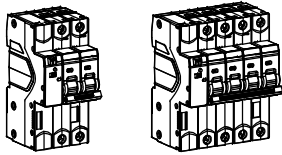


HYB2-80WL IoT smart circuit breaker

Use the Instruction Book



Safety Alert:

- When the product is installed, it should not be operated with electricity to prevent electric shock;
- Do not use the method of short circuit of the live wire to the ground or the collision and short circuit of the neutral line and the live wire to test the performance of the product, so as not to affect personal safety;
- When installing, the wiring screws should be tightened so that the wire is not loose, and the wire section strictly refers to the specified requirements;
- It is strictly forbidden to operate the circuit breaker with wet hands, otherwise electric shock accidents may occur;
- The protection characteristics of the circuit breaker are set by the manufacturer, and it is not allowed to disassemble or adjust the circuit breaker at will;

1 Scope of Application

HYB2-80WL Internet of Things Intelligent Leakage Circuit Breaker (hereinafter referred to as the circuit breaker) is suitable for lines with rated working voltage to 230V/400V, AC 50Hz and rated current to 80A. When the person is electrocuted or the leakage current of the power grid exceeds the specified value, the circuit breaker can quickly cut off the faulty power supply in a very short time.

Through the Internet of Things communication technology (such as WiFi, 4G, RS-485) to achieve remote control of circuit breakers in the line automatic closing power supply, automatic switching off power. The integrated collection of intelligent power system can read circuit breaker voltage, current, leakage current, product internal temperature, power consumption, closing state, opening state, leakage fault alarm and other data; Through data analysis and statistical operations, remote control and energy-saving power management are carried out for each application site, and intelligent smart power safety management is realized.

At present, it is widely used in family, dormitory, municipal engineering, street lamp, farm, rental house remote control line.

This product conforms to GB/T 16917.1, IEC61009-1 standards.

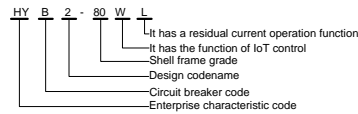
2 Conditions of Use

- 2.1 Ambient air temperature
Ambient air temperature -25 school~+65 school; Extreme working temperature: -40 schools~+70 schools.
- 2.2 Altitude
The altitude of the installation site is generally not more than 2000m.
- 2.3 Installation Form
The standard guide rail is used, and the guide rail should meet the requirements of A.1.1 TH35-7.5 steel installation rail of GB/T19334.
- 2.4 Installation Conditions
The circuit breaker should generally be installed vertically, the tilt angle should not exceed 50°, the handle should be upwards for the power supply position, and the installation place should be free of significant shock and vibration.

2.5 Wiring Method

Press the wiring tightly with screws.

3 Model and meaning of the product



4 Main specifications and technical parameters

- 4.1 Rated voltage un: 230V AC (1P+N, 2P), 400V AC (3P+N, 4P) ;
- 4.2 Rated current In: 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A;
- 4.3 Rated residual current (Δn): 30mA, 50mA, 100mA, 300mA ;
- 4.4 Rated residual inactive current : 0.5I_nΔn ;
- 4.5 Residual Current Protection Type: AC Type ;
- 4.6 Residual Current Protection Type: AC Type ;
- 4.7 Instantaneous tripping form: B, C, D type (can be produced according to user requirements) ;
- 4.8 Rated operating short-circuit breaking capacity: I_{cn}=I_{cs}=6kA ;
- 4.9 Rated residual switching and breaking capacity : 2kA ;
- 4.10 Residual current action breaking time, in seconds : 0.1 ;
- 4.11 Circuit breaker overcurrent protection characteristics (see Table 1) ;
- 4.12 Remote control automatic closing time (seconds): t ≤ 3s;

4.13 Remote control automatic opening time (seconds): t ≤ s:

- 4.14 Overvoltage: overvoltage trip value 270V-280V, recovery voltage 245V-255V ;
- 4.15 Undervoltage: Undervoltage tripping value is 160V-170V, recovery voltage is 180V-190V ;
- 4.16 Mechanical and electrical life (see Table 2);
- 4.17 Tightening torque: 2.5Nm;
- 4.18 Dimensions and installation dimensions are shown in Figure 1;
- 4.19 Pollution level: 2;
- 4.20 Protection level: IP20 level;
- 4.21 Installation Category: 3 Categories;

