	24.2	23.8	23.4	23	22.4	22	21.6	21.2	20.8	20.4	20	19.2	18.8	18.4	17.6	17.5	17.00
25	32.7	32.2	31.7	31.2	30.8	30.3	29.8	29.3	28.8	28	27.5	27	26.5	26	25.5	25	24	23.5	23	22	21.8	21.25
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	33.92	33.28	32.64	32	30.72	30.08	29.44	28.16	27.9	27.21
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	42	41.2	40.6	40	38.8	37.4	36	34.6	33.8	32.68
50	64.2	63.3	62.4	61.5	60.6	59.7	58.8	57.9	57	56	54.8	53.5	52.5	51.5	50.8	50	48.5	44.85	41.2	39.35	36	33.10
63	80.2	79.2	78.2	77.2	76.1	75	73.9	72.8	70.3	69.3	68.4	67.4	66.5	65.5	64.3	63	60.5	57.23	53.95	50.95	48.8	46.01

15 Attachment installation

OF3 auxiliary contact : Loaded on the left side of the circuit breaker, indicating the on-off status of the circuit breaker;

SD3 alarm contact : Loaded on the left side of the circuit breaker, indicating the fault trip status of the circuit breaker;

OF + SD3 combined auxiliary contact : Loaded on the left side of the circuit breaker, indicating the on-off and fault trip status of the circuit breaker;

OF + OF3 dual auxiliary combined contact : Loaded on the left side of the circuit breaker, indicating the on-off status of the circuit breaker;

MX3 trip relay : Loaded on the left side of the circuit breaker, remotely controlling the trip of the circuit breaker;

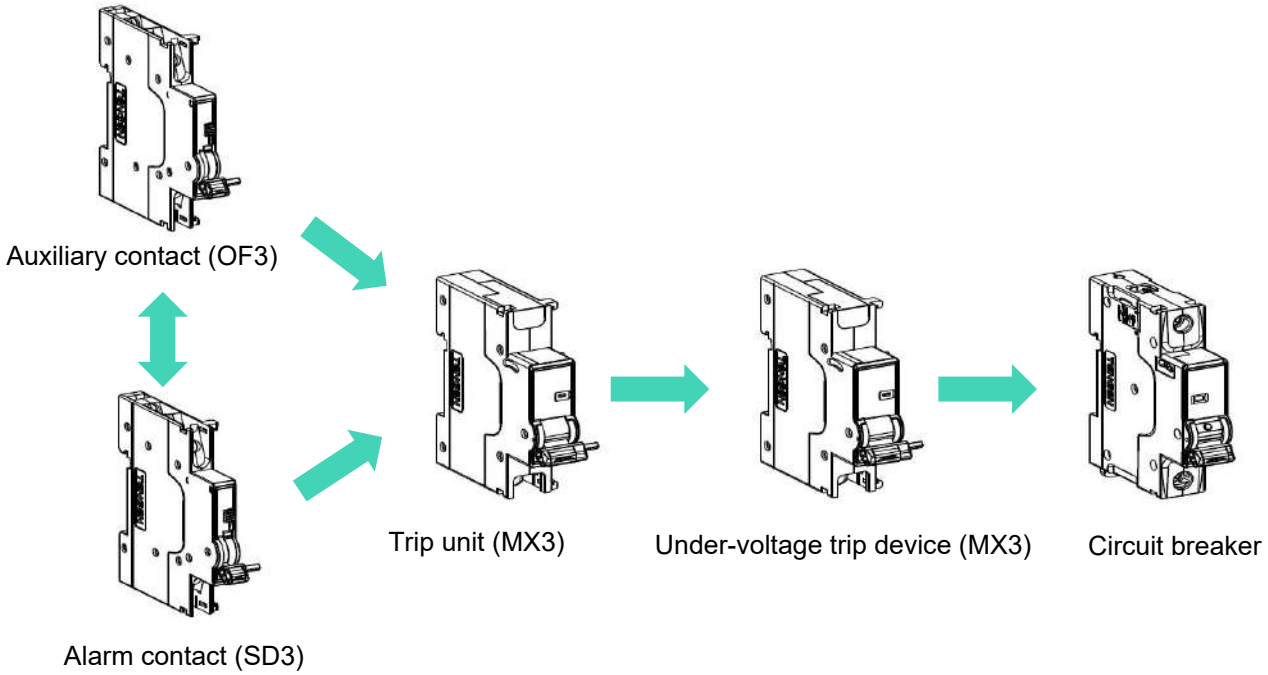
MV + MN3 overvoltage and undervoltage trip relay : Loaded on the left side of the circuit breaker, providing overvoltage and undervoltage protection in the line.

MX + OF3 (active or passive) release + auxiliary trip device : Installed on the left side of the circuit breaker. When a signal is received, it triggers the circuit breaker to trip, and can also indicate the closed and open status of the circuit breaker;

MV3 overvoltage trip device : Installed on the left side of the circuit breaker. When assembled with the circuit breaker, it realizes overvoltage protection;

MN3 undervoltage trip device : Installed on the left side of the circuit breaker. When assembled with the circuit breaker, it realizes undervoltage protection;

MNs3 loss of voltage trip device : Installed on the left side of the circuit breaker. When assembled with the circuit breaker, it realizes loss of voltage protection.



15 Attachment selection

15.1 The attachments are sold separately and come with no tool installation required;

15.2 The total width of the assembled attachments is within 54mm, and the sequence and quantity from left to right; OF3, SD3, OF+SD3, OF+OF3 (up to 3 pieces) + MX3, MX+OF3, MV3, MN3, MNs3, MV+MN (up to 2 pieces) + MCB;

15.3 The specific technical parameters, installation dimensions, wiring diagrams and other related requirements of each attachment can be found in the TGB3 series attachment product specification sheet.

16 Packaging and Storage

Maximum packaging quantity (1P product: 12 units per box, 2P product: 6 units per box, 3P product: 4 units per box, 4P product: 3 units per box),For packaged products in boxes, they should be stored in a warehouse with good air circulation and where there is no direct short circuit between the positive and negative electrodes or contact between the negative electrode and the ground. The humidity should not exceed 80%, the temperature should not be higher than +80℃ or lower than -40℃, and there should be no acidic, alkaline or other corrosive gases in the air.

17 Warranty period

17.1 Under normal storage and transportation conditions and when the product packaging or the product itself is in good condition, the warranty period for the product is 36 months from the date of production.

17.2 The following situations are not covered by the warranty:

Damage caused by improper use, storage, or maintenance by the user;

Damage caused by non-company-designated institutions or personnel, or by self-disassembly and repair;

Damage beyond the warranty period;

Damage caused by force majeure factors.

18 Attention

18.1 This product must be installed, maintained and serviced by personnel with professional qualifications;

18.2 All the characteristics of the product have been set at the factory and cannot be disassembled or adjusted by oneself during use;

18.3 If the product is damaged or makes abnormal sounds when unpacked, it should be immediately stopped from use and contact the supplier;

18.4 To prevent inter-phase short circuits, insulation treatment should be carried out on the exposed wires or copper busbars at the connection terminals;

18.5 The circuit breaker cannot provide protection against personal electric shock or equipment leakage.