



User Manual

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1 *Package Content*

- TH100A 100Amp Current Interrupter
- Green 6 Foot Straight Lead with 27-C Clip (Item #33910)
- Dual 100Amp Power Cable (Item #SUB557)
- Sync Cable Assembly (Item #12845)

2 *Electrical Specifications*

Parameter	Rating
Max Input Voltage (DC)	150 VDC
Max Input Current (DC)	100 Amperes
Ambient Operating Temperature	-40°C to +80°C

3 *Introduction*

This chapter covers the items that you will need to know before using the TH100A, including the names of the physical parts and their functions.

3.1 *Overview*

Thank you for your purchase of the MC Miller TH100A Interrupter. To get the most of the TH100's functionality please read through this manual and make sure to store this manual somewhere where others who use the TH100A can read it.

3.2 Getting to know the TH100A



- | | |
|---------------------------|-----------------------|
| 1 Latch Button | 5 Power Button |
| 2 Relay Status LED | 6 Power LED |
| 3 Sync Jack | |
| 4 PE Jack | |

1. Latch Button – Activates the latch function
2. Relay Status LED – The Relay LED will blink to indicate the start of a cycle.
3. Sync Jack – Use for connecting to other MC Miller Interrupters for synchronizing of interrupting cycles.
4. PE – Protective Earth (only connect to Rectifier case).
5. Power Button – Turn ON/OFF main power of the interrupter.
6. Power LED – Power LED is multiple purposed and will change according to the status of the Interrupter.
 - a. When the interrupter is turned on the LED will be solid for 5 seconds and will pulse every 5 second.
 - b. When the power LED is flashing RED, the interrupter is detecting an overheat event. Please stop using the interrupter immediately.

4 Application

This chapter explains the procedures of getting the Android application as well as explaining the function of each parameter and how it effects the operation of the TH100A.

4.1 Getting the Interrupter Application.

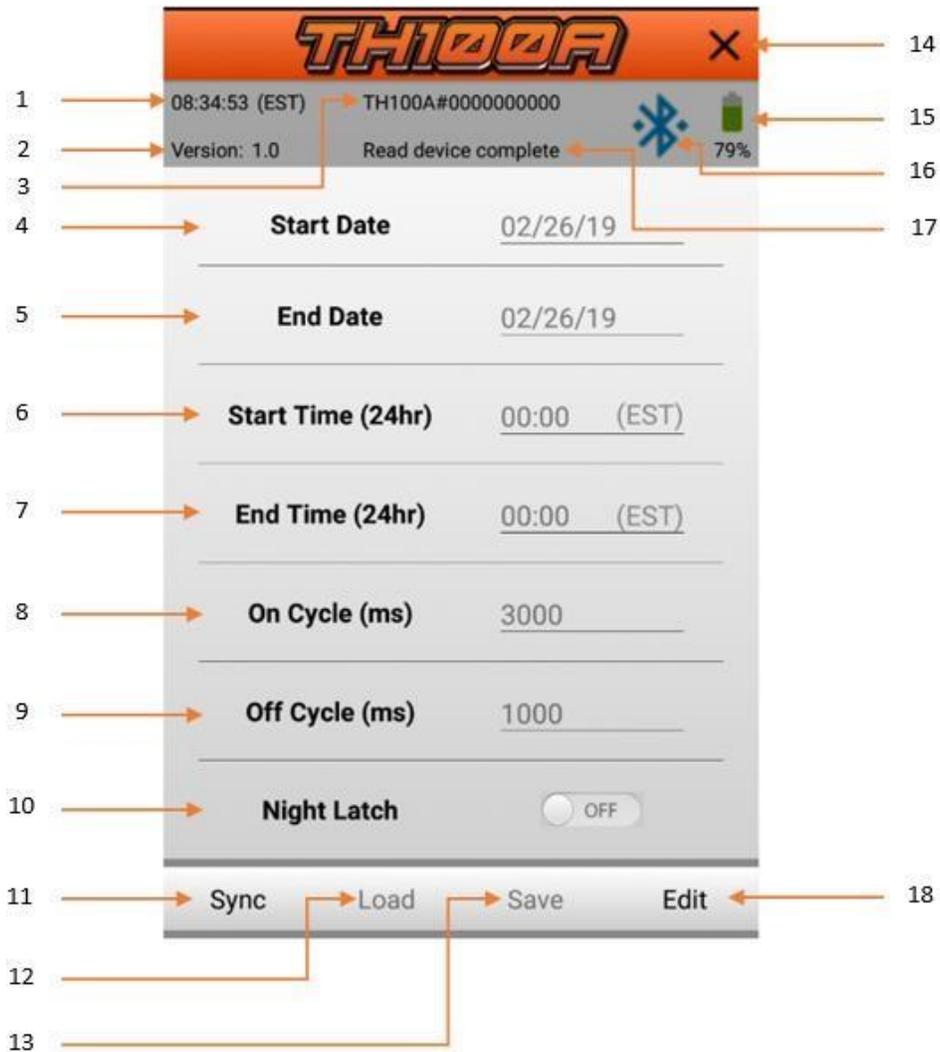
At the time of writing this manual, the application is at version 1.0. Please make sure your application is up to date by downloading the latest version at our MC Miller webstore. After downloading, install the application onto your Android device and it will be ready to connect to the interrupter. Please note that this application can be used for MC Miller's TH100A and JPL100 interrupters.

