The IOTB2-LZ/BZ Series IOT Circuit Breaker (Combined)

1. Summarize

Micro IOT breaker 1P, 1P+N, 2P, 3P, 3P+N, 4P with leakage protection and metering functions, suitable for low-voltage terminal distribution in industrial, commercial, civil buildings and infrastructure fields with rated current not exceeding 80A in AC 50Hz/60Hz, rated voltage 230V, 400V distribution networks. It provides safety protection, electricity monitoring, local and remote control, and is used to distribute electrical energy and protect lines and power equipment from overload, undervoltage, short circuit, leakage, overheating and other faults. with Equipped with an open communication interface, it can achieve communication methods such as 485 serial port, WIFI, 4G, NB, ZigBee, LoRa, etc. Utilizing the Internet of Things and big data technology to achieve user side smart energy services and energy-saving management.

2. Meet a criterion

This product conforms to

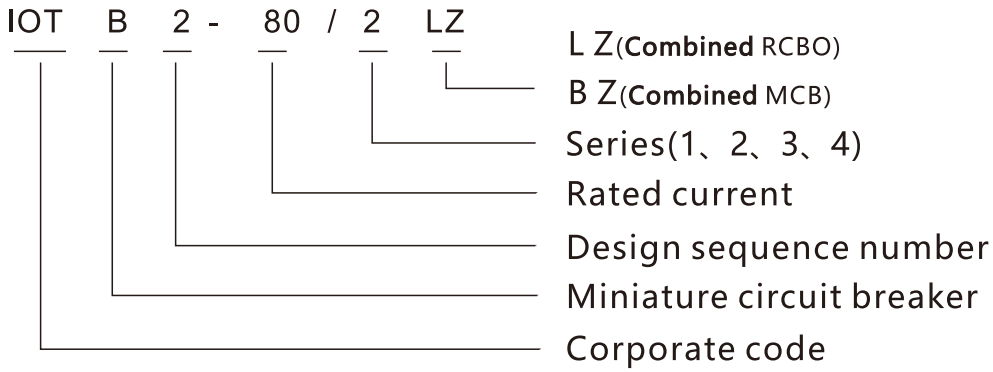
GB/T 14048.2-2020 Low Voltage switchgear and control equipment - Part 2: Circuit breakers

GB/T 16917.1-2014 Residual Current Operated Circuit breakers with overcurrent protection for domestic and similar purposes (RCBO) - Part 1: General Rules

CQC1149-2020 Residual current Action Break Certification with Remote control function with overcurrent protection Technical Specification

CQC1148-2020 Technical Specification for Certification of Plastic Housing Circuit Breakers with Remote Control function

3. Type interpretation



4. Applicable working environment and installation conditions

The products are suitable for intelligent iot network energy consumption monitoring and control, electrical safety monitoring and control, intelligent energy control and other systems, especially No human value guarding, centralized control, electronic data metering, idle operation and data network monitoring and control should be used.

Environment temperature	-25℃～40℃	Elevation	≤2000m
Environmental requirement	There is no danger of explosion, no conductive dust, no corrosive metal	RH (relative air humidity)	At +40 ° C, the relative 50% of the air can have a higher relative temperature at a lower temperature
Class of pollution	Level 2	Mounting type	TH35mm standard rail mounting

