



Smart Reclosing Device MTM5

Instruction Manual

Document version v1.0

Release date 2021.06.17

Shanghai Matis Electric Co., Ltd.



FOREWORD

Overview

This manual includes: parts introduction, panel and interface introduction, installation and operation, module replacement, and introduction to the operation of the host computer software. The manual describes the complete functions of the MTM5.

The pictures of the device on the following pages are provided for reference only. Actual device features and specifications may vary.

Target Persons

This manual is mainly applicable to the following:

- Sales Engineer
- Technical Support Engineer
- Maintenance Engineer

Precautions

The following symbols may appear in this manual, and the meanings they represent are as follows.

Symbols	Meanings
	A hazard which, if not avoided, will result in a high risk of death or serious injury.
	A hazard with medium risk which, if not avoided, could result in death or serious injury.
	A hazard with a low risk which, if not avoided, could result in minor or moderate injury.
	Transmit device or environmental safety warning information. Failure to avoid it may result in device damage, data loss, reduced device performance or other unpredictable results.

	"Notice" does not involve personal injury.
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Revision Record

The revision record accumulates the description of each document update. The latest version of the documentation contains updates from all previous versions.

Document Version 1.0(2021-05-19)

This is the first official release.

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1. PRODUCT INTRODUCTION

1.1 Product Overview

The rated insulation voltage of RCCB MTM5 is 800V, suitable for the three-phase four-wire neutral point direct grounding (TT) distribution network with AC 50Hz, rated voltage 400V, rated current up to 630A. It is used to provide indirect contact protection and to prevent fire hazards caused by device insulation damage and ground fault current; it can also be used to distribute electrical energy and protect lines and power device from overload, undervoltage, short circuit, single-phase grounding and other faults.

Devices meet the following standards:

GB 14048.1–2012 “Low-voltage Switchgear and Control Device – Part 1: General”;

GB 14048.2–2008 “Low-voltage Switchgear and Control Device – Part 2: Circuit Breaker”;

GB 17701–2008 “Circuit Breaker for Device”;

GB/Z22202–2008 “Reliability Test Method for RCCB for Household and Similar Purposes”;

JB/T 10494–2005 “Reliability Test Method for RCCB for Household and Similar Purposes”;

JB/T 8979–2006 “RCCB with or without overload protection”.

1.2 Functions

- Real-time signal processing and intelligent control with high-performance 32-bit ARM microprocessor;
- LCD display in Chinese and friendly man-machine interface for easy operation;
- Residual current (earth leakage) protection, setting residual current gear online, and with reclosing function;
- Real-time monitor the residual current of the line and automatic adjustment

- of gears to ensure the commissioning rate and reliability of the device;
- Long-time delay, short-time delay and instantaneous protection with electronic tripping;
- High breaking capacity to ensure the reliability short-circuit protection;
- Overvoltage protection, undervoltage protection and phase loss protection;
- Real-time display of residual current, three-phase supply voltage and load current;
- Protection functions and parameters can be set or modified online;
- Tripping types (residual current, lock, overload, undervoltage, overvoltage, phase loss) are identified and displayed, and can be stored, inquired, and deleted;
- Support remote signaling, remote measuring, remote control and remote regulation;
- Infrared communication with plug-in surge protection device.

1.3 Appearance



2. DEVICE INSTALLATION

2.1 Installation Instructions



MTM5 must be installed by professional electrician.

The device manufacturer is not responsible for any damage caused by the user or installer's failure to follow warnings or recommendations in this manual, or damage caused by the use of non-original devices or accessories or by the



quality of the device itself.

- The device must be in the mechanical lock status when overhauling, and the padlock should be at the safety lock position for safety.
- After the safety lock is pulled out, the device will in the logical self-lock status, and the handle will be constrained automatically to the OFF position.

Production Installation

Installation Precautions

- Before installation, please check whether the device specifications and models are correct and whether the accessories are complete.
- Please read this instruction manual carefully to ensure correct installation and routine maintenance.
- Device must be installed vertically.
- According to the rated current of the device and relevant standards to select the appropriate wire and wire it in strict accordance with the regulations. The top is the power terminal, 1, 3, and 5 are connected to A, B, and C phases respectively, and N to the neutral line. The bottom is the load side, 2, 4, and 6 are respectively connected to A, B, and C phases, and N to the

neutral line.

- The cross-sectional area of the inlet and outlet wires should meet the construction requirements specified in the standard, and the conductive part should not be exposed beyond the shell.
- After wiring, please install the flash barrier correctly.
- Install the device in places where non-electricians and minors can't reach, prevent electric shock or changing the correct configuration and wiring of the device.

2.2 Installation and Fixing(缺文字图片)

3. FUNCTION AND OPERATION

3.1 Communication Function

Communication Interface	Interface Type	Communication Protocol	Communication Address	Communication Rate
RS485	External Terminal	DL/T – 645 Modbus (adjustable)	1-255	600-38400 (adjustable)

3.2 Liquid Crystal Product Operation

The circuit breaker has a power-on test function (can be turned off), which can effectively ensure the safety of subsequent device. After the correct trial operation of the device, the circuit breaker will be energized and it is in the breaking status. Set parameters according to the operation instructions. After the setting, the close operation is performed, and the running status is shown in picture 2, picture 3 and picture 4.

In ON status, press the [Trial Trip] button to perform a residual current trial trip, and the switch can reclose within 20s–60s.

14:10:25
 Ua: 220V Ub: 220V
 Uc: 220V
 OFF and Standby

Picture 2

10:41:35
 Ia: 000A Ib: 000A
 Ic: 000A
 ON and Operating

Picture 3

13: 01:25 **auto**
 Rated Residual: 200mA
 Residual Current: 0mA
 Close..

Picture 4

Close operation of circuit breaker

3.2.1 Automatic Close

1. Automatic Close

Press the [ON] button for 2 seconds, the LCD will display "Close..". After the successful close, the status of the LCD screen shows "close operation", and the circuit breaker enters the normal operation status.

