

1. Summarize

IOTM2LR series Internet of Things residual current action circuit breaker, is the company's latest design and development of products, is a main multi-function, small size, intelligent circuit breaker, suitable for the Internet of Things power distribution network. Used for three-phase four-wire neutral point direct grounding power supply, power system, can comprehensively collect power, power energy, power factor, harmonics and other power parameters; With overload, short circuit, lack of phase, over voltage, under voltage, residual current action protection and other functions, can protect the circuit and electrical equipment from damage, but also can exist in the circuit grounding fault and personal indirect contact to provide protection. Products comply with GB/T14048.2, GB/T14048.4, GB/T32902 standards.

2. Type interpretation

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- (1) Enterprise code;
- (2) Plastic shell type circuit breaker;
- (3) Design serial number;
- (4) With residual current protection;
- (5) Reoff code;
- (6) Rated shell frame current (A) : 125、 250、 400、 630、 800;
- (7) Short-circuit breaking capacity: S: Common M: Standard type; H: High resolution type
- (8) Number of poles: 3N means 3P+N(three protection poles, N pole can not be opened and closed), 4 means 4P(three protection poles, N pole can be opened and closed);

3. Applicable working environment and installation conditions

- (1) The ambient temperature is usually used: -10°C ~ +45°C, and the 24-hour temperature difference does not exceed 35K.

According to the actual installation location of the product, it is divided into class A area, Class B area, Class C area and high altitude, Areas, special conditions of use need to be negotiated with the manufacturer.

Class A area: the ambient temperature is expected to be -10°C ~ +75°C;

Class B area: period is -40°C ~ +40°C;

High altitude area: The altitude of the use area is more than 2000m, but not more than 4000m.

- (2) The maximum temperature is +40°C, the relative humidity of the air does not exceed 50%, and the relative humidity can be higher at lower temperatures. Special measures should be taken for the occasional condensation due to temperature changes;
- (3) The pollution level is 3;
- (4) The maximum inclination of the circuit breaker installation is $\pm 5^\circ$;
- (5) Installation category: Circuit breaker main circuit installation category is III, auxiliary circuit and control circuit installation category is II;
- (6) The external magnetic field of the installation site shall not exceed 5 times the geomagnetic field in any direction.

4. Product features

(1) Multi-functional

With residual current, overcurrent, short circuit and other protection functions, as well as automatic reclosing, residual current display, real-time load current display, action status indication, trip data display and other functions, the product can also be equipped with a pluggable lightning strike prevention module and a pluggable energy meter dual-mode communication module, the product also has geographical information reporting function, after the installation is completed, Geographical information is obtained through the visible light communication interface to provide the geographical location information of the circuit breaker for the main station of the data analysis system, to provide rapid positioning for the inspection personnel, and shorten the arrival time.

(2) Small size

From the combination of electric operating mechanism and air circuit breaker into one. The installation location is reduced and the wiring is simplified. With the function characteristics can be set the operation method, according to the actual situation, respectively set the action current, breaking time and main circuit current and other required functions.

(3) Intelligence

The intelligent control circuit composed of single chip microcomputer microprocessor can set and display the load current, can monitor the cause of the fault trip, display the fault parameters when the trip, can query the total number of various kinds of fault trip.

(4) Communicate

The circuit breaker can record and query the detailed data such as the phase sequence, cause and time of tripping, and has the historical data recording function. The product adopts RS-485 communication port and pluggable power meter dual-mode communication module (HPLC), with a variety of communication protocols to choose from, can establish communication functions with intelligent distribution terminals, host computers, etc., to achieve remote parameter adjustment, information query and download fault parameters and other functions. At the same time, the uplink has the carrier communication function, the downlink also has the micro power wireless communication function, and can realize the AD hoc networking function with the intelligent leakage monitoring micro-circuit breaker under the table.

(5) High-precision measurement

Circuit breaker current and voltage accuracy up to 0.5s, active power and reactive power up to 1 level.