Table 1

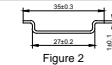
| Serial | Test current (A) | Starting state | To trip or not to take off Deduction of time limits | Expected results | Experimental ring ambient temperature | Remarks |
|--------|------------------|--------------------------------------|--|------------------|---------------------------------------|--|
| 1 | 1.13In | Cold | t ₂ -t ₁ In≤63A t ₂ -t ₁ In>63A | No tripping | 30 ~ -35℃ | |
| 2 | 1.45In | Immediately after the preceding test | t ₂ -t ₁ In≤63A t ₂ -t ₁ In>63A | tripping | 30 ~ -35℃ | The current is within 5% increase steadily |
| 3 | 2.55In | Cold | 1s<t<0.0s t<0.1s | tripping | 30 ~ -35℃ | |
| 4 | B 3m 5m | Cold | t<0.1s | No tripping | 30 ~ -35℃ | |
| 5 | C 5m 10m | Cold | t<0.1s | No tripping | 30 ~ -35℃ | Assisted by closure The switch is turned on with current |
| 6 | D 10m 14m | Cold | t<0.1s | tripping | 30 ~ -35℃ | |

Table 2

| Pilot project | frequency | Factor | Frequency of operation |
|-----------------|-----------|----------------|--|
| Electrical life | 10000 | cos φ=0.85~0.9 | In ≤ 32A, 240 times per hour In > 32A, 120 times per hour |
| Mechanical life | 30000 | | |

Table 3

| Current rating In A | 6 | 10 | 16 | 20 | 25 | 32 | 40 | 50 | 63 | 80 |
|---------------------------------|---|-----|-----|----|----|----|----|----|----|----|
| Tripping area S mm ² | 1 | 1.5 | 2.5 | 4 | 6 | 10 | 16 | 25 | | |



For a description of the function and a comparison with conventional circuit breakers, see table 4

Table 4

| Description of the function | HY circuit breaker | Conventional circuit breaker | Interpretation |
|--|--------------------|------------------------------|---|
| Overload protection | Yes | Yes | When the rated current is exceeded and reaches a predetermined value, the circuit breaker is disconnected for a predetermined time |
| Short-circuit protection | Yes | Yes | When the short-circuit current exceeds a predetermined value, the circuit breaker is disconnected for a predetermined time |
| Leakage protection | Yes | Yes | When the leakage current exceeds a predetermined value, the circuit breaker is disconnected for a predetermined time |
| Over-voltage and over-current protection | Yes | Not | When the rated voltage exceeds or falls below a predetermined value, the circuit breaker is disconnected for a predetermined time |
| Remote control of opening and closing | Yes | Not | The long-distance control circuit breaker automatically opens and closes |
| Over-temperature protection | Yes | Not | The internal temperature of the circuit breaker is monitored from a distance, and when the predetermined value is exceeded, the circuit breaker is disconnected |
| Load limiting | Yes | Not | The real-time load is monitored from a distance, and when the predetermined value is exceeded, the circuit breaker is disconnected |
| Voltage monitoring | Yes | Not | Monitor the operating voltage status of the circuit breaker from a distance |
| Current monitoring | Yes | Not | Monitor the operating current status of the circuit breaker from a distance |
| Energy metering | Yes | Not | Monitor the electricity consumption in the line from a distance |
| Overhaul the safety switch | Yes | Not | When the maintenance safety switch is opened, it can prohibit remote control circuit breaker opening and closing |
| Auto-open and close button | Yes | Not | At the push of a button, the circuit breaker will automatically open or close |
| Leakage current monitoring | Yes | Not | Monitor the leakage current status of the circuit breaker from a distance |
| Leakage function self-test | Yes | Not | The remote control circuit breaker realizes the same function as the test self-test |
| Remote control of opening and closing | Yes | Not | The remote control circuit breaker opens and closes at a fixed time to achieve energy saving and consumption reduction |
| Phase Loss Protection | Yes | Not | Three-phase phase loss protection, three-phase unbalance alarm |
| Data acquisition and storage | Yes | Not | Use communication technology to open and close the circuit breaker state, voltage and electricity Data such as flow, electricity consumption, power, and temperature are collected, analyzed, and stored to determine abnormalities |
| Means of communication | Yes | Not | WiFi, 4G, RS-485 |

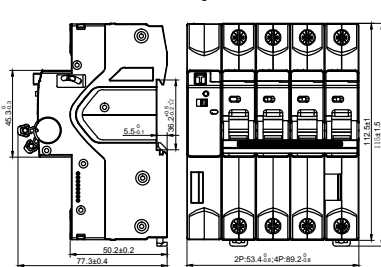
The indicator shows the status table 5

Table 5

| | |
|----------------|--------------------|
| Open status | Green light |
| Closing status | Red light |
| Fault status | Flashing red light |
| Pairing status | Blue light flashes |

8 Shape and installation dimensions (see figure 1)

Figure 1



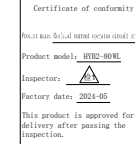
9 Transportation and storage conditions, use and maintenance

