HONGFA

SMART
MINIATURE
CIRCUIT BREAKER

SMART POWER UTILIZATION, SAFER FOR USERS

ELECTRIC INTELLIGENCE

With the rapid increase of electrical load types, the probability of human body getting electric shock in traditional power distribution system also increases, which poses a major threat to the safety of people's lives and property. However, "Pay more attention to the fire fighting than prevention" in traditional fire fighting system makes electrical safety difficult. As rapid development of power micro grid technology increases the cost of electricity management , energy efficiency management is gradually becoming mainstream focus.

Increasing maturity of Internet of Things technology further promotes Power Internet of Things development which has become the basis of Internet of Everything. In order to effectively cope with the large environment of smart electrical system, Hongfa has developed a series of intelligent miniature circuit breaker products to ensure the safety of people's livelihood.

Hongfa intelligent miniature circuit breaker came into being

Electrical safety
● Protection against electric shock
● Fire fighting: " Pay more attention to the fire fighting than prevention "
● Various electrical loads

Power management
● High management cost
● Development of power micro grid technology
● Improving energy efficiency awareness

Power interconnection
● Increasingly mature Internet of things technology
● Increase of Internet of things facility nodes
● Power Internet of things is the basis of Internet of Everything

PRODUCT ADVANTAGES

Intelligence
● Various parameters such as temperature, energy consumption, current, voltage, power, leakage current, circuit breaker status and other data are monitored in real-time and any abnormality is reported to the person in charge in real-time.
● Can be remote and timing controlled as time switch, power limiting device and energy consumption limiting device.
● Device overcurrent protection can be customized.

Safety
● When the power data is abnormal (such as: under-voltage, over-voltage, overload, leakage, etc.), the system will send pre-alarm warning, alarm warning and will cut off power automatically in order to prevent the risk of electrical fire.
● It has the functions of timing self-checking, remote self-checking and local self-checking. Can automatically self-check the leakage current monthly, send detection information and link with mobile phone App, so that the hidden hazards will disappear.

Open
● Supports a variety of mainstream communication protocols.
● Supports extensible ports to meet the requirements of various users.
● Supports IOS, Android and computer control system.

Convenient
● Modular products to simplify installation.
● Can be directly connected to the system without code matching.
● Various wiring modes to meet different requirements.

FEATURES

Multiple protection
Overload, overvoltage, under voltage, leakage, over power, over temperature and other types of protection can be set, refined protection; leakage protection adopts dual chip protection, which can still provide protection even after the control module failure; edge computing strategy, local processing the circuit's important protection.

High reliability
Under the high requirements of Eurocode EMC, the wires and accessories used in all parts are certified materials which ensure safety, reliability and stability of the products.

Compact appearance
Compact structure, small and exquisite shape, the upper and lower side are symmetrical and beautiful.

Power Module Z3PW

- Input voltage (V) : AC120-260
- Output voltage (V) : DC12±1
- Power (W) : 30
- Input frequency (Hz) : 60

Gateway module Z3GW

- Input mode: RS-485
- Input protocol: Modbus-RTU
- Output mode: RJ45, WiFi,4G
- Output protocol: Modbus-TCP,MQTT
- Input power (V): DC12

NEW Smart MCCB UEM5Z3-250

- Number of poles: 3P,4P
- Ue (V): AC400
- Ir(A): 100A(40A~100A adjustable),250A(100A~250A adjustable)
- Icu(kA)：35
- Ics(kA)：25
- Communication protocol: RS485(Modbus-RTU)
- Alarm function: overload long time delay , short circuit short time delay,terminal temperature, overvoltage, undervoltage,Phase loss alarm
- Protection function: neutral line,overload long time delay , short circuit short time delay,short circuit, temperature, overvoltage, undervoltage,Phase loss
- Information collection: current, voltage, active power, reactive power, apparent power, electricity quantity, frequency, power factor, terminal temperature, etc
- Fault information: 10 records

NEW Smart MCB UEZ3-40 (1PN)

- Number of poles: 1P,1PN
- Ue (V): AC230
- In (A): 6, 10, 16, 20, 25, 32, 40
- Icn=Ics=4.5kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 6000 cycles
- Communication protocol: RS485(Modbus-RTU)
- Alarm function: overload, overvoltage, undervoltage,temperature, overpower,Leakage
- Protection function: Short circuit , overload setting current, overvoltage, undervoltage ,overtemperature overpower
- Information collection: current, voltage, power ,electricity quantity,Leakage,temperature, frequency, Electrical endurance etc
- Fault information: 10 records

