KIT-ACS-20W-MRTU-01
(ACS-20W-MRTU Demo Kit)
User Manual

Version: 1.0, 2021.3.08

ICP DAS Co., Ltd.

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1. KIT-ACS-20W-MRTU-01 System Architecture

KIT-ACS-20W-MRTU-01 demo kit is composed of an ACS-20W-MRTU, a TouchPAD TPD-433F-H, an electromagnetic lock, an indicator light and a power supply. When performing the IR sensing on the ACS-20W-MRTU, the module will actively turn on its built-in relay to open the electromagnetic lock and turn on the indicator light, and meanwhile record the time stamps (current induction time and historical induction time) for reading by TPD-433F-H.

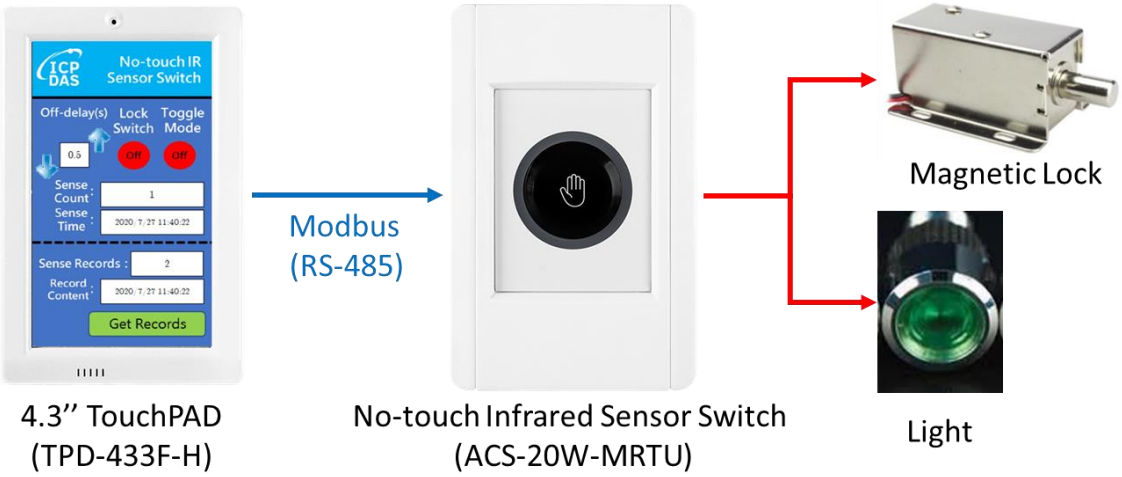


Figure 1-1: KIT-ACS-20W-MRTU-01 System Architecture

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2. System Wire Connection

2.1. KIT-ACS-20W-MRTU-01 System Wire Connection Diagram

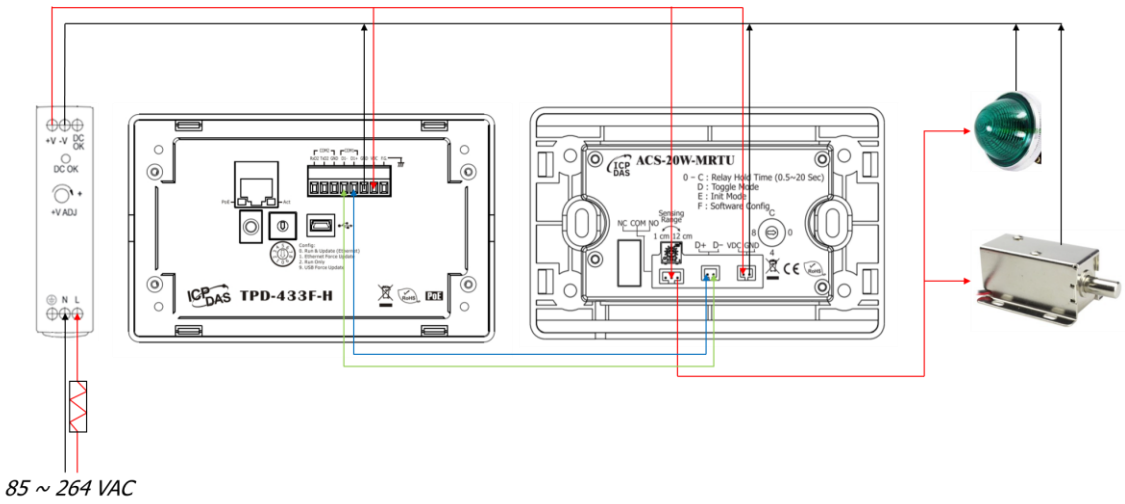


Figure 2-1: KIT-ACS-20W-MRTU-01 wire connection diagram

2.2. Power Supply Wire Connection

Wire connection of the power supply (MDR-20-24) is depicted in the following figure.



Figure 2-2: Power supply wire connection

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2.3. TouchPAD Wire Connection

Wire connection of the TouchPAD (TPD-433F-H) is depicted in the following figure.