***The Android application only supports Android version 5.1.1 and above. Please make sure that your device meets this requirement.**

4.2 Getting to know the Interrupter Application



1 Device List



- | | | | |
|----------|-----------------------------------|-----------|------------------------------|
| 1 | Local time within Real Time Clock | 10 | Night Latch |
| 2 | Application Version | 11 | Sync Button |
| 3 | Device Name with Serial Number | 12 | Load Previous TH100A Profile |
| 4 | Start Date | 13 | Save Current TH100A Profile |
| 5 | End Date | 14 | Disconnect/Exit Button |
| 6 | Start Cycle Time | 15 | Battery Percentage |
| 7 | End Cycle Time | 16 | WPAN Indicator |
| 8 | On Cycle Duration | 17 | Application Status |

5 Basic Operation

5.1 Turning on the TH100A

To turn on the TH100A, push the power button on the front panel. After power button is pressed the power LED will stay solid for 5 seconds then flashes to indicate that the TH100A is running properly.

5.2 Connecting to TH100A

*** Do not attempt to connect to the interrupters with multiple Android devices at the same time.**

In order to connect to the TH100A through an Android device, the MCM Interrupter application must be installed on that tablet. Please refer to “Getting the Interrupter Application” section for instructions on downloading and installing the application.

If the application is already installed on the device, open the application by tapping on the MCM Interrupter application icon. After opening the application on the Android device, the application will automatically scan for nearby MCM Interrupters and populate the device list when done.

***During initial startup, a prompt will pop up asking for WPAN and Location services. Please authorize these permissions so the application can work properly.**

To connect to the chosen interrupter, simply tap on the device name and the application will attempt to connect to the chosen device.

If the connection to the interrupter is successful, the power LED will stay solid green and previously set parameters will start to populate within the application.

5.3 Setting the Parameters

TH100As will work out of the box with default settings that are set by MC Miller. All settings within the application can be changed to fit the requirement of the user.

In order to change any parameters for the connected interrupter, EDIT mode must be activate by pressing the “Edit” button on the application.

The screenshot shows the TH100A mobile application interface. At the top, there is an orange header with the 'TH100A' logo and a close button (X). Below the header, the status bar displays the time '08:34:53 (EST)', the device ID 'TH100A#0000000000', a Bluetooth icon, and a battery level of '79%'. The main content area is a list of configuration settings, each with a label and a value field:

- Start Date:** 02/26/19
- End Date:** 02/26/19
- Start Time (24hr):** 00:00 (EST)
- End Time (24hr):** 00:00 (EST)
- On Cycle (ms):** 3000
- Off Cycle (ms):** 1000
- Night Latch:** OFF (toggle switch)

At the bottom of the screen, there is a navigation bar with four buttons: Sync, Load, Save, and Edit.

5.3.1 Changing Start/End Date

To change the start/end cycling date, activate edit mode and press on the field that needs to be changed. After pressing on the corresponding field and a calendar will pop up with the current date of the Android device highlighted. Press on the date that you wish the interrupter to start/stop interrupting on and press ok.