Smart MCB UEZ3-125

- Number of poles: 2P,4P
- Ue (V): AC230(2P)、AC400(4P)
- In (A): 63,80, 100
- Icn=Ics=6kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 4000 cycles
- Communication protocol: RS485(Modbus-RTU)
- Alarm function: overload, overvoltage, undervoltage,overpower
- Protection function: Short circuit, overload setting current, overvoltage, undervoltage ,overpower
- Information collection: current, voltage, power,frequency,electrical endurance ,electricity quantity etc
- Fault information: 10 records

Smart MCB UEZ3-125(1P)

- Number of poles: 1P
- Ue (V): DC65
- In(A): 6, 10, 16,25, 32, 40,50,63,80, 100
- Icn=Ics=10kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 6000 cycles(6~63A),4000 cycles(80~100A)
- Communication protocol: RS485(Modbus-RTU)
- Alarm function: overload, overvoltage, undervoltage,temperature,overpower
- Protection function: Short circuit, overload setting current, overvoltage, undervoltage, overtemperature,overpower
- Information collection: current, voltage, power,frequency,electrical endurance ,electricity quantity etc
- Fault information: 10 records

Smart MCB UEZ3-63(1P)

- Number of poles: 1P
- Ue (V): AC230/AC400
- In (A): 6, 10, 16,25, 32, 40,50,63
- Icn=Ics= 6kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 6000 cycles
- Communication protocol: RS485(Modbus-RTU)
- Alarm function: overload,temperature
- Protection function: Short circuit, overload setting current, overtemperature
- Information collection: current,temperature,electrical endurance etc
- Fault information: 10 records

Smart MCB UEZ3-63(1PN)

- Number of poles: 1PN
- Ue (V): AC230
- In (A): 6, 10, 16,25, 32, 40,50,63
- Icn=Ics=6kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 6000 cycles
- Communication protocol: RS485(Modbus-RTU)
- Alarm function: overload, overvoltage, undervoltage,temperature,overpower
- Protection function: Short circuit, overload setting current, overvoltage, undervoltage ,overtemperature,overpower
- Information collection: current, voltage, power,frequency,electrical endurance ,temperature,electricity quantity etc
- Fault information: 10 records

Smart MCB UEZ3 (3P)

- Number of poles: 3P
- Ue (V): AC400
- In(A): 6, 10, 16,25, 32, 40,50,63
- Breaking capacity: 6kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 6000 cycles
- Communication protocol: RS485(Modbus-RTU)
- Alarm function: overload,temperature,overvoltage, undervoltage,overpower
- Protection function: Short circuit, overload setting current, overtemperature ,overvoltage, undervoltage ,overpower
- Information collection: current, voltage, frequency,temperature,electrical endurance ,electricity quantity etc
- Fault information: 10 records

Smart MCB UEZ3 (3PN)

- Number of poles: 3PN
- Ue (V): AC400
- In (A): 6, 10, 16,25, 32, 40,50,63
- Breaking capacity: 6kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 6000 cycles
- Communication protocol: RS485(Modbus-RTU)
- Alarm function: overload,over voltage, under voltage,temperature,over power,
- Protection function: Short circuit protection, overload setting current protection, over temperature protection，over voltage, under voltage ,over power protection
- Information collection: current, voltage, power,frequency,temperature,electrical endurance ,electricity quantity etc
- Fault information: 10 records

Smart MCB with leakage protection UEZ3 (1PN)

- Number of poles: 1PN
- Ue (V): AC230
- In (A): 6, 10, 16,25, 32, 40,50,63
- Icn=Ics=6kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 6000 cycles
- Communication protocol: RS485(Modbus-RTU)
- Leakage current tripping type: Type A, type AC
- Sensitivity: 30mA, 50mA, 100mA, 300mA
- Alarm function: Leakage,overload,overvoltage, undervoltage,temperature,overpower
- Protection function: residual current ,Short circuit , overload setting current, over temperature ,overvoltage, undervoltage, overpower
- Information collection: Leakage current,current, voltage,power,frequency,temperature,electrical endurance ,electricity quantity etc
- Fault information: 10 records

Smart MCB with leakage protection UEZ3 (3PN)