2. Manual Close

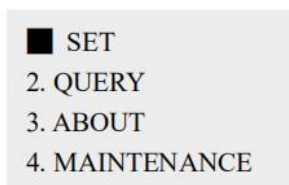
Insert the manual wrench in the accessory into the hole and turn clockwise about 360°. After successful the close, the status of the LCD screen is automatically updated to "close operation", and the circuit breaker enters the normal operation status. Note: Manual close can be performed when the main contact of the circuit breaker is disconnected. See the above method 2 for the close operation. Pay attention to the safety of load device and personnel when close manually.

Open Operation of the Short Circuit

1. In the running status, press the OFF key. After the successful open, the LCD screen displays "open standby".
2. When manual open is required, insert the wrench into the hole and turn it 180° clockwise. After the successful open, the ON/OFF indication is "OFF".

3.3LCD Product Operating Instructions

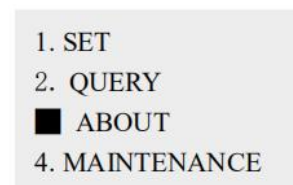
3.3.1Main Menu



Picture 5



Picture 6



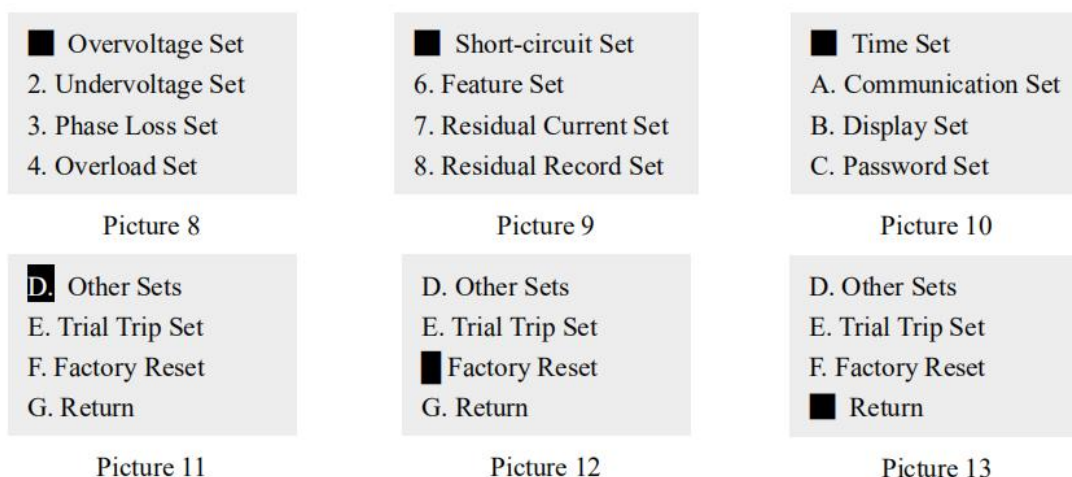
Picture 7

In real-time display status:

[Set] button to enter the main menu interface as shown above.

[Up/Down] buttons control the reserve video position.

[OK] button to enter the corresponding submenu.



As shown above.

[Up/Down] buttons to control the reserve video position or page turning.

[OK] button to enter the corresponding setting menu.

[Return] button to return to the previous menu.

3.3.2 Overvoltage Setting



As shown above.

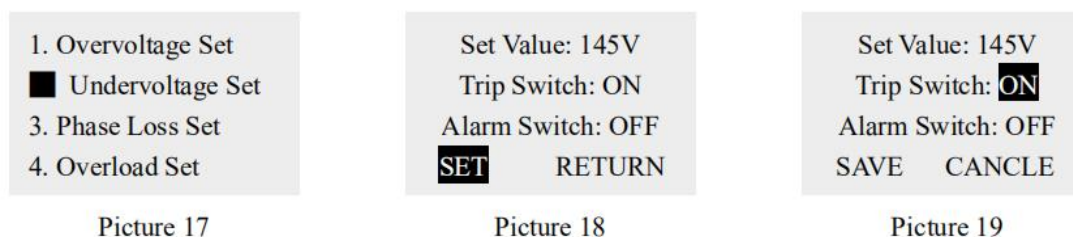
[Up/Down] buttons to control the reserve video position or page turning.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

Overvoltage protection can be turned off or set in the range of 250~300V.

3.3.3 Undervoltage Setting



As shown above.

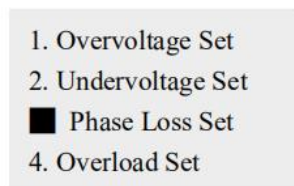
[Up/Down] buttons to control the reserve video position or page turning.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

Undervoltage protection can be turned off or set in the range of 150~200V.

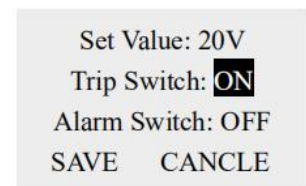
3.3.4Phase Loss Setting



Picture 20



Picture 21



Picture 22

As shown above.

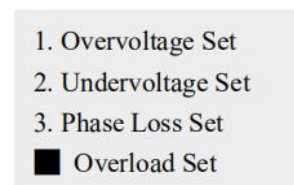
[Up/Down] buttons to control the reserve video position or page turning.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

Phase loss protection can be turned off or set in the range of 10V~50V.

3.3.5Overload Setting



Picture 23



Picture 24



Picture 25

As shown above.

[Up/Down] buttons to control the reserve video position or page turning.

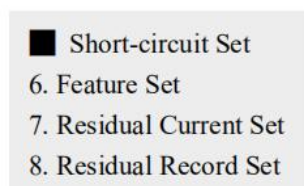
[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

The overload protection is invalid when the delay time is OFF/ (or) the overcurrent protection is closed.

Please refer to the curve diagram for the overload delay time curve.