5.3.2 Start/End Time

To change Start/End cycling time, press the respected field and type in the required time for the interrupter to cycle in. The time entered will be in the time zone that the Android device is in. For instance, MC Miller is in Eastern Standard Time (UTC-5) therefore the application will show “EST” at the end of the text field.

Start Time (24hr)	<u>00:00</u>	(EST)
End Time (24hr)	<u>00:00</u>	(EST)

5.3.3 On/Off Cycle

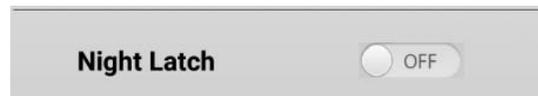
The On/Off cycle setting determines the On and Off cycles of the interrupter. The setting can be changed by the user through the application and will have to enter the cycle in milliseconds. For examples for a on cycle of 2seconds, the user will have to enter 2000 into the “On Cycle” field. The range of the On/Off cycle ranges from 50 milliseconds to 65,536 milliseconds.

1 second = 1000 millisecond

On Cycle (ms)	<u>3000</u>
Off Cycle (ms)	<u>1000</u>

5.3.4 Night Latch

The Night Latch function can be selected through the Android application. The function of the Night Latch is to latch the output to ON when the interrupter is within preset cycling date but not cycling time.



5.4 Latch

The latch button on the front panel is to latch the output to be always closed and will override all interrupting cycle settings. The latch button is located on the front panel. When the latch button is pushed, the latch LED will stay solid for 4 minutes and then flash with in synchronization with the power LED.

5.5 Save/Load Function

The SAVE function within the interrupter application are used to save current parameters of the connected interrupter to the applications internal memory for applying the same settings quickly for other interrupters of the same type. The LOAD function loads previously saved parameter of the same type of interrupter to the application helping the operator fill in settings on the application a 1 click process. Do not forget to press set on the application to send these parameters to the connected device. The saved parameter is device type specific; for instance, the LOAD button on a connect TH100A will only load previously saved TH100A parameters.

5.6 Synchronizing Multiple TH100A

-Warning-

If the TH100A is connected to the rectifier, make sure the rectifier output is OFF before attempting to sync to avoid injuries to the operator and damage to the equipment.

The TH100A can be synced to other interrupters when it is acting as the master. Do not attempt to sync a GPS sync interrupter using a TH100A as the sync master. Please follow the steps below to use the TH100A as a master.

1. Connect into each device via Android Application and ensure that all devices have the same parameters. If they are not the same, please change them to the desired setting. To make changing the parameters easier, use save and load function of the application. Please refer to “LOAD/SAVE Function” for detailed description of the functions.
2. Make sure all units are powered on and are cycling through its preset configurations.
3. Connect the devices together via a sync cable.
4. Connect to the master TH100A through the Android application.
5. Press the Sync button on the bottom of the application and it will prompt you to change the connection. Press “OK” when ready.

To make sure that the interrupters are synchronized properly, watch the latch status LED closely to make sure they blink at the same time. If the interrupters are successfully synchronized the latch LEDs on the interrupters should be synchronized as well. If they are not synchronized, please repeat the above steps.

5.7 Synchronizing JR-1/ JR-2 to TH100A

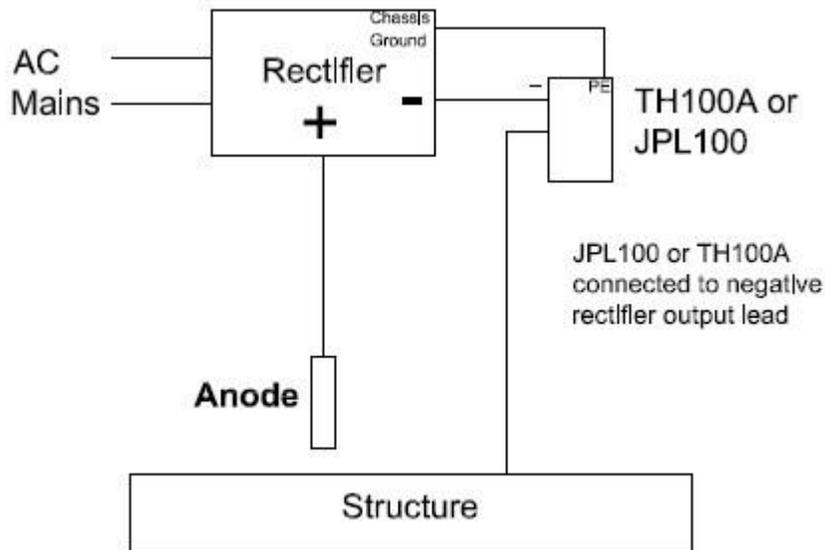
The sync capability is also backwards compatible with older generation MCM interrupters such as the JR-1 and JR-2. In order to sync the JR-1 and JR-2 with the TH100A please follow the steps below.