5. Combined product function

	FUNCTION	DESCRIPTION	1P	2P	1P+N	3P	4P	3P+N
SAFETY	Remote control switching	Control on-off	√	√	√	√	√	√
	Local manual switch on and off	Control on-off	√	√	√	√	√	√
	Security lock (remote or local)	Mechanism lock (internal structure) does not allow closing(off)	√	√	√	√	√	√
	Short-circuit protection	Instantaneous trip characteristics Type B, C and D	√	√	√	√	√	√
	Overload and overcurrent protection	There's bimetal, current transformer	√	√	√	√	√	√
	Leakage protection	30mA leakage current, 0.1sec break protection	×	×	√	×	×	√
	Leakage self-test	With local leakage manual self-test, remote self-test	×	×	√	×	×	√
	Over and under voltage protection	The voltage is below 176V/304V Higher than 275V/475V	△	√	√	△	√	√
	Open-phase protection	Give an alert	×	√	√	×	√	√
	Three phase imbalance alarm warning	Give an alert	×	×	×	√	√	√
	Line overtemperature protection	Monitor circuit breaker and terminal temperature in real time, alarm when the temperature rises above 85 ° C, and power off protection when the temperature exceeds 95 ° C	√	√	√	√	√	√
	Lightning surge protection	The drain current is 15KV	√	√	√	√	√	√
	Automatic power supply	Automatic power supply after power failure in specific cases	√	√	√	√	√	√
	Line generate sparks switch off action protection	Line generate sparks event alarm	√	√	√	√	√	√
	Malignant load power switch off action protection	Malignant load power alarm	√	√	√	√	√	√
ACQUISI-TION	voltage acquisition	There is a voltage transformer	×	√	√	√	√	√
	Current acquisition	There is a current transformer	√	√	√	√	√	√
	temperature data collection	Temperature sensor at each pole	√	√	√	√	√	√
	Leakage collection	Zero sequence transformer with leakage current	×	×	√	×	×	√
IOT	Power limitation	Automatic power off after reaching the set power	√	√	√	√	√	√
	Power Consumption	Power consumption measurement	√	√	√	√	√	√
	Real power Query power data	Real-time query voltage, current, electricity consumption,Leakage current, temperature data	√	√	√	√	√	√
	Safety information record	It can store and query the power failure or detection records for 12	√	√	√	√	√	√
	Multifunctional iot interface	Interconnection with TCP/IP, RS485, wifi,Zigbee, NB-IOT, LoRa, 2G, 4G	√	√	√	√	√	√
	Mobile APP management	Branch line record hour、daily、monthly，12 months available	√	√	√	√	√	√
	Platform centralized management	Manage via the Internet or private network	√	√	√	√	√	√
	Local edge computing	Do not rely on the cloud, local security monitoring and operation in the case of offline	√	√	√	√	√	√
MAINT-AINANCE	Mechanical locking inside the structure	Lock after tripping, after troubleshooting can be manually unlocked	√	√	√	√	√	√
	Repair, rerouting, Replacement convenience	Product replacement maintenance can be disassembled separately, Does not affect other lines	√	√	√	√	√	√

6. Product features

(1) Lock after the fault trip, after the fault maintenance is eliminated, you can remotely or manually unlock, more secure;
(2) With fast closing function:
Rapid closure can make the phase line and neutral line simultaneously connected (phase line connecting gap <2 ms);
Fast closure when overloaded, contact is not easy to stick;
The speed of closure has nothing to do with the speed of the operator or the motor.
(3) Between the gateway power supply and the circuit breaker body and the circuit breaker body, the special external connection piece and the external connection line are used for electricity
Source and communication connection, convenient, fast, reliable, beautiful;
(4) Reliable protection, which retains the traditional bimetallic thermal overload protection, even if the electronic failure, the original overload and short circuit breaker The road function can still play a protective role;
(5) It has the function of anti-strong magnetic interference.
(6) With a full range of invention patents, the use of more assured.

7. Technical specification

Rated voltage: single-phase 230V(1P, 2P), three-phase 400V(3P, 4P)

Number of poles: 1P, 1P+N, 2P, 3P, 3P+N, 4P

Rated current: 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A, 80A;

Mechanical life: ≥30000 times; Electrical life: ≥6000 times;

Breaking capability: Ics=Icn≥6000A

Trip characteristics: C-type instantaneous trip current, 5-10In

D-type instantaneous trip current, 10-20In

Type C instantaneous trip current:

Rated current In(A)	Initial state	Check current	Specified time t	Expected result	Check ambient temperature
Rated value	Cold state	5In	t≤0.1s	Non-trip	30℃~35℃
Rated value	Cold state	10In	t < 0.1s	Trip	30℃~35℃

Type D instantaneous trip current:

Rated current In(A)	Initial state	Check current	Specified time t	Expected result	Check ambient temperature
Rated value	Cold state	10In	t≤0.1s	Non-trip	30℃~35℃
Rated value	Cold state	20In	t < 0.1s	Trip	30℃~35℃

Leakage protection: When the line leakage reaches I△n, the circuit breaker 0.1S power off protection, leakage current alarm and action value can be set.The setting range is 15mA-30mA(configurable);
Short circuit protection: when the line is short circuit, the circuit breaker is 0.04S power off protection;
Undervoltage protection: the incoming voltage is lower than 176V(three-phase 304V), 3S internal break protection, press the local button can be used for emergency closing;
Overvoltage protection: the incoming voltage is higher than 275V(three-phase 475V), 1S internal break protection;