- 9.1 The circuit breaker shall not be exposed to rain during transportation, storage and use. The product is placed in an environment with air circulation, monthly average humidity not more than 90% (in 20 school hours and 5 school hours), air temperature not higher than +40 school and not less than -25 school hours. In the event of a difference from the conditions set out in 2.1, a special agreement shall be entered into between the manufacturer and the user.
- 9.2 The circuit breaker should be checked regularly during operation, the inspection cycle depends on the working conditions, the power supply should be cut off during the inspection, and the main items of the inspection include:
 - Remove dust and dirt, especially pay attention to removing the dirt between the poles of the incoming and outgoing lines, so as to prevent short circuits between the poles.
 - Check whether the fasteners and connecting wires are loose, whether the parts are damaged, and operate several times without load, and the circuit breaker should act flexibly and reliably, without stickiness.

10 Ordering Instructions

- 10.1 The following points must be indicated at the time of order:
 - Product model and name: such as HYB2-80 miniature circuit breaker;
 - Instantaneous trip type and rated current: such as C50 (C-type rated current is 63A); 3. The number of poles of the circuit breaker: such as 2P;
 - Built-in power supply;
 - The power supply is external, and the power supply external product should also be equipped with a power module (see Image 5); 6. Order quantity.
- 10.2 Examples of Orders: HYB2-80 miniature circuit breaker C50 2P 50 sets

Certificate of conformity



Product Warranty Terms

- Dear users,
Hello!
Thank you for choosing our products, thank you!
In order to facilitate us to provide you with more satisfactory services, but also to better protect your rights and interests. Please read the following terms carefully before installing and using them.
Anyone who purchases the company's products within the specified warranty period can enjoy the free warranty service provided by the company if the fault is caused by the quality of the product itself. During the warranty period, if the following conditions exist, the company will take root. Appropriate fees are charged according to the damage.
1. Man-made product damage
 2. Unauthorized maintenance or alteration of the product
 3. Any failure or defect caused by improper use environment or conditions;
 4. Improper installation, wrong use, force majeure events or other external causes caused by failures

4.22 Wiring
Before installation, check whether the technical parameters of the circuit breaker meet the needs of use, and the wire of the power supply end should be connected to the power side terminal above the circuit breaker, and the torque of the wiring screw during installation is 2.5Nm, the cross-sectional area of the connecting wire can be specified in Table 3 when used.

5 Features

- 5.1 High rated breaking capacity, up to 10kA.
- 5.2 The operating mechanism of the circuit breaker is the rapid closure of the contact of the energy storage free trip mechanism, which overcomes the adverse effects caused by the speed of the manual operation handle, and greatly improves the service life of the product, and the contact can only stay in the closed or disconnected position during normal operation.
- 5.3 Combined terminal block with finger touch protection, higher safety performance.
- 5.4 The shell and parts are made of high-flame retardant, high-temperature and impact-resistant plastics imported from abroad.

6 How it works

Push the operating handle of circuit breaker, dynamic and static contact closes, make the line on, when the protected line occurs overload, the bimetallic element is heated and bends, make the lock and the jump buckle unlock by the connecting rod, then the dynamic and static contacts are separated, cut off the line; when the short circuit of the protected line occurs, the moving iron heart of the instantaneous trip hits the lock, the lock and the trip buckle are unlocked; make the dynamic and static contacts separate, cut off the line; when the leakage occurs in the protected line, the leakage coil moving iron core hits the lock, the lock and the trip buckle are unlocked, the dynamic and static contacts are separated, and the line is cut off. When circuit breaker automatic closing, the motor in the electric drive module rotates to drive the gear, and the gear wheel drives the handle to make the circuit breaker close; when the circuit breaker is automatically opening, the motor in the electric drive module rotates and drives the gear, and the gear drives the lock to make the circuit breaker trip. Functions such as overload, short circuit, leakage protection and remote opening and closing of electrical circuits and equipment are completed respectively by the above-mentioned modes.

7 Installation and Adjustment

- 7.1 The following matters should be paid attention to before the circuit breaker is installed:
 - Check the circuit breaker to confirm that it is intact, and manually operate a several times before powering on, and the mechanism is flexible.
 - Check whether the logo content of the circuit breaker is consistent with the working conditions used.
 - The rated current of the selected circuit breaker should match the actual use of the line.
- 7.2 The product is installed with TH35-7.5 guide rail, see Figure 2.
- 7.3 Installation Method
When installing, the circuit breaker is snapped into the mounting rail, and the mounting card of the circuit breaker is pushed upwards to make the circuit breaker fixed on the mounting rail. Push the handle up toward "ON" to close the circuit breaker, and pull the handle down toward "O, OFF" to disconnect. Before powering on, the no-load operation should be carried out several times to confirm that the circuit breaker is flexible and reliable.