Smart Card Reader & Writer Software Manual

Model Name : PRG2000 & SR RW Series

Rev.1.02.02
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1. Install Smart Card Reader & Writer Software

1. Insert CD provided in CD-ROM driver, and find <install>-folder.
2. Run Setup.exe doing double click inside folder and install it.
3. Install by guide of InstallShield Wizard.
4. After finishing to install, run “Smart Card Read / Write Software Rev.1.02.02” clicking button.
2. Communication Setup of Smart Card Reader & Writer Software

Communication setup is as shown below.

Finishing to install Smart Card Read / Write Software, you should set up communication port.

1) Run “Communication Setup” on the main window. And then select Com Port, Baud Rate, Parity Bit, Data Bit and Stop Bit.
2) Save “Communication Setup” clicking “Save” button. (Refer to below.)
3) Close the application software and run again.
(Only when you use first, you should set “Communication Setup”.)

3. Overall Menu Configuration of Smart Card Reader & Writer Software

Overall menu configuration is as shown below.

※ In case of choosing MIFARE MAP
General menu reads or writes card simplifying process of card management for higher user's convenience. General menu can set on Auto Mode ([Serial Data], [Block Data]) and Manual Mode. Besides General menu can read Serial Number and desired block data internal card and write desired data in set block also.

Advance menu can detail process of card management and use by various purposes. When you convert to “Advance” tab, mode selection will be changed by Manual Mode automatically. Moreover all functions (Read/Write) of used Manual Mode in General Menu can be usable.

※ In case of choosing MIFARE MAP
- **Access Control**

  "Access Control" issues, reads and initializes a card for access control. That is it can set up Access Control Menu of SR RW Series. And it supports Wiegand 26 or 34bit which use frequently on Access Control Menu. Besides anytime it can confirm them saving the issue information of a card on database.

  * Wiegand Output System
    - Wiegand 26bit Output – FAC (1Byte) + ID (2Byte)
    - Wiegand 34bit Output – ID (4Byte)

- **Debt Meal**

  "Debt Meal" issues, reads and initializes a card for debt meal. That is it can set up Debt Meal Menu of SR RW Series. Besides anytime it can confirm them saving the issue information of a card on database.
“Cashless Payment” issues, reads and initializes a card for cashless payment. That is it can set up cashless payment areas of SR RW Series. When user commands for RW Reader Setting in Cashless Payment Menu, user fixes a price on its amount and then user can pay choosing prepaid or credit. Besides anytime it can confirm them saving the issue information of a card on database.
※ Refer to Smart Card Read / Write Software for detail usage.

4. General Menu of MIFARE MAP

The Configuration of General Menu

→ Sector / Block
  ① Sector or Block: Drop down list to select Sector/Block inside card
  ② Data: Field to enter sector / block value
→ Mode Selection
① Manual Mode
② Auto Mode[Serial Data]
③ Auto Mode[Block Data]
※ Mode option button is not choice but display.
   Mode is changed according to click Mode option button.

→ Command
① KEY A, KEY B: Option button to be authorized by using KEY A or KEY B
② KEY VALUE: Field to input 12 digit of hexa value.
③ Load Key: Command button to load “Key Value”
④ Serial Number: Field to show when you are successful to command as “Read Serial Number”.
⑤ Read Serial Number: Command button to read a serial number of card
⑥ Read Data: Command button to read a block data of card
⑦ Write Data: Command button to write a block data of card
⑧ RW Reader Setting: Command button to set up RW Reader
⑨ Request State: Command button to display setup of PRG2000 on “Send / Receive State”

→ Send / Receive State
“Send / Receive State” displays the result of individual command.