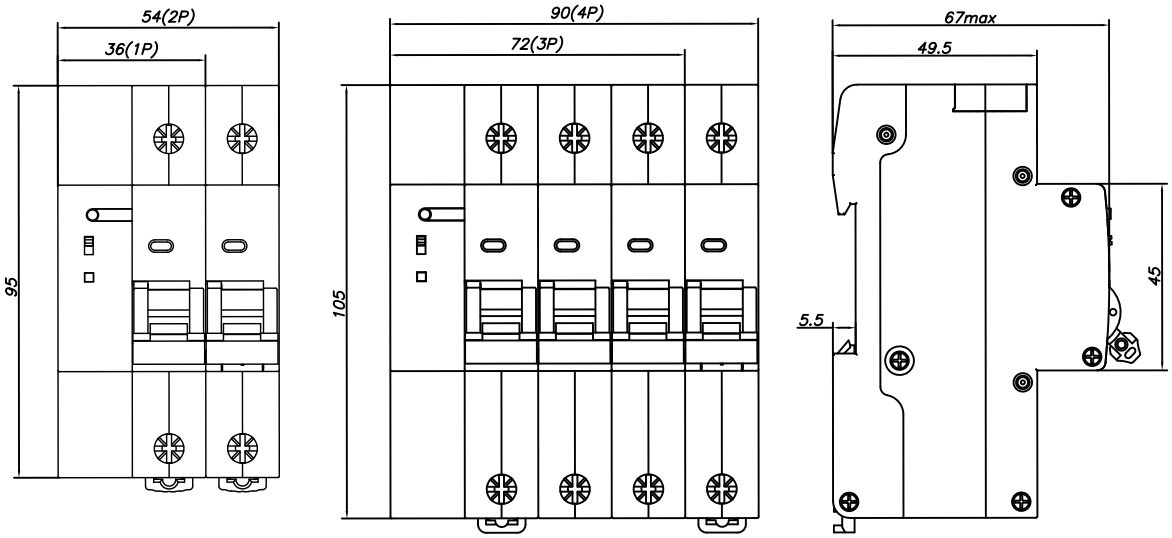
Overload protection:

Rated current In(A)	Initial state	Check current	Specified time t	Expected result	Check ambient temperature
> 63A	Cold state	1.13In	t≤2h	Non-trip	30℃~35℃
≤63A			t≤1h		
> 63A	Hot state	1.45In	t < 2h	Trip	30℃~35℃
≤63A			t≤1h		
≤32A	Hot state	2.55In	1s < t < 60s	Trip	30℃~35℃
> 32A			1s < t < 120s		

Power limit: the active power is greater than the overload alarm set value, will trigger the alarm;
Terminal temperature overtemperature protection: alarm over 85℃, break protection over 95℃;
Chip overtemperature alarm: The Internet of Things circuit breaker will monitor the chip tempera ture in real time, exceed the chip overtemperature alarm value, and enable the function
The chip overtemperature alarm is triggered.
Spark protection: When this function is enabled, any phase current harmonic is greater than the current harmonic set value twice in a row will produce spark protective action or alarm;
Malignant load protection: This function is enabled when the power increase is equal to the set malignant load power malignant load protection alarm or switching;
Lock protection: flip the switch to the maintenance mode, enter the lock mode, and the indicator light quickly blinks or is on, at this time, the Internet of Things circuit breaker will not receive any way of OFF command, nor can it be manually OFF until the lock mode is cancelled.