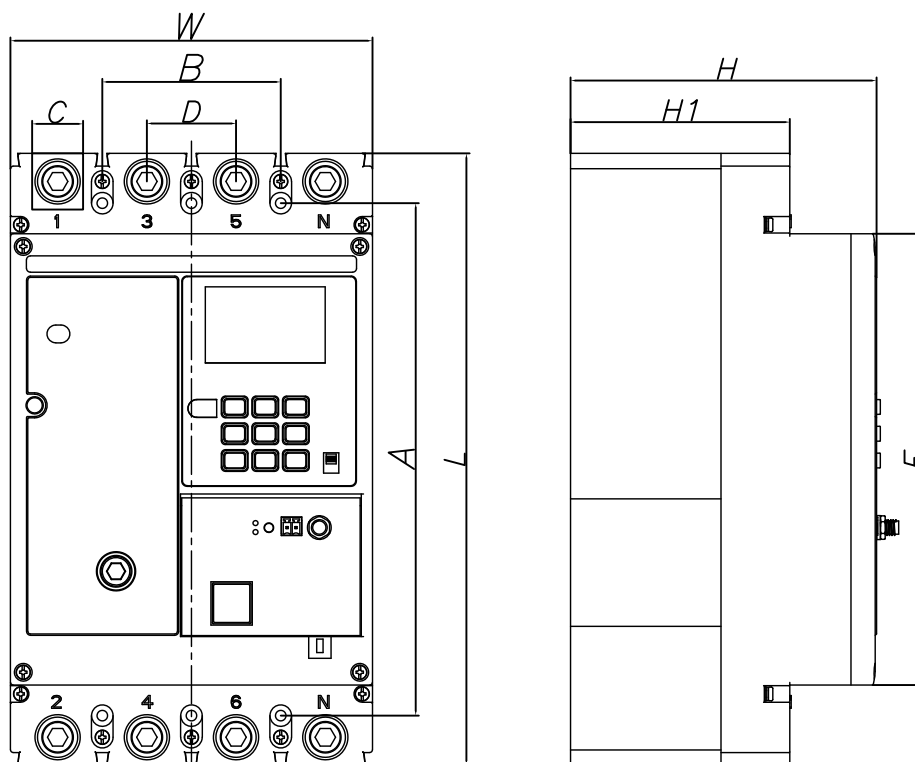
5. Main technical parameters

specifications and models	125	250	400	630	800
Frame current In(A)	50 ~ 125	100 ~ 125	160 ~ 400	250 ~ 630	320 ~ 800
Overload long delaysetting range IR(A)	(0.4~1)In				
Rated residual action CurrentIΔn(mA)	30mA(Only non delayed) /50mA/75mA/100mA/200mA/300mA/500mA/800mA/1000mA adjustable				
Ultimate non–drive time (s)	0.06 0.1 0.2 Optional Setting				
Series	3P+N; 4P				
Rated insulation voltage Ui(V)	AC1000				
Rated impulse withstand voltageUimp(V)	12000				
Rated operating voltage Ue(V)	AC380/400/415 50Hz				
Rated limit short-circuit breaking capacityIcu(kA)	S50/M65/H100		S50/M70/H100		
Rated operating short-circuit breaking capacityIcs(kA)	S35/M50/H70		S35/M50/H70		
Rated short-time withstand current Icw	10kA/1s				
use cases	B Class				
Rated remaining short-circuit making and breaking capacityIΔm(kA)	25%Icu				
ReON interval(s)	20~60(Manual ON is not limited by time interval)				

