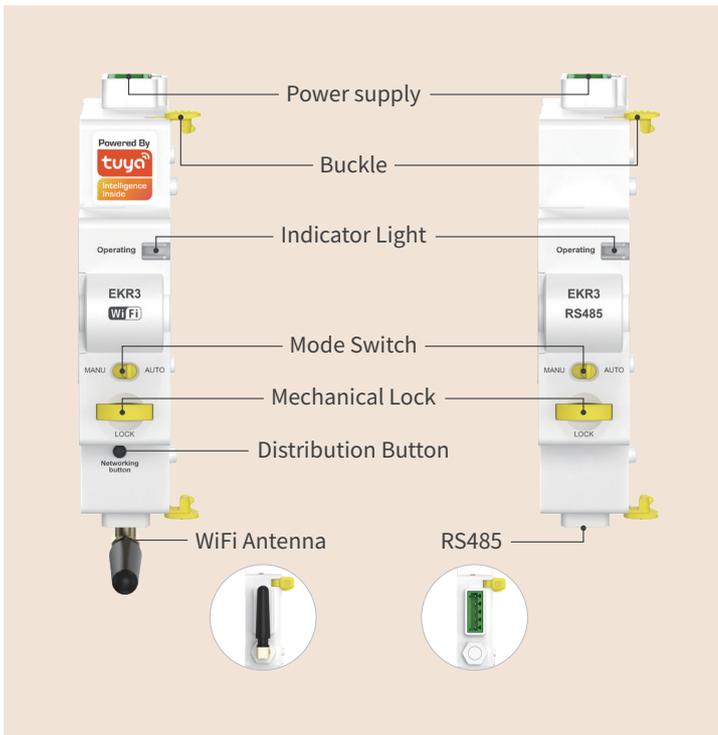




Overview



EKR3 series smart circuit breaker is the latest product developed by ETEK Electric. It contains smart MCB and smart RCBO. Remote distribution of circuit breaker equipment can be realized through Tuya APP, or a platform connected to RS485. Closing and timing switch to obtain the switching status of the equipment. At the same time, this series smart circuit breaker can provide automatic reclosing function. When a temporary failure occurs in the power system, the product will automatically reclose after tripping to improve the reliability of the circuit power supply.



Description of Automatic, Manual Mode Switches and Mechanical Locks



Allow remote control (Tuya APP, RS485).



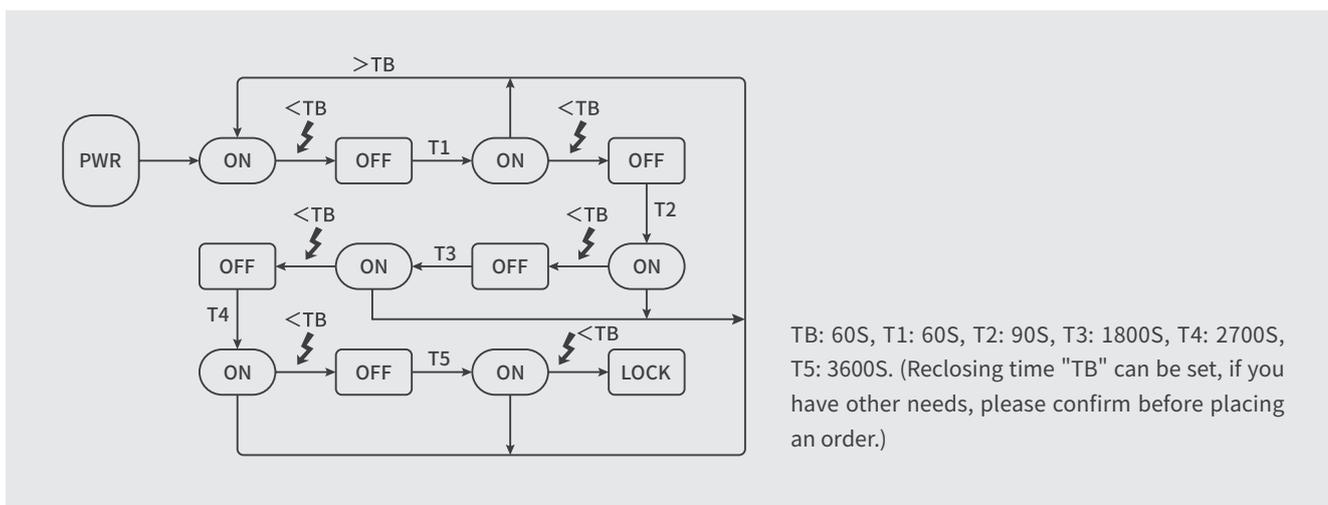
Remote operation is prohibited.