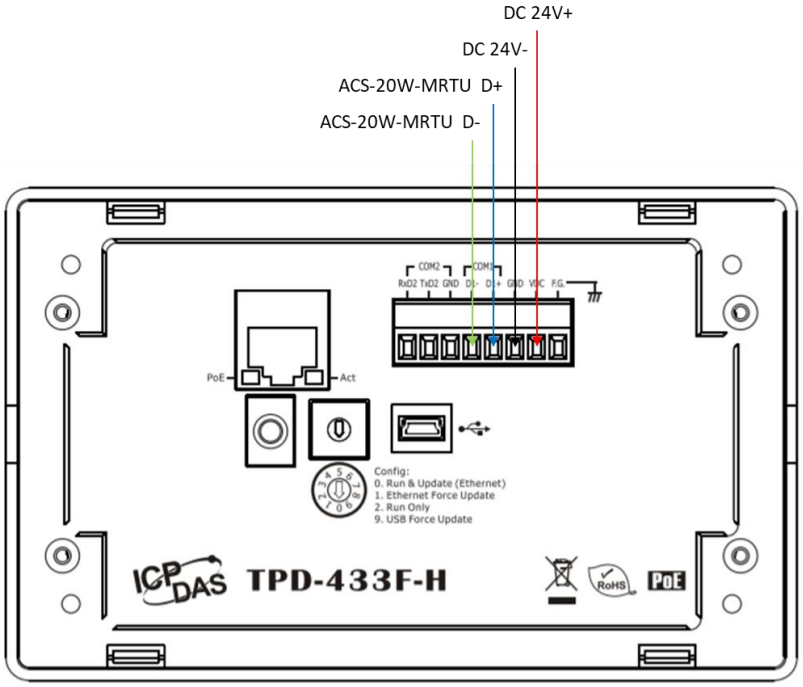


Figure 2-3:TPD-433F-H Circuit diagram

2.4. ACS-20W-MRTU Wire Connection

Wire connection of the ACS-20W-MRTU is depicted in the following figure.

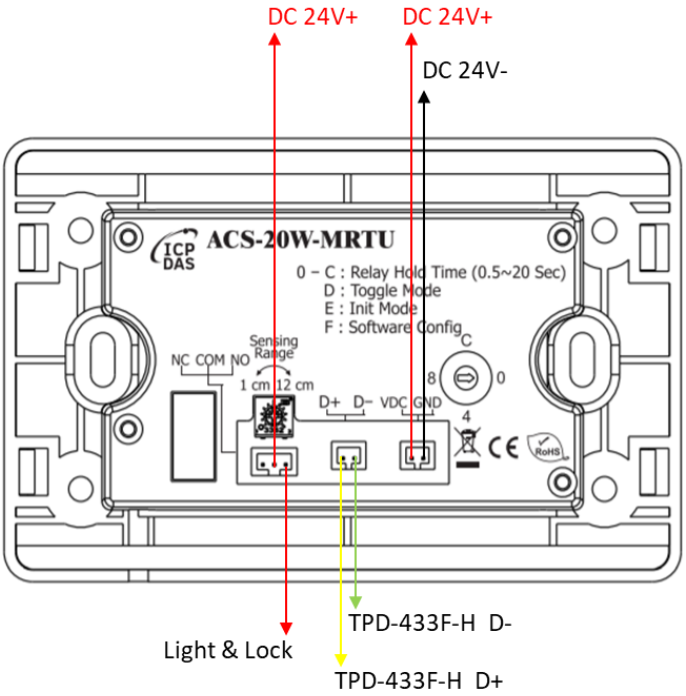


Figure 2-4:ACS-20W-MRTU circuit diagram

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3. HMIWorks Software Design

HMIWorks is the IDE software of the user interface for the TPD-433F-H. A download link of the HMIWorks demo project for KIT-ACS-20W-MRTU-01 is provided in chapter 4.

3.1. KIT-ACS-20W-MRTU-01 TouchPAD UI function

3.1.1. User Interface of System Language Selection

The language selection interface (Figure 3-1) provides Chinese and English options, allowing users to select the desired system display language function.

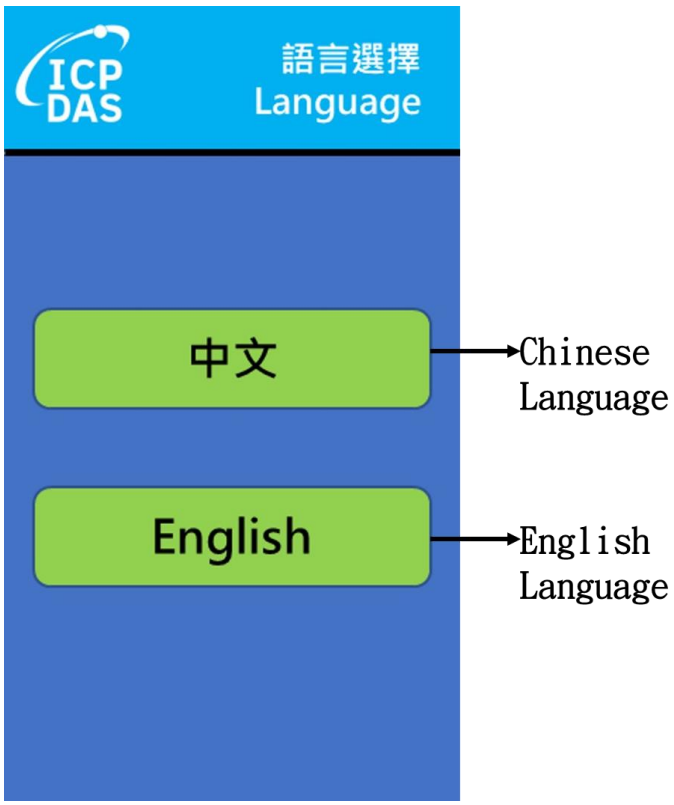


Figure 3-1: Language selection interface

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3.1.2. System Main Interface