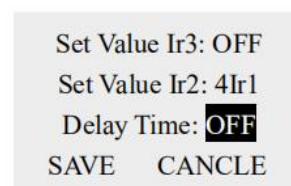
3.3.6 Short-circuit Setting



Picture 26



Picture 27



Picture 28

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

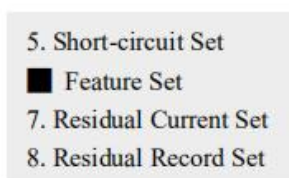
The short-circuit short-time delay protection is invalid when the delay time is OFF/ (or) the overcurrent protection is closed.

Ir3: Short circuit instantaneous current.

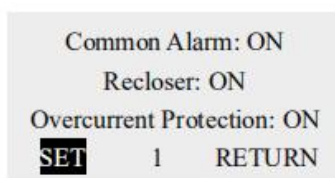
Ir2: Short circuit short-time delay current.

Note: Ir2 setting value cannot exceed Ir3 setting value.

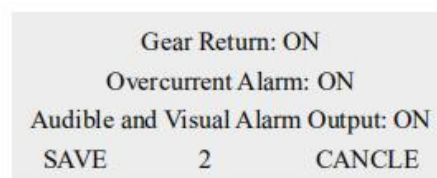
3.3.7 Feature Setting



Picture 29



Picture 30



Picture 31

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

The short-circuit short-time delay protection is invalid when the delay time is OFF/ (or) the overcurrent protection is closed.

Common alarm: short-circuit instantaneous current.

Recloser Allowed: Auto-recloser will not be available after close.

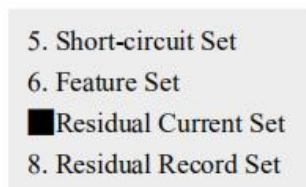
Gear return: After close, it will not automatically float down in the residual current automatic mode.

Overcurrent protection: All faults caused by current will not be protected after shutdown.

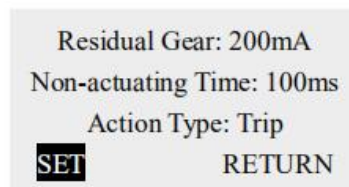
Overcurrent alarm: All faults caused by current will not be alarmed after shutdown.

Audible and visual alarm: All alarms will not be output after close.

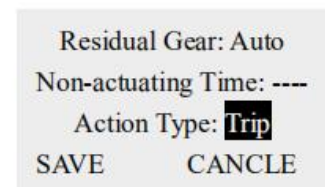
3.3.8 Residual Current Setting



Picture 32



Picture 33



Picture 34

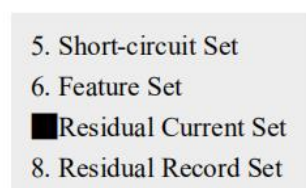
As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

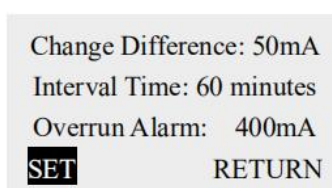
[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

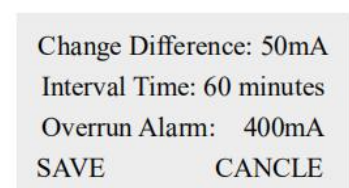
3.3.9 Residual Record Setting



Picture 35



Picture 36



Picture 37

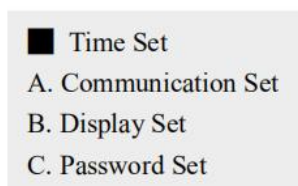
As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

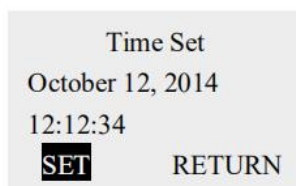
[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

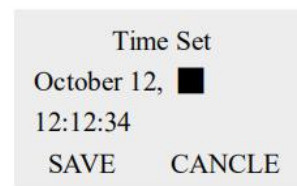
3.3.10 Time Setting



Picture 38



Picture 39



Picture 40

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

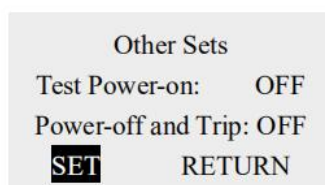
[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

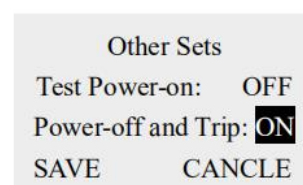
3.3.11 Other Settings



Picture 50



Picture 51



Picture 52

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

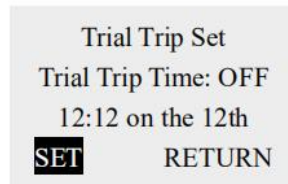
Test power-on: open — after the circuit is powered on, if there is no fault in the circuit, the device will automatically close;

Power-off and trip: open — the device automatically trips after the circuit is powered off.

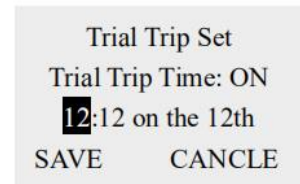
3.3.12 Trial Trip Setting



Picture 53



Picture 54



Picture 55

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

3.3.13 Factory Reset



Picture 56



Picture 57

As shown above.

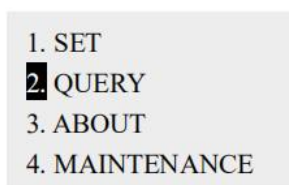
[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

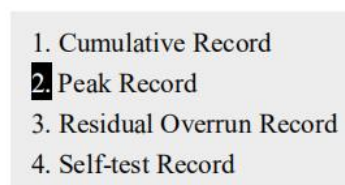
[Return] button to return to the previous menu.

Factory reset requires a level 1 password. It cannot clear records and password parameters, and cannot exit maintenance mode.