6. MCCB function list

Classify	Serial number	Function name	Functional requirements	Function Description	Remark
Local operation	1	The local button controls the on and off	ON and OFF buttons can be used to control the ON and OFF	Need to be powered on after normal operation	
	2	Local handle control breaks	ON and OFF can be controlled by turning the handle in the OFF state	The switch can be ON or OFF by turning the handle clockwise in the OFF state	
	3	Overcurrent protection	If the passing current exceeds the protection threshold, switch it off and an alarm is reported	When the passing current is greater than the overflow threshold The switch off automatically	Can be set to enable or disable
	4	Leakage current for protection	When the leakage current exceeds the set value, the switch will trip	The default leakage action value is 30mA, and the input leakage current of any phase A, B, and C is 15mA. At this time, the switch does not operate. When the leakage current is increased to 30±2mA, the switch will OFF	Can be set to enable or disable
	5	Local leakage self-test	Manual key self-check function	Manually press the test key switch to trip	
	6	low-voltage protection	Voltage below 176V, Switch protection 195V-253V recovery	After the function is put into operation, when the voltage drops to 176V, the switch will delay 0.5 seconds by default, and the delay switch will delay 30 seconds after the voltage is restored	Threshold can be set, including voltage loss protection, can be set on or off
	7	Overvoltage protection	Voltage higher than 275V, Switch protection 195V-253V recovery	After the function is put into operation, when the voltage rises to 275V, the switch will delay the action OFF by 0.5 seconds by default, and the delay will be ON, after the voltage is restored OFF delay 30 seconds	The threshold can be set, and can be set to enable or disable
	8	open-phase protection	The switch is OFF when the three phase is unbalanced or any one or two phases are missing in the three phases	When the three phases A, B and C are broken and the three phases are unbalanced, the switch must be OFF. When the switch is restored to normal, the delay is 30 seconds should OFF	Includes zero, protection, can be set to enable or disable
	9	terminal overtemperature protection	The switch opens when the terminal temperature exceeds the temperature	The default threshold is 75 °C, After the function is put into operation, modify the overtemperature action value in zone 4 to be less than the detected temperature value, and the switch must be OFF.	Can be set to enable or disable
	10	Harmonic protection	When the voltage harmonic value exceeds the set value, the switch protection	Set the protection watch and pass the corresponding current harmonic value	Can be set to enable or disable
	11	Remote control switch on and off	RS485 interface can be used to control the switch on and off	The DIP switch is switched to the remote file and is written to the 4 area address 4 in modbuspoll The 55AA switch OFF and the 55CC switch ON	The platform can remotely control the switching
IOT	1	The alarm is automatically sent	When a fault occurs, the platform has corresponding alarm feedback and corresponding records are available inquire	Log in to the platform and view the corresponding alarm information in alarm management	Fault alarm functions such as over current (including short circuit), over and under voltage, leakage, phase deficiency, three-phase unbalance, over temperature, and over load are introduced
	2	View circuit information remotely	Related circuit information can be viewed on the platform	Log in to the platform, select the switch to be operated in Device Management, and view details in Operation items	Voltage value, current value, leakage value, terminal temperature value, power value, electricity and other related circuit information
	3	Remote control switch	The control switch on the platform on and off	Log in to the platform, select the switch to operate in the device management, and click the switch control in the switch item	
	4	Remotely view the switch status	View the switch status on the platform	Log in to the platform, select the switch to be operated in Device management, and view the switch status	Online state, on and off state, lock state, etc

7. Overall dimensions and mounting dimensions



Specification	Boundary dimension (mm)					Installation size (mm)			External bronze size (mm)	Mounting screw size (mm)
	W	L	H	H1	F	A	B	D		
IOTM2LR-125M/3N	122	185	124	64	150	159	60	30	17	Ø4*45
IOTM2LR-250M/3N	142	240	120	87	176	201	70	35	20	Ø4*45
IOTM2LR-400M/3N	195	335	177	97.5	252	272	96	48	30	Ø4*65
IOTM2LR-630/800M3N	240	350	187	102	264	285	116	58	40	Ø4*65

Note: The opening size of the mounting hole is the base size. Customers can adjust the actual opening size according to the installation method.

(1) The circuit breaker should be installed vertically and fixed with screws through the mounting hole.

(2) The user selects the standard cross-sectional wire according to the product current specifications and connects the wire to the circuit breaker (with copper connection required) Head). Upper terminal of circuit breaker (right zero 1, 3, 5, N; Left zero N, 1, 3, 5) power into the main circuit Wire end, bottom terminal (right zero 2, 4, 6, N; Left zero N, 2, 4, 6) is the outgoing end. Power neutral line (zero Line) must be connected to the "N" terminal.

(3) After installation, power the circuit breaker. If the status indicator is off, it indicates that it is disconnected. Press "OFF" button, the circuit breaker begins to off, when the "OFF" status indicator light, indicating successful off.

Product Selection Table(IOTM2LR Series)

Product drawing	Model	Series	Communication method	Rated current (A)	Rated residual action Current I _{Δn} (mA)
	IOTM2LR-125	3P+N 4P	LTE(4G) WIFI RS485	IOTM2LR-125: 50-125A Adjustable	30mA (Only non delayed type) / 50mA/75mA/100mA/ 200mA/300mA/500mA/ 800mA/1000mA Adjustable
	IOTM2LR-250	3P+N 4P	LTE(4G) WIFI RS485	IOTM2LR-250: 100-250A Adjustable	30mA (Only non delayed type) / 50mA/75mA/100mA/ 200mA/300mA/500mA/ 800mA/1000mA Adjustable
	IOTM2LR-400	3P+N 4P	LTE(4G) WIFI RS485	IOTM2LR-400: 160-400A Adjustable	30mA (Only non delayed type) / 50mA/75mA/100mA/ 200mA/300mA/500mA/ 800mA/1000mA Adjustable
	IOTM2LR-630 IOTM2LR-800	3P+N 4P	LTE(4G) WIFI RS485	IOTM2LR-630: 250-630A Adjustable IOTM2LR-800: 320-800A Adjustable	30mA (Only non delayed type) / 50mA/75mA/100mA/ 200mA/300mA/500mA/ 800mA/1000mA Adjustable