The system main interface (Figure 3-2) provides function demonstration on the ACS-20W-MRTU. The system main interface reads and writes settings of the ACS-20W-MRTU through Modbus RTU protocol (RS-485), including off-delay(s)(i.e. relay hold time), locked switch, toggle mode, current number of sensing, current sensing time, number of historical sensing time records, read historical records and display/clear historical records. RTC time of ACS-20W-MRTU can be modified by clicking the ICP DAS icon on the upper left corner(Figure 3-2) to open the RTC setting interface (Figure 3-3).

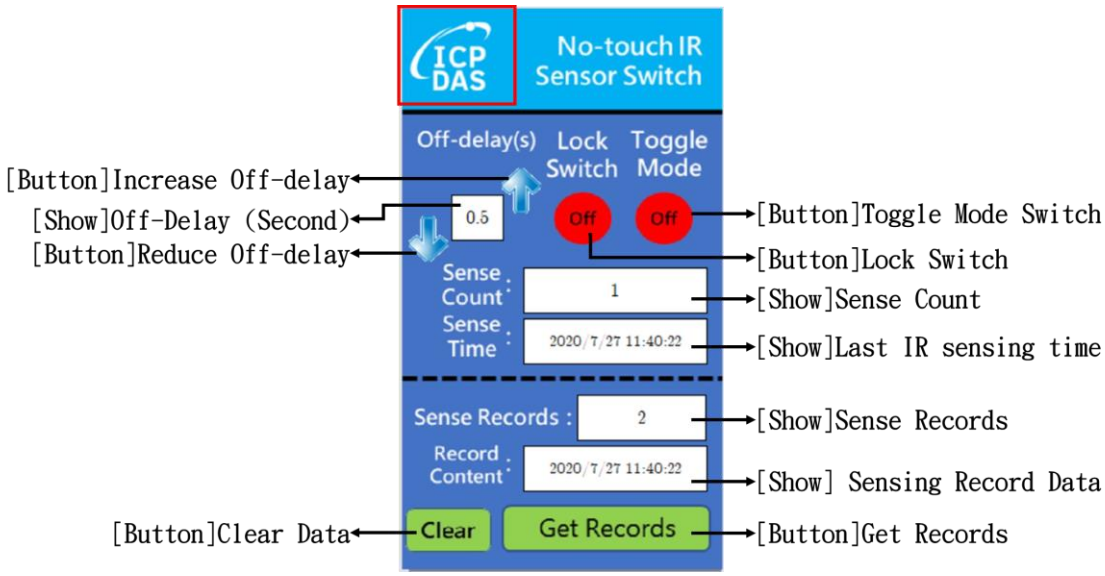


Figure 3-2: Function descriptions of Main Interface

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3.1.3. RTC setting UI

The RTC setting UI (Figure 3-3) provides the function to modify the RTC time in the ACS-20W-MRTU.