- Number of poles: 3PN
- Ue (V): AC400
- In(A): 6, 10, 16, 20, 25, 32, 40, 50, 63
- Icn=Ics= 6kA
- Mechanical endurance: 10000 cycles
- Electrical endurance: 6000 cycles
- Communication protocol: RS485，Modbus-RTU
- Leakage current tripping type: Type A, type AC
- Sensitivity: 30mA, 50mA, 100mA, 300mA
- Alarm function: Leakage, overload, overvoltage, undervoltage, temperature and overpower
- Protection function: Leakage, short circuit,overload setting current overvoltage, undervoltage, overtemperature and over power protection
- Information collection: Leakage current, current, voltage,power, frequency, temperature, electrical endurance ,electricity quantity
- Fault information: 10 records

Fire Security

Current situation of electricity consumption

- "Heavy fire fighting and atmospheric discharge prevention" of traditional fire fighting
- Hidden electrical hazards can not be eliminated in advance, causing major personnel injury in case of fire
- Insufficient supervision and poor basic management and controlling
- Unrealistic fire fighting design without self checking function

Solution

- **Hidden fire hazards elimination:** Real time monitor the overload, short circuit, leakage and over temperature which may cause electrical fire hazards in order to eliminate it at the source.
- **Fire hazards reduction:** Based on real-time information collection, regular self checking and data processing, the system can warn and alarm the electrical fire hazards intelligently to effectively reduce the occurrence of hidden electrical fire hazards.

Information Communication

Current situation of electricity consumption

- High requirement on power supply continuity
- Regional maintenance is difficult, and the maintenance cost is high
- Unclear electrical fault
- Unable to supply power in real time in case of electrical fault

Solution

- **Auto reclosing:** Take the advantages of auto reclosing function to timely restore power for unattended base station.
- **Fault pre-alarm:** Power off and maintain the circuit with hidden electrical hazards in advance to prevent them from happening.
- **Fault analysis:** Count up and analyze the fault categories to pertinently maintain and repair.
- **Cost reduction:** Reduce the operation cost and equipment maintenance cost caused by power failure.

Charging Pile

Current situation of electricity consumption

- The traditional proposal of leakage MCB + din rail meter + contactor is with large size and high space occupancy.
- The frequency of electric shock and fire accident is high with low safety and using continuity.

Solution

- **Small size and low cost:** Smart breaker=traditional leakage MCB + din rail meter + contactor.
- **Smart control:** Timely restore power for accidental power failure.
- **Fault alarm:** Electrical fault alarm, leakage self checking to ensure safely using the equipment.
- **Fault analysis:** Count up and analyze the fault categories to pertinently maintain and repair.

APPLICATIONS

Smart Home

Current situation of electricity consumption

- Unclear electricity charges rising
- Unclear electrical fault
- Uncontrolled waste of electricity
- Unable to timely eliminate hidden electrical hazards

Solution

- **Effective energy saving:** Monitor home electricity information, reduce unconscious waste and standby power consumption.
- **Remote control:** Remotely close the circuit to realize one key disconnection function, limiting time and power.
- **Safety assurance:** Multiple protection and self check of the protection functions.
- **Prevention strengthening:** Circuit fault will be reported so to timely remind users and ensure the personal safety.

Smart Building

Current situation of electricity consumption

- Complicated electricity environment, high density of personnel, and poor adaptability
- Serious power waste
- High-power electrical appliance is illegally used which has hidden electrical hazards and may cause fire
- Accidental electric shock and electricity leakage causing fire

Solution

- **Safety protection:** Set rated power and alarm when over to limit overload and ensure electricity safe.
- **Remote control:** Timing control and timing power off to save energy and reduce consumption.
- **Fault pre-alarm:** Power off and maintain the circuit with hidden electrical hazards in advance to prevent them from happening.
- **Cost reduction:** Remote meter reading and charging to reduce management cost.

Public Places

Current situation of electricity consumption

- Lack of effective power safety solutions
- Fewer professional management personnel, more electrical equipment and difficult to manage
- Poor safety awareness, and failure to timely eliminate the fault
- Frequent electrical fire

Solution

- **Fault analysis:** Accurately analyze the fault types and provide timely solutions.
- **Smart monitoring:** Real time on-line monitoring of hidden fire hazards, like a 24-hour personal doctor.
- **Remote control:** Timely power off to protect the fault circuit, safely use the electricity.
- **Fire prevention:** Conform to the national fire safety management of dense place.

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The relevant information on the products contained is for reference only.
For details, please consult our business staff.