

**1. General**

**1.1 Range of Appliance**

SAFE series miniature circuit breaker (hereinafter circuit breaker) in high breaking capacity with overload short circuit protection and also Electrical isolation ability, can be used under AC 50/60Hz rated voltage 230/400V, rated current up to 100A circuit, also as line not frequent on-off operation, mainly used for industrial, commercial, high-rise and civilian residential places. In compliance with IEC/EN60898-1.

**1.2 Normal operational circumstance.**

**1.2.1 Ambient temperature:**

The ambient air temperature limit does not surpass +40 °C, the lower limit is not lower than -5 °C, and 24h average temperature value does not exceed +35 °C

**1.2.2 Attitude:**

The installation site altitude does not exceed 2000m.

**1.2.3 Humidity:**

The relative atmospheric humidity in the surrounding air temperature is +40 °C does not exceed 50%, at the lower temperature can be allowed to have a higher relative humidity of 90%, for example at +20 °C occasionally generated due to temperature change condensation should take appropriate measures.

**1.2.4 Installation Category II, and III type.**

**1.2.5 Pollution degree: 2**

**1.2.6 Mounting:** On DIN rail FN 60715(35mm) by means of fast clip device.

**1.2.7 Install condition:** This product should be installed in the place without explosion, insulation frontal gas and dusty medium to corrode metal box, no rain hit, no obvious shaking impact vibration.

**1.2.8 Connection mode:** use screw to compress connection.

**2. Kinds**

**2.1** Classified by rated working current: 2A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A, 100A.

**2.2** Classified by the instantaneous tripping characteristic: B, C

**2.3** Classified by number of pole: Single pole, Three pole.

**3. General**

The main contact of the circuit breaker is rely on manual operation to close, when the main contacts are closed, trip-free mechanism will lock the main contact in closing position, the coil of magnetic release and thermoelement of thermal tripping device is in series with the main circuit. When the circuit is in short circuit or overload condition, under the pulling of armature, the free tripping mechanism will act and disconnect the main circuit. When there is overload, the temperature of thermoelement rises, the bimetal is bending, promoting free trip machine to brake, cut off the circuit to protect.

**4. Technical data**

**4.1 Technical specifications and parameters.**

**4.1.1** Rated working voltage: AC 50/60Hz, 230/400V(1P), 400V(3P).

**4.1.2** Rated working current: 2A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A.

**4.1.3** Rated breaking capacity: 2-100A 4.5KA

**4.1.4** Product life: The S series is more than 4000 times.

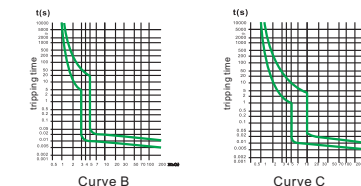
**4.1.5** Dielectric Withstand Voltage Test: Applied not less than 2000V voltage, testing qualified rate of 100.

**4.2 Product over current trip characteristics:**

No	Rated current A	Initial state	Test current	Rating limit time	Tripping Result	Ambient temperature	Comment
a	All data	cold	1.13In	t ≤ 1h	NO		
b	All data	thermal	1.45In	t < 1h	YES	30 ± 2 °C	After test a, reach the rated current in 5s
c	1 ≤ In ≤ 32 32 < In ≤ 63A	cold	2.55In	ts < 60S ts < 120S	YES	30 ± 2 °C	
d	All data	cold	3In(B) 5In(C) 10In(D)	t ≥ 0.1s	NO	30 ± 2 °C	Turn on the power after closing auxiliary switch
e	All data	cold	5In(B) 10In(C) 20In(D)	t < 0.1s	YES	30 ± 2 °C	Turn on the power after closing auxiliary switch
f	All data	cold	1.13In	t ≥ 1h	NO	-5 ± 2 °C	
g	All data	thermal	1.45In	t < 1h	YES	-5 ± 2 °C	After test f, each the rated current in 5s
h	All data	thermal	In	t ≥ 1h	NO	40 ± 2 °C	

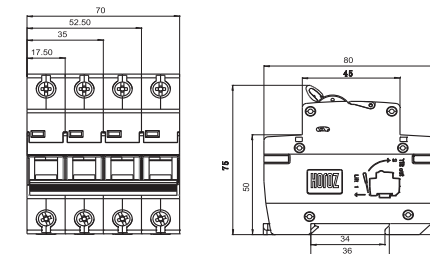
cold state is based on the initial temperature, no load before test.

**4.3 The instantaneous tripping characteristic curve**



**5. Physical size and method of installation**

**5.1 Size**

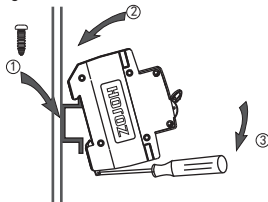


**5.2 Installation method.**

**5.2.1 Fixed installation**

**5.2.2** Fix the product installation mouth into the top of the rail.

**5.2.3** Fix the installation mouth activities edge entirely in rail and get stuck



**6. Attention in installation**

**6.1** This series of circuit breaker is completely free maintenance terminal class electric protection equipment, can be applied to nonprofessional operation use; But in order to better play the products to high performance, reliable condition to protect the user's life and property safety, so its selection, installation need professional people in power.

**6.2 Open-package inspection**

**6.2.1** Ensure the products is suitable for the usage.

**6.2.2** The product operating handle make, breaker a few times, check the circuit breaker operating mechanism for card hysteresis, agency action is reliable.

**6.2.3** Use 500 v tramegger to check breaker pole and pole, when off, the insulation resistance of incoming and outgoing line between should be not less than 2 mge; the insulation resistance of Pole and shell, pole and installation guide between should be not less than 5 mge.

**6.2.4** Check if the above is not in conformity with the provisions use requirement.

**6.3** The product should be installed vertically, any direction is no more than 10%, and installed connection must according to product nameplate mark of the circuit diagram.

**6.4** The rated current of this series circuit breaker is in the reference temperature for 30+5°C when setting, if more circuit breaker are side by side in sealed the cabinet, the actual working current should be appropriately reduced for use.

In	In < 6	6 < In	13 < In	20 < In	25 < In	32 < In	50 < In	63 < In	80 < In	100 < In
A	<13	<20	<25	<32	<50	<63	<80	<100	<125	
S	1	1.5	2.5	4	6	10	16	25	35	50

**6.6** When products in use, its connection conductor section should not less than the provisions of the table below:

**7. Order instruction**

**7.1** Customer should pay attention to the following:

- A) The name of the products
- B) Pole number
- C) Tripping characteristics and rated current
- D) Quantity

**7.2 Example**

1000 pieces of 3P 4.5KA 3 poles miniature circuit breaker, C type, rated current 32A.

Should be : **114-002-3032** 1000pieces



**EN**  
**MINIATURE CIRCUIT BREAKER**  
**INSTRUCTION**

**Family Name: SAFE**  
**Model:** 114-001-1006, 114-001-1010, 114-001-1016, 114-001-1020, 114-001-1025, 114-001-1032, 114-001-1400, 114-002-1002, 114-002-1004, 014-002-1050, 114-002-1063, 114-002-3006, 114-002-3010, 114-002-3016, 114-002-3020, 114-002-3025, 114-002-3032, 114-002-3040, 114-002-3050, 114-002-3063, 114-002-3080, 114-002-3100