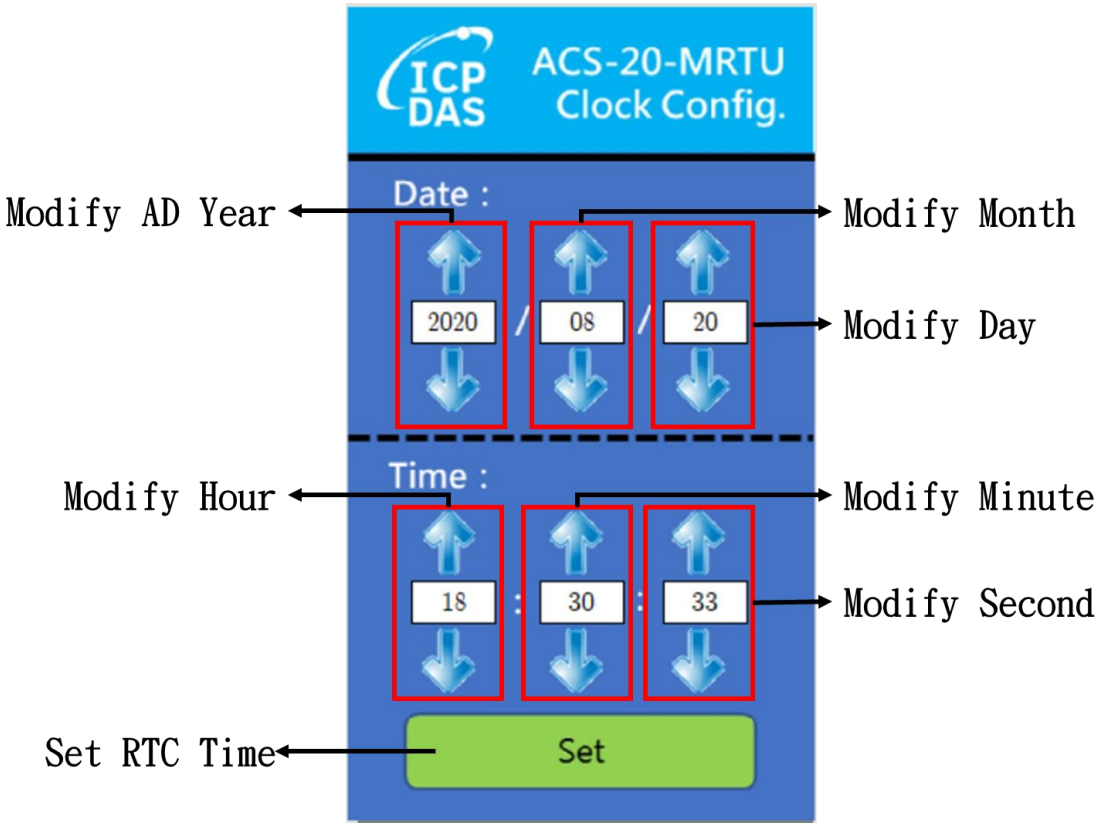


Figure 3-3: Setting UI of RTC Time

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3.2. TPD-433F-H Program Flow Introduction