When the mechanical lock is pulled out, the device will enter the locked state, and the device will not be closed. Press the mechanical lock to restore it.

Indicator Light Description	
Green light is always on	Connect to cloud server
Green light flashes for 100ms	Mechanism failure
Green light flashes on for 100ms and off for 900ms	Manual, Padlock mode
Green light flashes for 500ms	Configuration network
Green light flashes for 5000ms	Connect to router
Green light flashing 100ms off 900ms on	Within the time TB
Green light flashing 1700ms off 100ms on 100ms off 100ms on	Automatic reclose waiting time T (T2, T3)

Reclosing Function Diagram for EKR3-RS485



When the circuit breaker is opened by an unknown fault (manual opening, short-circuit tripping, leakage tripping, overload tripping), it will automatically reclose, a total of 5 reclosing sequences, and each reclosing sequence time interval (T1, T2, T3, T4, T5). After successful reclosing, if a trip occurs again within the stable time TB, it will enter the next reclosing sequence, otherwise, if no trip occurs within TB, the reclosing sequence will be cleared. If the circuit breaker fails to reclose after 5 times of reclosing, manual closing or remote control closing is required to clear the fault.

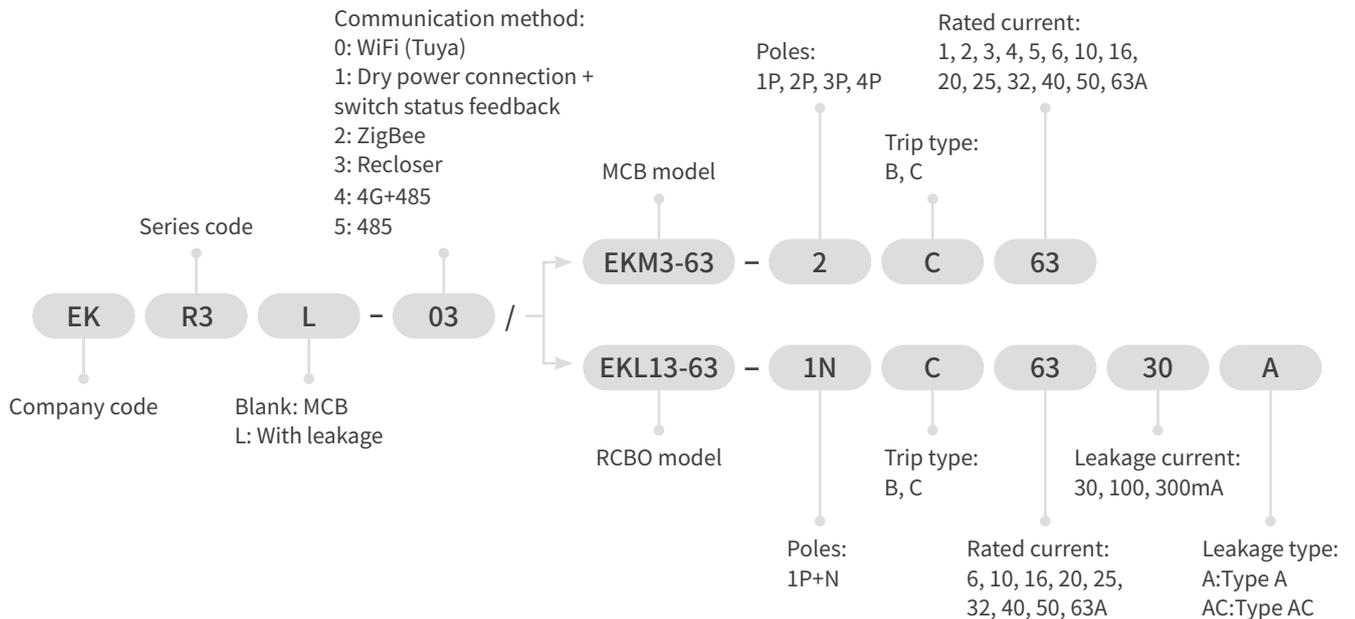
Indicator Light Description	
Red light is always on	Auto Mode Trip
Red light flashes for 100ms	Auto Mode - Motor Reset Failed or Cycle Close Failed
Red light flashes for 500ms	Auto mode overvoltage and undervoltage trip
Green light is always on	Auto mode closing, remote opening, signal opening
Green light flashes for 100ms	Automatic reclose waiting time
Yellow light is always on	Manual mode opening, closing

