



KG Technologies, Inc.
6028 State Farm Drive, Rohnert Park, CA 94928
Tel: +1.888.513.1874 Fax: +1.707.665.5966
Email: techinfo@kgtechnologies.net
www.kgtechnologies.net



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SMART CIRCUIT BREAKERS FOR INTERNET OF THINGS



SMART LIFE AT YOUR FINGERTIPS |

PRODUCT SERIES Smart MCB



Power module



Gateway



1P



1P+N



1P+N leakage



3P+N



3P+N leakage

PRODUCT FEATURES



- Based on the Internet of things technology of the circuit breaker, the electrical parameters of the circuit breaker are collected by the built-in high-precision sensor, and the information is classified, counted and calculated by the high-performance CPU, which is used for the intelligent control of the circuit breaker or the output of parameter information.
- The mechanism adopts free tripping design to ensure the break to reliably and effectively break the current.
- The motor operating mechanism adopts efficient and reliable DC motor to provide stable power for opening and closing. The transmission gear adopts good gear material to ensure the reliability and endurance of opening and closing.
- The main chip of the control circuit board uses imported CPU, which has strong anti environment change ability and low power consumption. The operation rotation positioning system adopts high-precision micro switch, which has accurate positioning and strong anti-interference ability. The anti-interference design of the whole circuit board meet EMC requirements.
- The product adopts a new special design, with built-in current, voltage and temperature sensors. The measurement scheme is consistent with that of power meter, and the measurement accuracy is high.
- The power consumption of the product is lower than 60% of the national standard value, which is more energy-saving and environmental protective; more than 10 invention patents, a number of utility model patents and appearance patents have been applied.

SMART CIRCUIT BREAKERS

Product function

Highly Integrated, Can be Monitored and Controlled

Overload protection

RS485 communication

Electrical parameter measurement

Residual current monitoring

Residual current self-inspection

Manual and automatic switching

Residual current



Short circuit protection

Remote control

Overvoltage and under-voltage auto-reclosing

Fault alarm

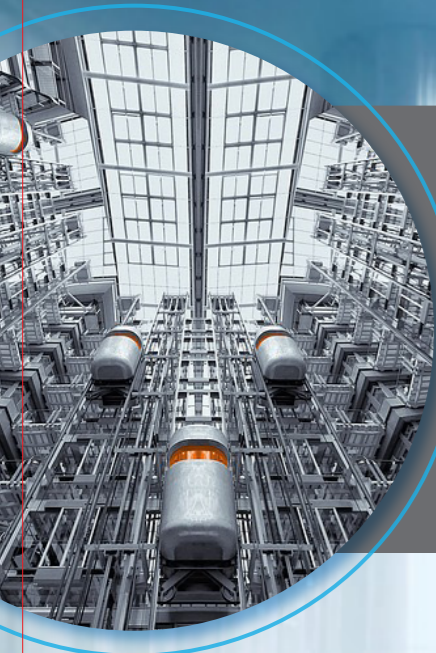
Endurance monitoring

Fault record

Circuit Isolation

TECHNICAL PARAMETER

Items	Functions
Rated current (adjustable)	63A (32A~63A can be remotely set) , 32A (6A~32A can be remotely set)
Rated operational voltage	AC230V (1P, 1P+N, 1P+N with residual current protection) , AC400V(3P+N, 3P+N with residual current protection)
Number of poles	1P, 1P+N, 1P+N with leakage, 3P+N, 3P+N with leakage
Rated breaking capacity	6kA
Short circuit protection	C type, 5In~10In
Overload protection	1.25In~1.45In
Residual current protection	Residual current sensitivity : 30mA, residual current type: AC
Residual current self-test	Manual self-test and can be set to automatic self-test
Overvoltage protection	When the voltage is higher than 275v or between 120v-160v, the circuit is switched off, when the voltage recovers to 195v-253v, the circuit is switched on.
Remote control switching off function	Manual or automatic switching off can be set on the panel
Fault indication function	Closing indication: the indicator light is in green; opening indication: the indicator light is in red. Fault indication: the indicator light is flashing in red (including alarm in closing state)
Information collection	Current, voltage, temperature, active power, reactive power, frequency, power
Measurement accuracy	Grade 0.5
Alarm function	Over-current: 1.13In~1.25In ; Overvoltage: 255V~275V (phase voltage); under-voltage: 160V~190V (phase voltage)
Fault record	10 recordable faults
Communication mode	RS485 communication



Power module provides 12V control power for circuit breaker

- Input voltage : AC220V
- Output voltage : DC12V
- Power : 30W
- Voltage accuracy : $\pm 5\%$
- Ripple : 100mV
- Standby power : 0.5W



Gateway Provides Communication Protocol Conversion for Circuit Breakers

- Communication rate : 10/100 Mbps
- Access mode : RS-485
- Output mode : TCP/IP, WiFi, Zigbee, 4G ,NB-IoT
- Power input : 12 VDC



SMART BREAKER VS TRADITIONAL BREAKER

NO YES

Items	Requirement	Traditional Breaker	Smart Circuit Breakers
Residual current self-test	can be set to manual self-test or automatic self-test	Yes, the owner is required to operate self test once a month.	<input checked="" type="radio"/>
Over-voltage protection	Open the circuit when the voltage is higher than 275v or between 120v-160v, and close the circuit when the voltage recovers to 195v-253v	<input type="radio"/>	<input checked="" type="radio"/>
Remote switching off function	Manual or automatic switching off can be set on the panel	<input type="radio"/>	<input checked="" type="radio"/>
Fault indication function	Closing indication: the indicator light is in green; opening indication: the indicator light is in red; Fault indication: the indicator light is flashing in red (including alarm in closing state).	<input type="radio"/>	<input checked="" type="radio"/>
Information collection	Current, voltage, temperature, active power, reactive power, frequency, power	<input type="radio"/>	<input checked="" type="radio"/>
Measurement accuracy	Grade 0.5	<input type="radio"/>	<input checked="" type="radio"/>
Alarm function	Over-current: 1.13In~1.25In ; Overvoltage: 255V~275V (phase voltage); under-voltage: 160V~190V (phase voltage)	<input type="radio"/>	<input checked="" type="radio"/>
Fault record	10 fault records available	<input type="radio"/>	<input checked="" type="radio"/>
Communication mode	RS485 communication	<input type="radio"/>	<input checked="" type="radio"/>
Switch off the circuit when overload, short circuit, residual current	Protect the circuit when there's fault in the circuit	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Over and under voltage auto reclosing	Switch off the circuit when the voltage (phase voltage) is higher than 275v, and switch on the circuit when the voltage recovers to below 253v, which can be set remotely by the user.	<input type="radio"/>	<input checked="" type="radio"/>
Endurance test	The electrical life and mechanical life can be tested.	<input type="radio"/>	<input checked="" type="radio"/>