3.2.1. Read Data from ACS-20W-MRTU

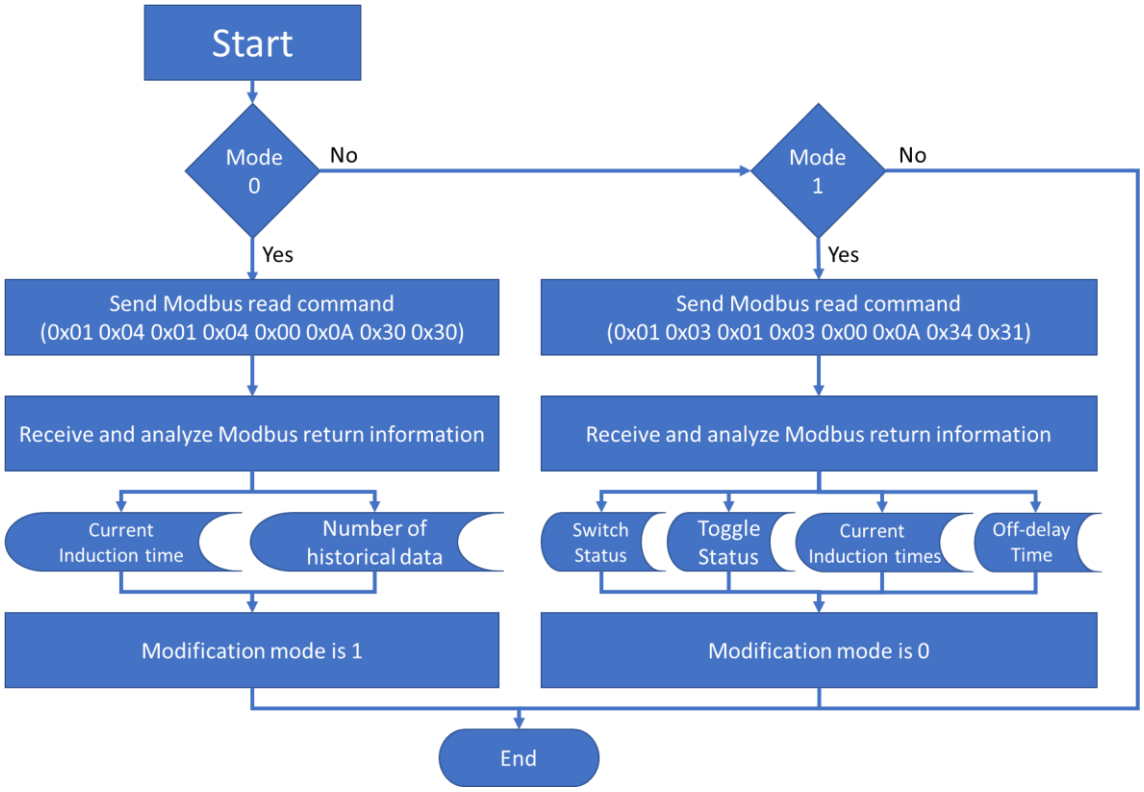


Figure 3-4: Flow char of reading data from ACS-20W-MRTU

3.2.2. Data Display of Main UI

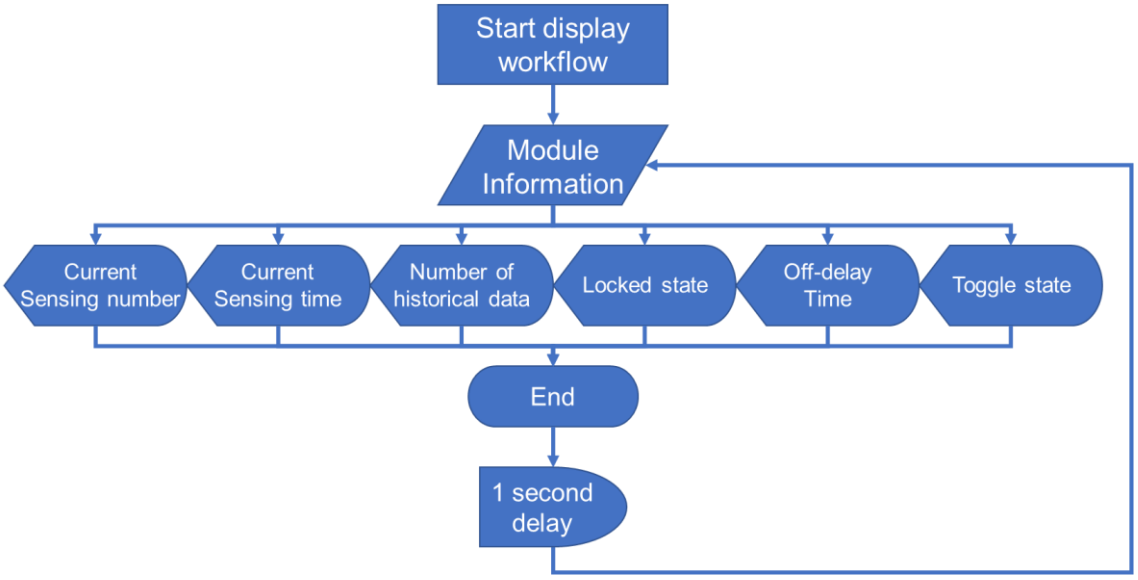


Figure 3-5: Data Display Flow Chart of Main UI

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3.2.3. Increase Off-delay Button