EKR3(L) Series

Smart Circuit Breaker

ETEK®

Instruction of Type code



Technical Parameter

Model	EKR3(L)-WiFi	EKR3(L)-RS485
Communication method	WiFi, ZigBee	RS485
Supply terminals	L-N	
Rated voltage (Ue)	AC 230V	
Power consumption	AC max.1VA (standby), max.20VA (action)	
Supply voltage tolerance	±10%	
Status Indicator	Green LED	Red, green and yellow tri-color LED
Trip time	≤ 1s	
Reclosing times	3 times (customizable)	5 times
Reclosing time	First time: 10 seconds; Second time: 60 seconds; Third time: 300 seconds; Customizable, cannot be changed after initial setup	First time: 60 seconds; Second time: 90 seconds; The third time: 1800 seconds; Fourth time: 2700 seconds; Fifth time: 3600 seconds; Adjustable time setting range: 60-3600 seconds.
Reset reclosing times	No more tripping or manual reset within 15 minutes after successful closing	No tripping or manual reset within 60 seconds after successful closing, Adjustable time setting range: 5-600 seconds.
Mechanical life	10000 Cycles	
Electrical life	4000 Cycles	
Ambient temperature	-20°C to +55°C (-4 °F to 131 °F)	
Storage temperature	-35°C to +75°C (-22 °F to 158 °F)	
Installation	Mounting on 35mm DIN rail	
Pollution degree	IP20	
Supply terminal size for cable	Max. 2.5mm ²	
Dimensions	91×18×61mm	
Compatible Device	MCB (EKM3-63), RCBO (EKL3-63, EKL13-63), from ETEK (More compatible devices are in development)	

Fault Description

1. The Device Cannot be Closed Remotely?

Check whether the remote lock is turned on in the APP.

Check whether manual opening has been carried out First, manually close and then operate on the APP to check if it can be closed and opened.

Whether the mechanical padlock is pulled out or not.

2. 485 Device cannot communicate, send opening/closing command, no action?

Please ensure that the device is in normal operation, and then check whether A and B of the RS485 line are reversed, whether the communication baud rate is set correctly, and whether there is any abnormality in the communication connection.

3. Operation Without Feedback?

Check whether the product terminals have been tightened.

Check the APP settings, notification type and whether the message notification is enabled.

4. After Power On, The Indicator Light Does Not Light Up?

Check whether the power interface is reversed, whether the switching power supply output has power or not.

5. LED light status description (Without reclosing)

WiFi, ZIGBEE	
Green light is always on	Connect to cloud server
Green light flashes for 100ms	Mechanism failure
Green light flashes for 100ms	Padlock mode
Green light flashes for 500ms	Configuration network
Green light flashes for 5000ms	Connect to router
RS485, Dry contact	
Red light is always on	Auto Mode Trip
Red light flashes for 100ms	Auto Mode - Motor Reset Failed or Cycle Close Failed
Red light flashes for 500ms	Auto mode overvoltage and undervoltage trip
Green light is always on	Auto mode closing, remote opening, signal opening
Green light flashes for 100ms	Automatic reclose waiting time
Yellow light is always on	Manual mode opening, closing