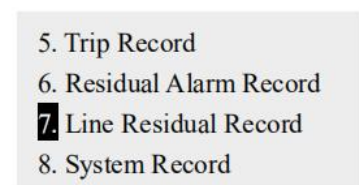
3.3.14 Query Menu



Picture 58



Picture 59



Picture 60

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

3.3.15 Cumulative Record

Data Reset: 00000 times	Current Trip: 00001 time	Trial Trip: 00001 time
Fault Trip: 00000 times	Voltage Trip: 00001 time	Exit Remaining: 00001 time
Lock Trip: 00001 time	Manual Trip: 00001 time	Runtime: 00000 minutes
Residual Trip: 00001 time	Neutral Loss Trip: 00001 time	2014-10-12 12:12

Picture 61

Picture 62

Picture 63

As shown above.

[Up/Down] buttons to turn pages.

[Return] button to return to the previous menu.

2014-10-12 12:12 is the system startup time.

3.3.16 Peak Record

XXX.XV	XXX.XXA	XXXXmA
XXX.XV	XXX.XXA	XXXXmA
Type: B-phase Voltage	Type: B-phase Current	Type: Residual Current
Peak Date: 01st	Peak Date: 21st	Peak Date: 12th

Picture 64

Picture 65

Picture 66

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

The peak records of three-phase voltage, three-phase current and residual current can be inquired from the 1st to the 31st (occurring time of the maximum and minimum values).

3.3.17 Residual Overrun Record

1. SET
2. QUERY
3. ABOUT
4. MAINTENANCE

Picture 67

1. Cumulative Record
2. Peak Record
3. Residual Overrun Record
4. Self-test Record

Picture 68

Overrun Phase: Unknown
Overrun Value: XXXXmA
Start
End00

Picture 69

As shown above.

[Up/Down] buttons to query the records before and after.

[Return] button to return to the previous menu.

00: represents the position of the current record.

3.3.18 Self-test Record

1. SET
2. QUERY
3. ABOUT
4. MAINTENANCE

Picture 70

1. Cumulative Record
2. Peak Record
3. Residual Overrun Record
4. Self-test Record

Picture 71

Self-test Result: Success
Self-test Mode: Button
Date: 2014-10-12
01 Time: 12: 11: 11

Picture 72

As shown above.

[Up/Down] buttons to query the records before and after.

[Return] button to return to the previous menu.

01: represents the position of the current record.

3.3.19 Trip Record

1. SET
2. QUERY
3. ABOUT
4. MAINTENANCE

Picture 73

5. Trip Record
6. Residual Alarm Record
7. Line Residual Record
8. System Record

Picture 74

Fault Cause: Overvoltage
Fault Phase: Phase A
Date: 2014-10-10
01 Time: 12: 00: 12

Picture 75

As shown above.

[Up/Down] buttons to query the records before and after.

[Return] button to return to the previous menu.

[OK] button switches to the real-time status before the fault.

01: represents the position of the current record.

3.3.20 Residual Alarm Record

1. SET
2. QUERY
 3. ABOUT
 4. MAINTENANCE

Picture 76

5. Trip Record
6. Residual Alarm Record
 7. Line Residual Record
 8. System Record

Picture 77

Start: 2014-01-10
 Time: 12: 33: 10
 End: 2014-10-11
01 Time: 12: 35: 50

Picture 78

As shown above.

[Up/Down] buttons to query the records before and after.

[Return] button to return to the previous menu.

01: represents the position of the current record.

3.3.21 Line Residual Record

1. SET
2. QUERY
 3. ABOUT
 4. MAINTENANCE

Picture 79

5. Trip Record
 6. Residual Alarm Record
7. Line Residual Record
 8. System Record

Picture 80

Residual Phase: Unknown
 Residual Value: 1000mA
 Date: 2014-10-09
01 Time: 12: 35: 50

Picture 81

As shown above.

[Up/Down] buttons to query the records before and after.

[Return] button to return to the previous menu.

01: represents the position of the current record.

3.3.22 System Record

1. SET
2. QUERY
 3. ABOUT
 4. MAINTENANCE

Picture 82

5. Trip Record
 6. Residual Alarm Record
 7. Line Residual Record
8. System Record

Picture 83

=== System Record ===
 Event 002: Start System
 00: 00: 00 ID: 00001
 2014-10-20 **Return**

Picture 84

As shown above.

[Up/Down] buttons to query the records before and after.

[OK] button return to the previous menu.

[Return] button to return to the previous menu.

ID: represents the position of the current record.

3.3.23 About Menu

XXXX- 250A
Firmware Version: V01.01
Hardware Version: V05.08
Delivery: 20XX-XX-XX

Picture 85

After-sales Service:
Phone: XXXXXXXX
Company: XXXXXXXX
www.XX.com

Picture 86

Delivery: 20XX-XX-XX
=====

Number: XXXXXXXA0000
=====

Picture 87

As shown above.

[Up/Down] buttons to turn pages.

[Return] button to return to the previous menu.

3.3.24 Maintenance Menu

1. SET
2. QUERY
3. ABOUT
4. MAINTENANCE

Picture 87

--Level 2 Password--
Please enter password!!
0000

Picture 88

1. maintenance	5. mechanical test
2. capacity	6. password reset
3. trial trip	7. logout and return
4. self-test	8. return

Picture 89

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

The maintenance menu requires a level 2 password to log in. After logging in, it will automatically log out if there is no keyboard operation within the return time.

In the maintenance menu, you can view and operate the event record, login password, switch status, etc.

Trial trip: If the switch is in ON status, the trial trip function will be activated to check whether it can trip normally.

Self-test: The switch starts the self-test procedure to check whether there are

any wrong parameters.

Mechanical test: The switch is automatically open and close, and the interval time is 10–999 seconds/time.