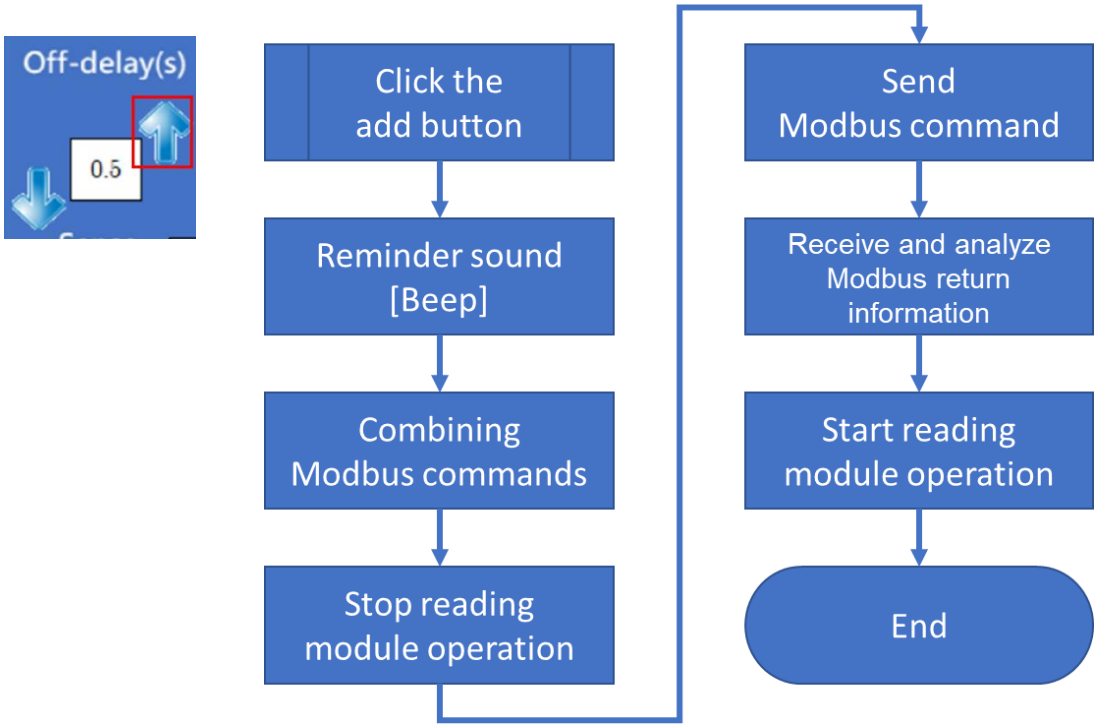


Figure 3-6: Flow chart of increasing Off-delay

3.2.4. Reduce Off-delay Button

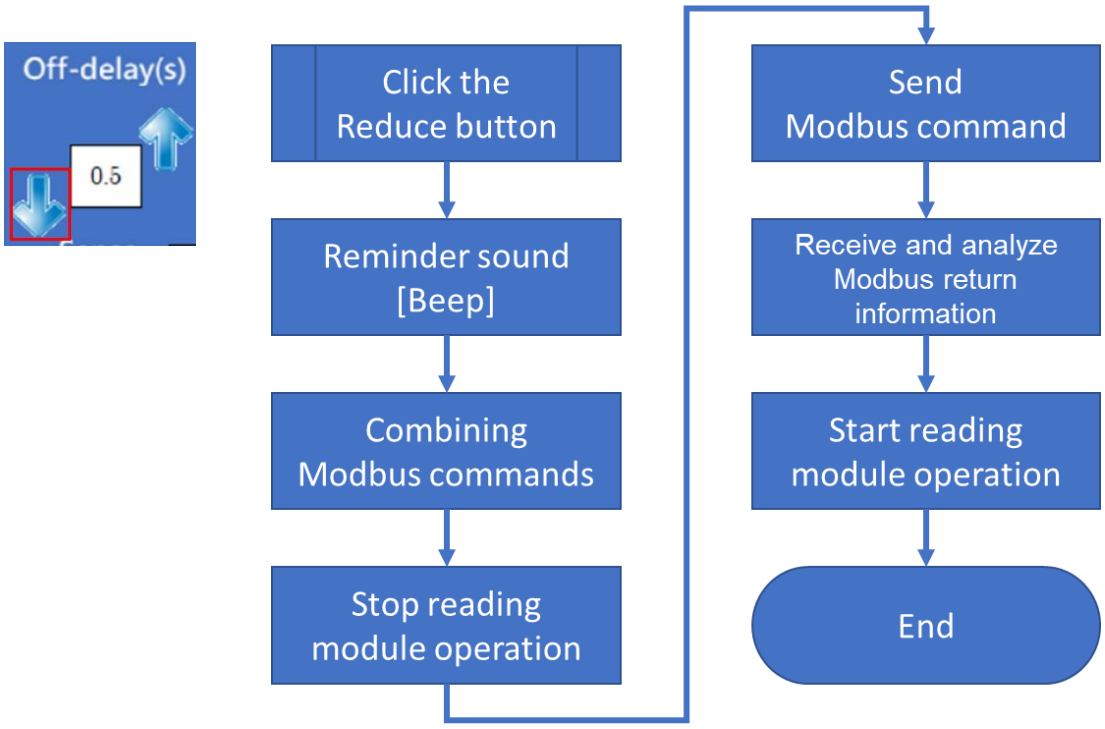


Figure 3-7: Flow chart of reducing Off-delay

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3.2.5. Lock Switch Button

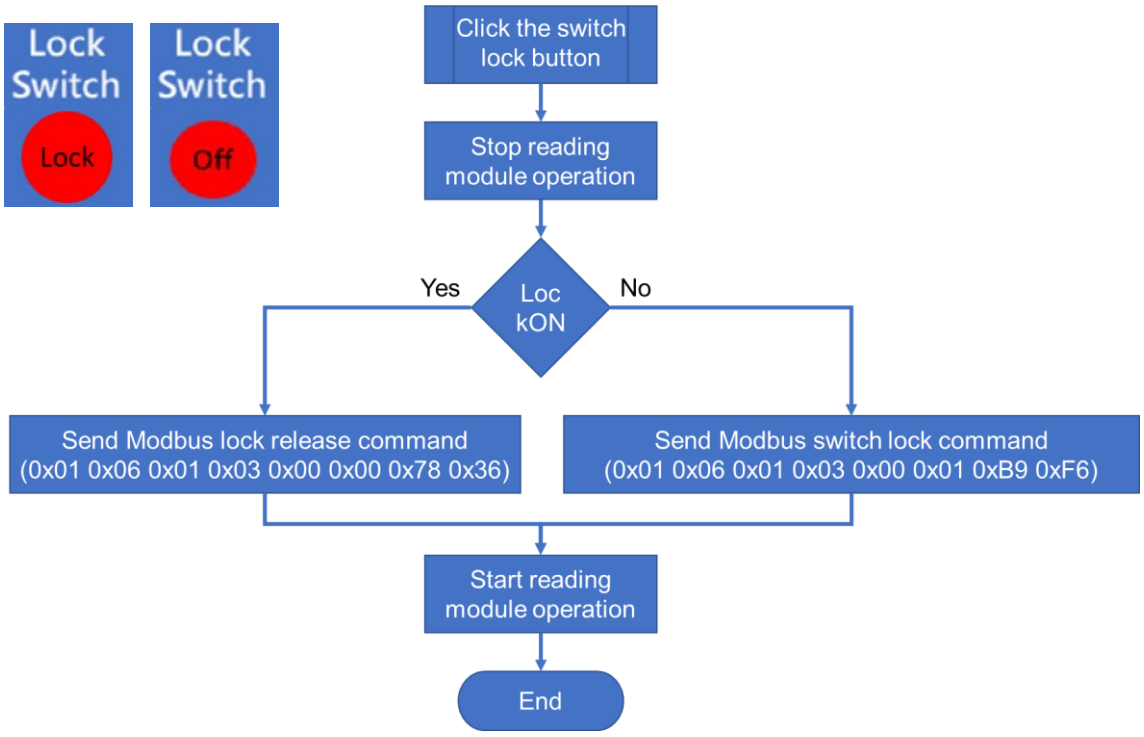


Figure 3-8: Flow chart of lock switch button function.