EKR3(L) Series

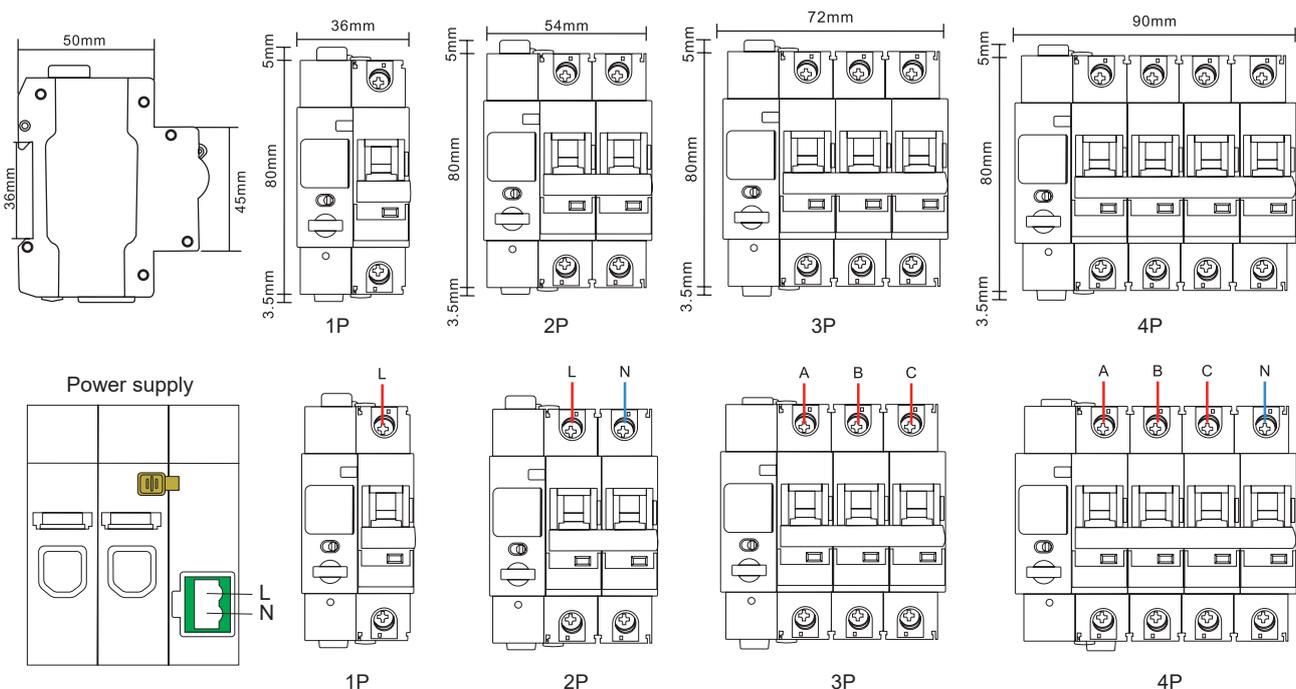
Smart Circuit Breaker

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EKR3 Smart MCB Technical Parameters

Standard	IEC/EN60898-1	IEC/EN60947-2
Protection	Overcurrent and short circuit	
Type of trip	Thermo-magnetic	
No. of poles	1P,2P,3P,4P	
Rated currents (In)	1,2,3,4,5,6,10,16,20,25,32,40,50,63A	
Rated voltage (Ue)	240/415V~	
Rated frequency	50/60Hz	
Rated breaking capacity	6,000A	
Energy Limiting Class	3	
Rated impulse withstand voltage(1.5/50) Uimp	6,000V	
Dielectric test voltage at Ind. Freq.for 1 min	2kV	
Thermal release characteristic	(1.13-1.45) x In	(1.05-1.30) x In
Magnetic release characteristic	B: (3-5) x In, C: (5-10) x In	(8-12) x In
Electrical life	8,000 Cycles	
Mechanical life	20,000 Cycles	
Contact position indicator	Yes	
Protection degree	IP20	
Ambient temperature	-5°C to +40°C Max.95%humidity	
Terminal connection type	Cable/Pin-type busbar	
Max.terminal size for cable	25mm ²	
Max.tightening torque	2.5N.m	
Installation	Mounting on 35mm DIN rail	
Connection	From top and bottom	

EKR3 Smart MCB Product Size and Wiring Method



EKR3L Smart RCBO Technical Parameters

Standard	IEC/EN61009-1
Protection	Ground fault, Overcurrent and short circuit, Over-voltage(selectable)
Type of trip	Ground fault: Electronic Overload and short circuit: Thermo-magnetic
Type of protection (electric leakage)	AC,A
No.of poles	1P+N 2module, N line with disconnected
Rated currents (In)	6,10,16,20,25,32,40,50,63A
Rated sensitivity currents IΔn	10,30,100,300mA
Residual current off-time under IΔn	≤ 0.1s
Rated residual making and breaking capacity (IΔm)	500A (In ≤ 50A), 10In (In>50A)
Rated voltage (Ue)	230/240V~
Rated frequency	50/60Hz
Rated breaking capacity	6,000A
Energy Limiting Class	3
Rated impulse withstand voltage(1.5/50) Uimp	4,000V
Dielectric test voltage at Ind. Freq.for 1 min	2kV
Thermal release characteristic	(1.13-1.45) x In
Magnetic release characteristic	B: (3-5) x In, C: (5-10) x In
Electrical life	4,000 Cycles
Mechanical life	10,000 Cycles
Contact position indicator	Yes
Ground fault indicator	Yes
Protection degree	IP20
Ambient temperature	-25°C to +40°C , Max.95% humidity
Terminal connection type	Cable/Pin-type busbar/Fork-type busbar
Max.terminal size for cable	25mm ²
Max.tightening torque	2.5N.m
Installation	Mounting on 35mm DIN rail
Connection	From top and bottom

EKR3L Smart RCBO Product Size and Wiring Method