3.3.25 Maintenance Mode

1. maintenance	5. mechanical test
2. capacity	6. password reset
3. trial trip	7. logout and return
4. self-test	8. return

Picture 90

Maintenance Mode
Level 0 Password: ****
Please enter password!!
ENTER EXIT

Picture 91

Maintenance Mode
Level 0 Password: ****
Please enter password!!
ENTER EXIT

Picture 92

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

In the maintenance mode, the switch does not carry out any protection and the screen backlight flashes. The maintenance mode is still maintained when the power is off, and it will not exit until you press "Return" or "Logout and Return". Press "Return" to exit and then enter maintenance mode without a level 0 password, while press "Logout and Return" and enter again requiring a password.

3.3.26 Capacity

1. maintenance	5. mechanical test
2. capacity	6. password reset
3. trial trip	7. logout and return
4. self-test	8. return

Picture 93

Capacity Query
System: 0000/1963 NO
Trip: 0000/0010 NO
Self-test: 0000/0010 NO

Picture 94

Maintenance Mode
Overrun: 0000/0010 NO
Alarm: 0000/0010 NO
Clear All Data: NO

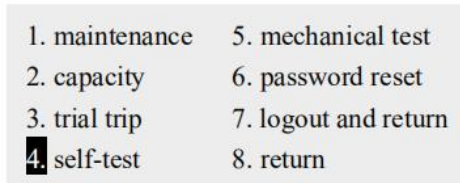
Picture 95

[Up/Down] buttons to control the reserve video position or adjust parameters.

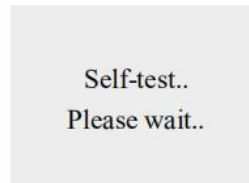
[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

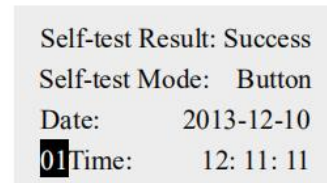
3.3.27 Self-test



Picture 96

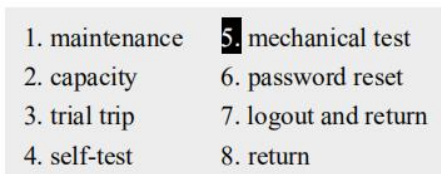


Picture 97

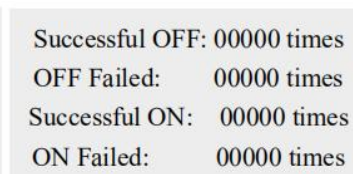


Picture 98

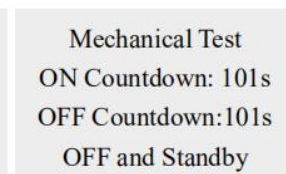
3.3.28 Mechanical Test



Picture 99



Picture 100



Picture 101

As shown above.

[Up/Down] buttons to adjust countdown parameters.

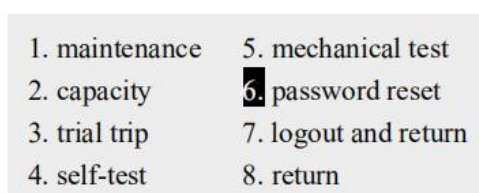
[Set] button to switch setting options.

[OK] button to view the number of operations.

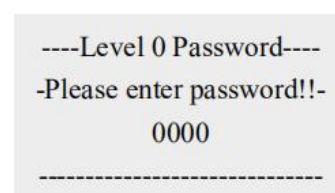
[Return] button to return to the previous menu.

In the mechanical test mode, press the [Return] button to exit the mechanical test mode, press the [Up/Down] buttons to check the number of tests, and the countdown will be displayed automatically if the button is not operated after the return time.

3.3.29 Password Reset



Picture 102



Picture 103

As shown above.

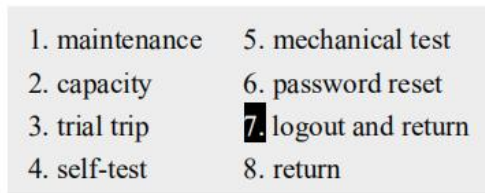
[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

To reset the password, you need to enter the level 0 password, and it will automatically return to the maintenance menu when the password is correct.

3.3.30 Logout and Return



1. maintenance	5. mechanical test
2. capacity	6. password reset
3. trial trip	7. logout and return
4. self-test	8. return

Picture 104

As shown above.

[Up/Down] buttons to control the reserve video position or adjust parameters.

[OK] button to enter the corresponding setting menu/switch setting options.

[Return] button to return to the previous menu.

After logging out and returning, a password is in need to enter again.

3.4 Digital Tube Product Operation

The circuit breaker has a power-on test function (can be turned off), which can effectively ensure the safety of subsequent device. For specific operations, see the setting code table.

3.4.1 Product Trial Operation

Turn on the circuit breaker after the correct wiring and it is in the breaking status. Set the parameters according to the operating instructions and perform the close operation after the setting. The ON indicator light flashes during the close process, and is always on after the successful close. In ON status, press the [Trial Trip] button to perform a residual current trial trip, and the switch can be reclosed within 20s–60s.

3.4.2 Close Operation of the Circuit Breaker

1. Automatic Close

Press [ON] button for 2 seconds and the ON indicator flashes. When the ON indicator is always on and the ON/OFF indicator is "ON", the circuit breaker is in the normal operation status.

2. Manual Close

Insert the manual wrench in the accessory into the hole and turn it clockwise about 360°. After the successful close, the ON indicator light is always on, the ON/OFF indication is "ON", and the circuit breaker enters the normal operation status.

Note: When the main contact of the circuit breaker is disconnected, manual close can be performed. See the above method 2 for the close operation. Pay attention to the safety of load device and personnel when manually close.