3.2.6. Toggle Mode Button

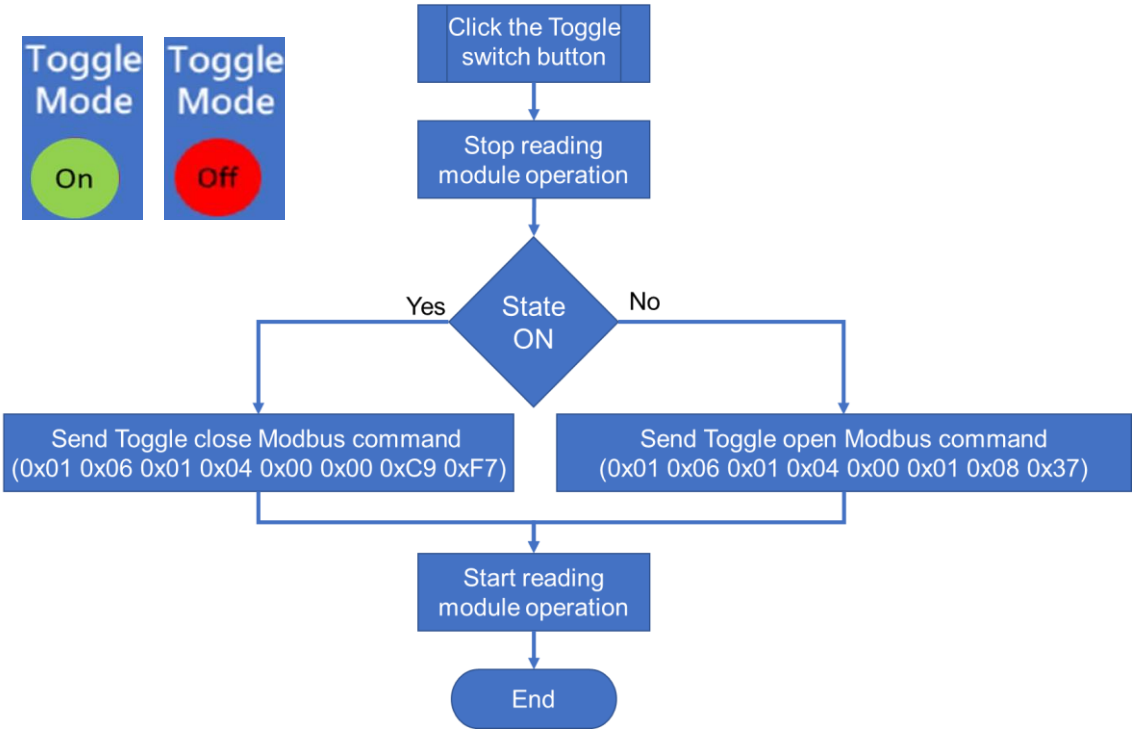


Figure 3-9 : Flow chart of Toggle Mode button function

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3.2.7. Read Stored Sensing Records Button

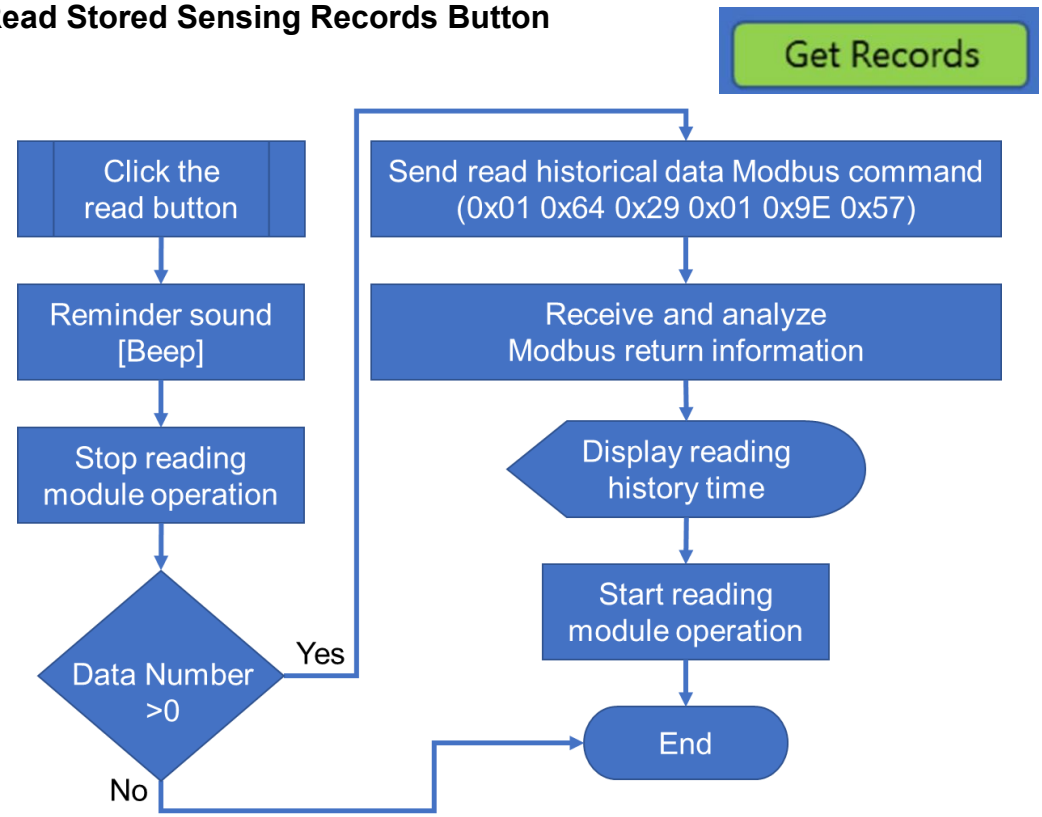


Figure 3-10: Flow chart of reading stored records.