1. Configure the TH100A to the desired settings using the MCM Interrupter application.
2. Make sure that the TH100A is cycling through its preset configurations.
3. Turn on the JR-1 or JR-2 and let it initialize for usage.
4. On the JR-1/ JR-2 set “**START SET**”, “**STOP SET**”, “**ON CYCLE CLOSED**”, and “**OFF CYCLE OPEN**” parameters to the same value as the TH100A. The JR-1 start relay condition must be set to “**CLOSED**”.
5. Press “**CLOCK SET**” on the JR-1 and **DO NOT PRESS ENTER!**
6. Connect the sync cable from the TH100A to JR-1/ JR-2. Use the sync cable that came with the TH100A.
7. On the Android interrupter application, press Sync.
8. Make sure that the JR-1/ JR-2 display changes from “**LOCh06**” to “**LOCh01**” and will start cycling in sync with the TH100A.
9. Remove the sync cable.

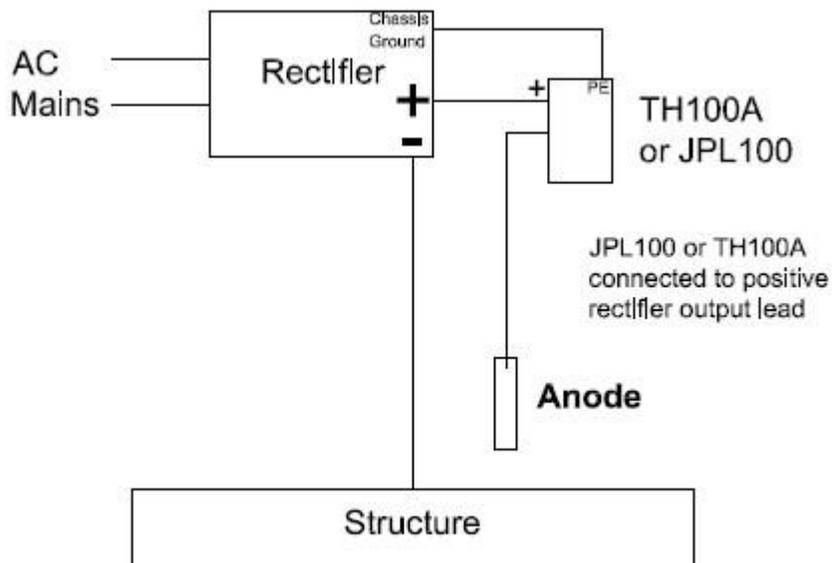
If for any reason, the JR-1/ JR-2 is powered off, please perform the above steps again.

6 Connection Diagrams

- Switching on the Cathode side



- Switching on the Anode side



7 Troubleshooting

7.1 TH100A Unit

Problem	Solution
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- Unit is not turning on.	- Change batteries. - Check power button is pushed in.
- Not cycling on power up.	- Make sure that the preset settings within the TH100A are properly set. - Check if Android device has the correct time.
- Latch is not working	- Check Latch button on the front panel is pressed.
- Red LED is flashing rapidly	- Unit is overheating, power down the unit immediately and call MC Miller support number.

7.2 Android Application

Problem	Solution
- Application is not finding my TH100A.	- Make sure the TH100A is powered on. - Place the TH100A closer to the Android Device.
- Can't change the setting on the application.	- Make sure to activate edit mode.
- Application froze up.	- Restart your Android device and reopen the Interrupter application.
- Application would not install on the device.	- Make sure the device is at or above Android version 5.1.1.

8 Regulatory Compliance

Federal Communications Commission (FCC) Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada (IC) Compliance Statement

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions:

1. this device may not cause interference, and
2. this device must accept any interference, including interference that may cause undesired operation of the device.