3.4.3 Open Operation of the Circuit Breaker

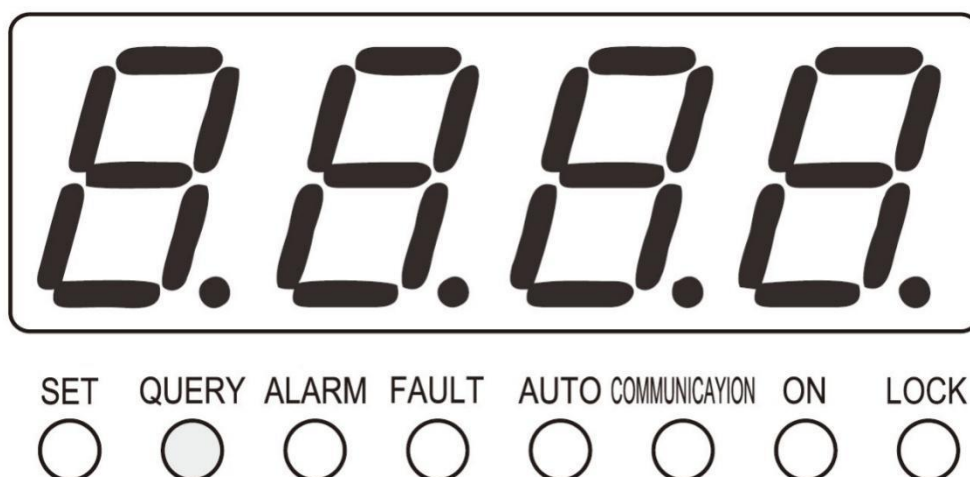
1. In the running status, press the [OFF] key. After the open is successful, the ON indicator light is off, and the ON/OFF indication is "OFF".
2. When manual open is required, insert a wrench into the hole and turn it 180° clockwise. After the open is successful, the ON/OFF indication is "OFF", and the ON indicator light is off.

3.5 Digital Tube Operation Instructions

3.5.1 Digital Tube Menu Description

The menu is displayed by means of [real-time display], [parameter setting], [fault display] and [fault query] in conjunction with the panel indicator lights. The display panel is as shown below:

Setting Menu			Unit	Setting Menu			Unit	Setting Menu			Unit
S-01	Overvoltage Value		V	S-11	Action Time		ms	S-21	Baud Rate		
S-02	Overvoltage Alarm			S-12	Leakage Alarm			S-22	Address		
S-03	Overvoltage Trip			S-13	Ir1 Setting Value		A	S-23	Password		
S-04	Undervoltage Value		V	S-14	Ir1 Action Time		s	S-24	Time-year		
S-05	Undervoltage Alarm			S-15	Ir2 Setting Value		xIR1	S-25	Time-month		
S-06	Undervoltage Trip			S-16	Ir2 Action Time		ms	S-26	Time-day		
S-07	Phase Loss Value			S-17	Ir3 Setting Value		xIR1	S-27	Time-hour		
S-08	Phase Loss Alarm			S-18	Power-on and Close			S-28	Time-minute		
S-09	Phase Loss Trip			S-19	Power-off and Open			S-29	Neutral Loss Alarm		
S-10	Leakage Value		mA	S-20	Communication Type			S-30	Neutral Loss Trip		



Fault Display						Real-time Display		Unit	Real-time Display		Unit
F-02	Leakage	F-07	Phase Loss	F-13	Remote	U-A	A-phase Voltage	V	L-B	B-phase Current	A
F-04	Neutral Loss	F-08	Undervoltage	F-14	Simulate	U-B	B-phase Voltage	V	L-C	C-phase Current	A
F-05	Overload	F-09	Overvoltage	F-15	Lock	U-C	C-phase Voltage	V	L-D	Real-time Leakage Current	mA
F-05	Short Circuit	F-12	Test	F-18	Manual	L-A	A-phase Current	A	L-L	Rated leakage current	mA

Indicator Instruction:

Setting (indicator): When entering the setting menu, the light is automatically on,

otherwise it is off.

Query (indicator): When entering the query menu, the light is automatically on, otherwise it is off

Alarm (indicator): When there is an alarm message, the light flashes automatically, otherwise it is off.

Fault (indicator light): When the device trips due to fault, the light is automatically on, otherwise it is off.

Automatic (indicator): When the leakage is set to automatic mode, the light is automatically on, otherwise it is off

Communication (indicator): When communicating with an external device, the light flashes automatically, otherwise it is off.

ON (indicator): When the device is in automatic close status, the light flashes, and the light is always on after close, otherwise it is off.

Lock (indicator): When the device is in lock status, the light is automatically on, otherwise it is off.

3.6 Real-time Display

[Real-time display] is displayed by switching between code and real-time value, and the display unit has been marked on the panel.

Press the [Up] / [Down] button to switch the display content.

Press the [Set] button to enter the [Parameter Setting] menu.

Press the [OK] button to enter the [Fault Query] menu.

3.7 Parameter Setting

[Parameter Setting] menu is displayed by switching between the setting code and the setting value, and the display unit has been marked on the panel.

[Parameter Setting] menu defaults to query mode, at this time the setting code and setting value are switched to display.

Press the [Up] / [Down] button to switch the setting options. When setting is required, press the [OK] button to enter the setting mode, and only the setting value will be displayed at this time. This moment, you can press the [Up] / [Down] button to adjust the parameters. Press the [OK] button to save the setting parameters and return to the query mode. When setting the parameters for the first time, you need to input the operation password. When the password is entered, the digital tube will display – – –, and you are required to enter a 4-digit operation password. At this time, press the [OK] button to enter the password input status, and press the [Up]/[Down] button to adjust the password input value, then press the [Set] button to select the password setting bit. If the password is incorrect, you need to re-enter it.

3.8 Query Mode

Press the [Up] / [Down] button to switch the setting options.

Press the [OK] button to enter the setting mode, and the operation password is required for the first setting.

Press the [Return] button to return to the [Real-time Display] menu.

3.9 Setting Mode

Press the [Up] / [Down] button to adjust the setting parameter value.

Press the [OK] button to save the setting parameters, exit the setting mode, and return to the query mode.