3.2.8. Clear Stored Sensing Records Button

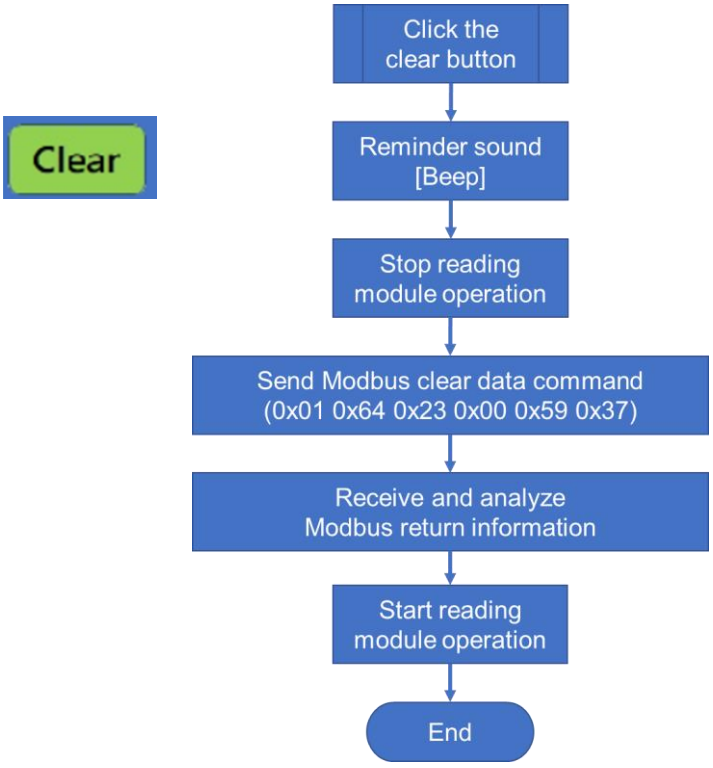


Figure 3-11: Flow chart of clearing stored records.

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3.2.9. Increase/Decrease RTC DateTime Buttons

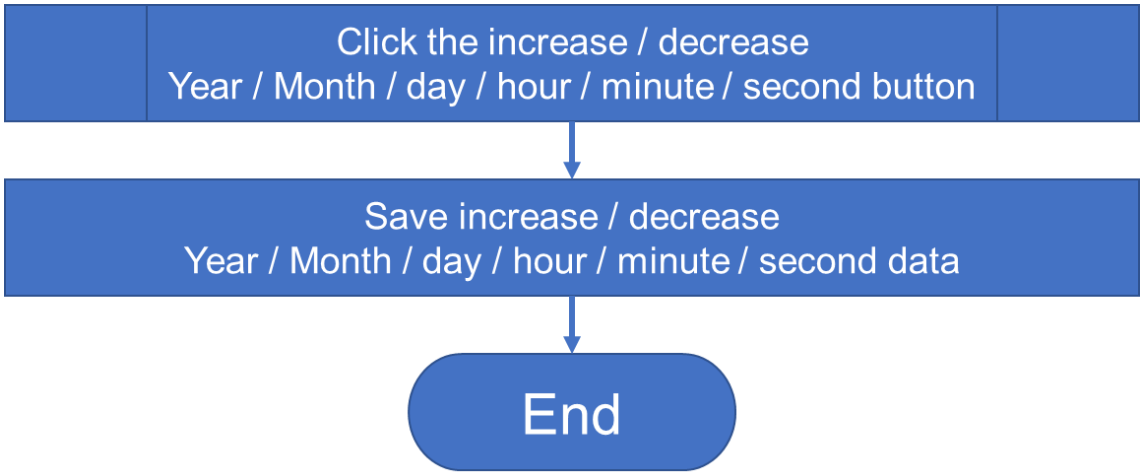


Figure 3-12: Flow chart of increase/decrease date time buttons

3.2.10. RTC Date Time Setting

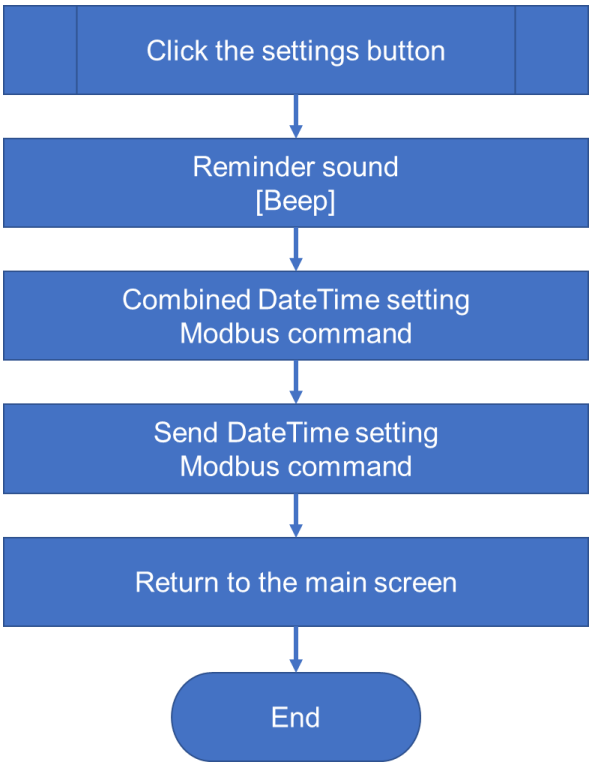


Figure 3-13: RTC date time setting flow chart

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4. Reference Materials

4.1. 4.3”TouchPAD Device

- TPD-433F-H：Device Information

4.2. Non-touch IR Sensor Switch Device

- ACS-20B-MRTU：Device Information
- ACS-20W-MRTU：Device Information

4.3. KIT-ACS-20W-MRTU-01 HMIWorks Demo

- Demo Project：Download Project

4.4. HMIWorks Software：

- HMIWorks： Product link

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5. Appendix. Revision History

This chapter provides revision history information to this document.

Table A-1: Revision History

Version	Date	Description of changes
1.0	2021-3-08	The First Release Revision

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