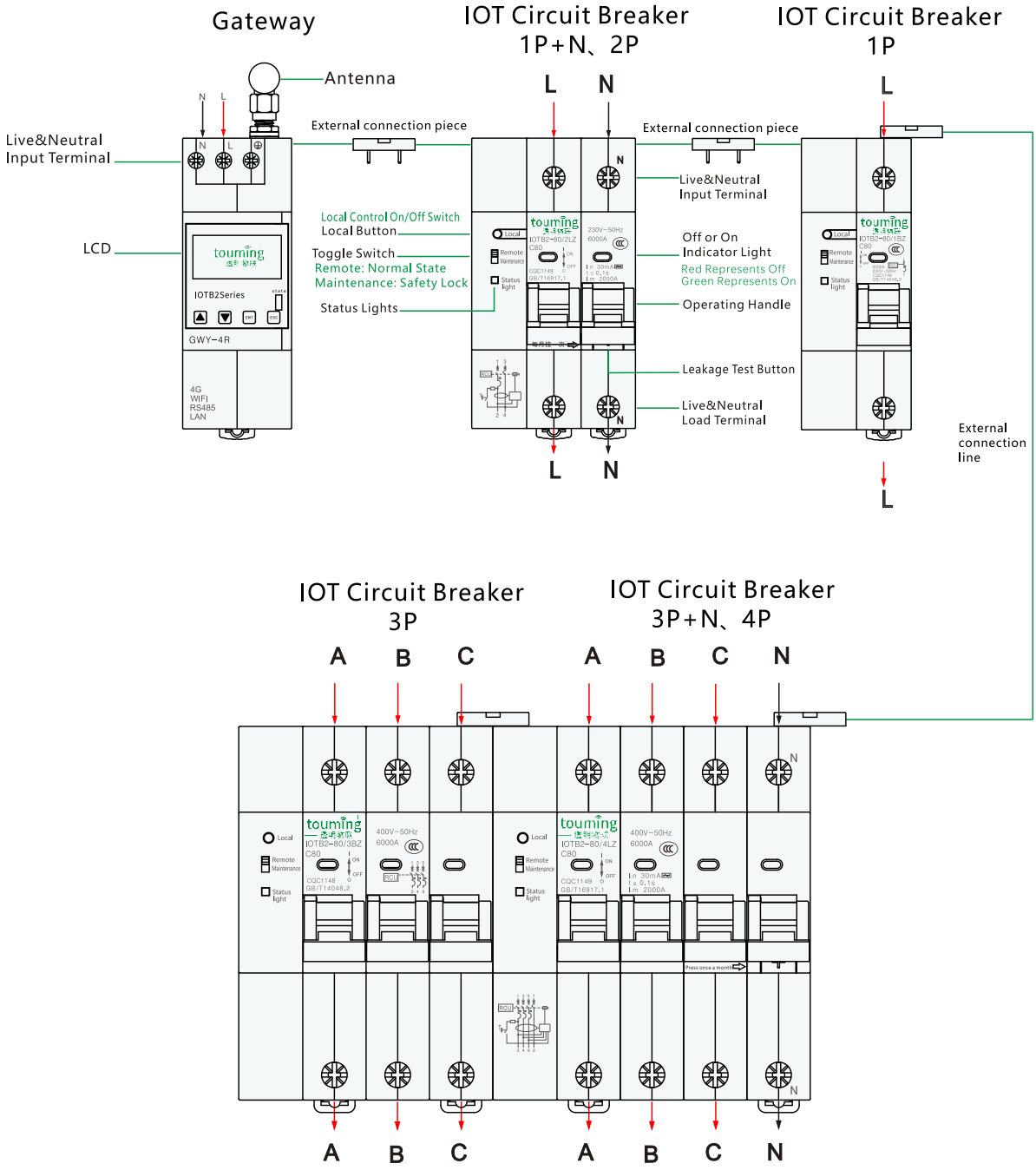
8.Overall dimensions and mounting dimensions

unit：mm

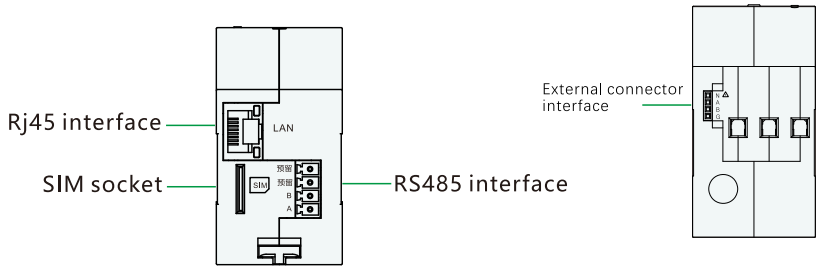


1P、2P、3P、4P

9. Product analysis



Gateway communication interface



IOTB2-LZ/BZ series product selection table combined 1P

Product drawing	Model	Series	Trip type	Rated current (A)	Installation placeholder
	IOTB2-16/1BZ	1P	C D	16	2P
	IOTB2-20/1BZ	1P	C D	20	2P
	IOTB2-32/1BZ	1P	C D	32	2P
	IOTB2-63/1BZ	1P	C D	63	2P

IOTB2-LZ/BZ series product selection table combined 2P

Product drawing	Model	Series	Trip type	Rated current (A)	Installation placeholder
	IOTB2-32/2BZ	2P	C D	32	3P
	IOTB2-63/2BZ	2P	C D	63	3P
	IOTB2-80/2BZ	2P	C D	80	3P
	IOTB2-32/2LZ	2P	C D	32	3P
	IOTB2-63/2LZ	2P	C D	63	3P
	IOTB2-80/2LZ	2P	C D	80	3P

IOTB2-LZ/BZ series product selection table combined 3P

Product drawing	Model	Series	Trip type	Rated current (A)	Installation placeholder
	IOTB2-32/3BZ	3P	C D	32	4P
	IOTB2-63/3BZ	3P	C D	63	4P
	IOTB2-80/3BZ	3P	C D	80	4P

IOTB2-LZ/BZ series product selection table combined 4P

Product drawing	Model	Series	Trip type	Rated current (A)	Installation placeholder
	IOTB2-32/4BZ	4P	C D	32	5P
	IOTB2-63/4BZ	4P	C D	63	5P
	IOTB2-80/4BZ	4P	C D	80	5P
	IOTB2-32/4LZ	4P	C D	32	5P
	IOTB2-63/4LZ	4P	C D	63	5P
	IOTB2-80/4LZ	4P	C D	80	5P