Press the [Set] button to operate parameter shift.

Press the [Return] button to return to the [Real-time Display] menu.

3.10 Fault Display

[Fault display] adopts the method of fault code to display, and the fault code has been marked on the panel.

3.11 Fault Query

[Fault query] adopts the method of fault code and fault index to display, and the fault code has been marked on the panel.

Press the [Up] / [Down] button to query the fault records before and after.

Press the [OK] button to return to the [Real-time Display] menu.

Press the [Return] button to return to the [Real-time Display] menu.

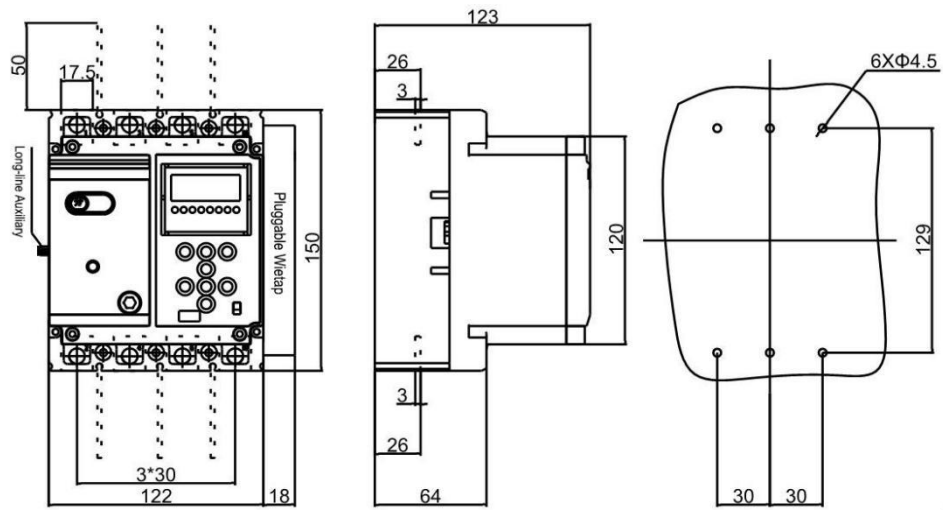
4. TECHNICAL FEATURES

4.1 Technical Parameter Table

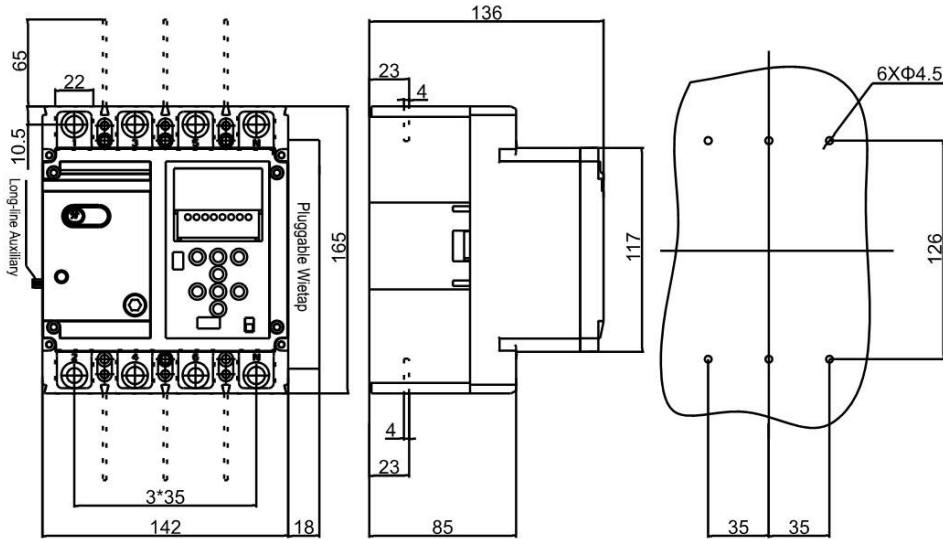
Specification		125	250	400	630
Case Current		125	250	400	630
Pole		3P+N	3P+N	3P+N	3P+N
Rated Voltage Ue (V)		AC 400 50HZ			
Rated Insulation Voltage Ui (V)		AC 800			
Rated Impact Withstand Voltage Uimp (V)		8000			
Arcing Distance (mm)		≥50	≥50	≥100	≥100
Limiting Short-circuit Breaking Capacity Icu (kA)		50	50	65	65
Operating Short-circuit Breaking Capacity Ics (kA)		35	35	42	65
Rated Residual Short Circuit Making (Breaking) Capacity IΔm(kA)		12.5	12.5	16.5	21.5
Residual Current Operating Characteristics		AC type			
Rated Residual Operating Current IΔn(mA)		50/100/200/300/400/500/600/800, automatic, OFF		100/200/300/400/500/600/800/1000, automatic, OFF	
Residual Action Time Characteristics		Delay type/ Non-delay type			
Breaking Time(s)	Delay type	IΔn≤0.5	IΔn≤0.5	5 IΔn≤0.15	10 IΔn≤0.15
	Non-delay type	IΔn≤0.3	2 IΔn≤0.15	5 IΔn≤0.04	10 IΔn≤0.04
The Delay Limiting Non-actuating Time (s)		2 IΔn: 0.06			
Auto-recloser Time (s)		20-60			
Operational Performance (times)	Power-on	1500	1000	1000	1000
	Power-down	8500	7000	4000	4000
	Total number of times	10000	8000	5000	5000
Overload and Short-circuit Characteristics		Three-stage protection, electronically adjustable, see "Description of Protection Characteristics" for details.			
Overvoltage Protection Value (V)		Set value (250~300)+5%, off by default			
Undervoltage Protection Value (V)		Set value (145~200)+5%, off by default			
Joint Control Delay Time (ms)		≤40ms			
Communication Delay Time		≤200ms			

(ms)

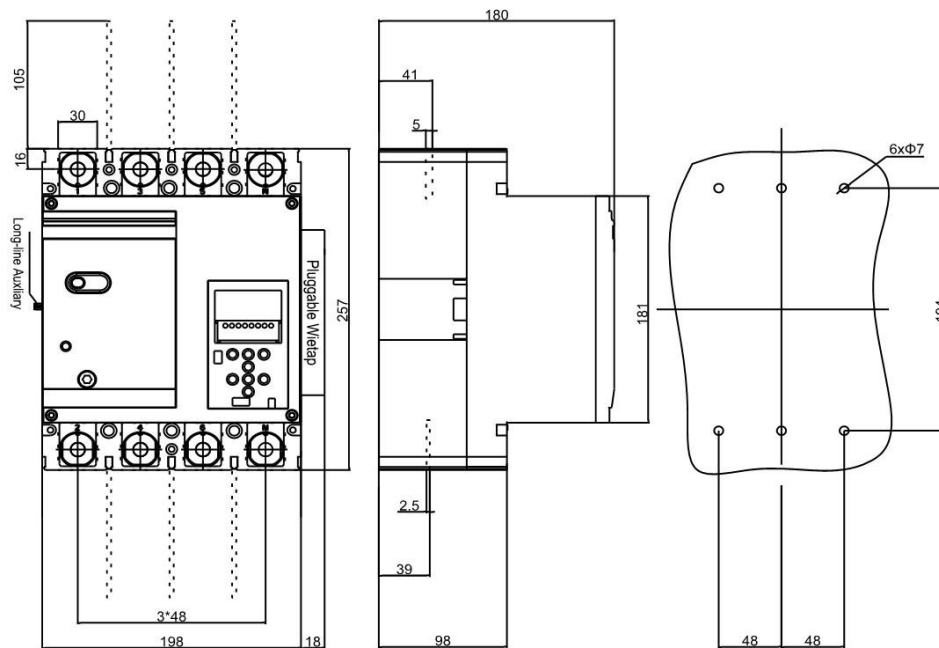
4.2Frame Size



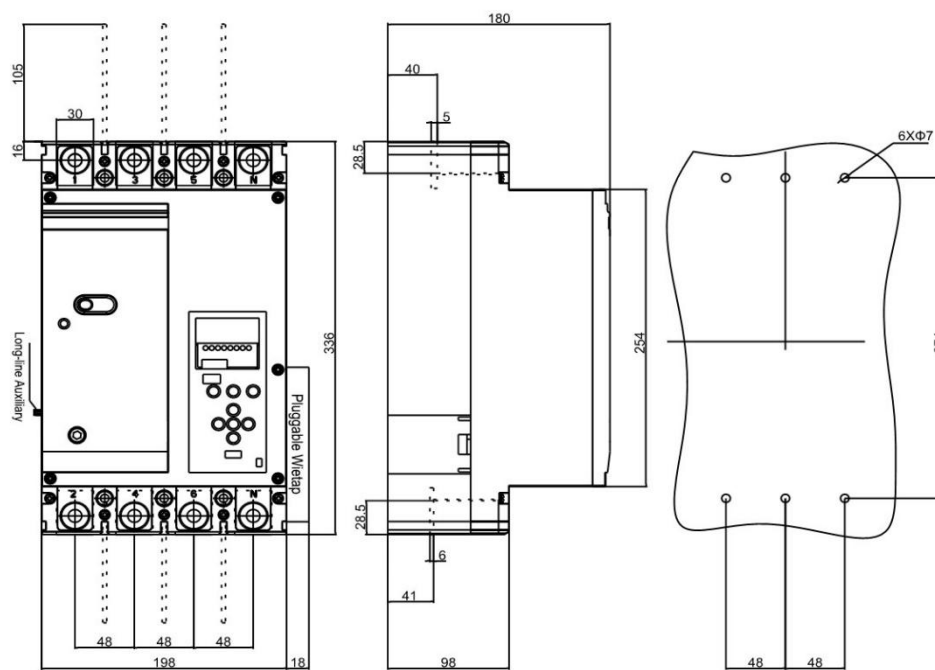
125



250



400



630

5. FAQ

Possible Problems	Possible Causes	Possible Solutions
The device has no display after adding control power	Power could not be added to the device	Check whether the correct working voltage is added to the L/+ and N/- terminals of the device, and check whether the control power fuse is burned out
Measured values are incorrect or do not match expectations	Incorrect voltage measurement	Check whether the neutral connection is reliable Check whether the measured voltage matches the rated parameters of the device Check whether the PT transformation ratio parameter setting is correct
	Incorrect current measurement	Check whether the measured current matches the rated parameters of the device Check whether the PT transformation ratio parameter setting is correct
	Incorrect power measurement	Check whether the measurement mode is set correctly Check whether the phase sequence of the voltage and current pairs is correct Check whether the current terminal with the same name is wrong
The host computer cannot communicate with the device	Incorrect communication address	Check whether the device address is consistent with the definition
	Incorrect communication rate	Check whether the device communication rate is consistent with the definition
	The communication link is not connected to the termination resistance	Check whether the 120 ohm resistor is added
	Communication link is disturbed	Check whether the communication shield is well grounded
	Communication line interrupted	Check whether the communication cable is disconnected

6. TECHNICAL SERVICE

MTM5 Anyone who purchases this Smart Reclosing Device MTM5 enjoys a 24-month warranty period from the date of purchase. During the warranty period, if the quality of the device itself affects the normal use, you can enjoy free repair and replacement, and the condition of paid service as follows: the improper use, drop, installation and wiring errors that cause irreversible damage. Besides, if you disassemble and modify the device yourself, you will not enjoy the warranty service.

If you have any questions about the operation or malfunction of the device, please contact Matis technical support service.

Statement:

- The information provided in this manual can be changed without prior notice.
- **Shanghai Matis Electric Co., Ltd. reserves the right to interpret the foregoing information.**



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