Auto Mode [Serial Data]
Applying power, SR RW series are set to operate on Auto Mode [Serial Data].
If SR RW series is communicated with Smart Card Reader & Writer Software, Auto Mode [Serial Data]
will be changed by Manual Mode. (Reference 2.Communication Setup)

※ Set on Auto Mode [Serial Data]
If you choose “Auto Mode [Serial Data]” on Mode Selection, mode will be changed by Auto Mode
automatically.
If card is approached by PRG2000 on Auto Mode [Serial Data], SR RW will read serial data and send it to RS232 communication automatically. Serial data appears on Send / Receive Status as shown below.

If you choose to manual mode on mode selection, it will be changed by manual mode.

※ Caution
When you convert to manual mode and do to read / write card, you make a card approach to PRG2000 and give a command. We recommend to place in the central of the PRG2000.

※ Read Serial Number
If you click to button, serial number will be displayed as shown below on “Send / Receive State”. Serial number also is displayed in the field of serial number.
※ **Read Block**

1) Choose to read sector and block.

```
Sector | Block
-------|-------
 1     |  5   
```

☞ **Caution**

MIFARE has the memory of 1KByte and 4KByte.

<table>
<thead>
<tr>
<th>1KByte</th>
<th>4KByte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector : 0 ~ 15</td>
<td>Sector : 0 ~ 39</td>
</tr>
<tr>
<td>Block : 0 ~ 63</td>
<td>Block : 0 ~ 255</td>
</tr>
</tbody>
</table>

2) Set up “KEY VALUE”

Send key value to PRG2000 clicking [Load Key] button to read block data which you have selected.

“KEY VALUE” is used on authentication process and has KEY A and KEY B.

Basically MIFARE card is set by FFFFFFFF (6 Byte).

If key value is incorrect in authentication process, PRG2000 can’t read block data.

(Contact manufacturer if default key value is different)

```
KEY A ^ KEY B ^ KEY VALUE 000000000000
```

※ **We recommend Mifare Standard Card IC MF1 IC S50 Datasheet** to know detail articles about key value setup and modification method.

(Mifare Standard Card IC MF IC S70 is datasheet of 4KByte card.)

3) If you finish to set up sector, block and key value, you make application software read block data clicking [Read Data] button.

16Byte Data is displayed by “Send / Receive State” and “Data”.

```
Send / Receive State

Data

000000000000000000000000
```

※ **Write Data**

1) Read to desired block data. “Write Data” writes or modifies data in the field of “Data”.

```
Data

000000000000000000000000

→

Data

111111111111111111111111
```
2) Write data on appointed block clicking Write Data button.
3) If PRG2000 reads again block data, you can confirm to modified block data on “Send / Receive State” and in the field of “Data”.

※ Request State

If you click Request State button, stored sector, block and key value will be displayed on “Send / Receive State”.

Algorithm:

```
[RX] 02 00 03 04 FF FF FF FF FF
```

Don’t care

Sector/Block

Key Value

- \(01 = \) Key A, \(02 = \) Key B
- \(01 = \) Auto mode[Serial Data]
- \(02 = \) Auto mode[Block Data]
- \(03 = \) Manual mode[Block Data]

Auto Mode [Block Data]

When card approaches to PRG2000, “Auto Mode [Block Data]” reads sector and block which have been set. And then “Auto Mode [Block Data]” sends it to RS232 Communication.

※ Setup on Auto Mode [Block Data]

This sets up sector and block to read automatically on manual mode.

If you click “Auto Mode [Block Data]” option button on mode selection after setting correct key value, mode will be set on “Auto Mode [Block Data]”.

If you make a card approach after setup, appointed block data will be displayed automatically on “Send / Receive State”.

5. Advance Menu of MIFARE MAP

Advance Menu Configuration

<table>
<thead>
<tr>
<th>Buzzer Control</th>
<th>LED Control</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OK</td>
</tr>
<tr>
<td></td>
<td>OK</td>
</tr>
</tbody>
</table>

→ Buzzer / LED Control
1. Drop down list to select buzzer on/off
2. Drop down list to select LED on/off

→ Subdivision Process – 1 (Select card)
Subdivide using commands on general menu and give a command by steps.
- Idle Request [1]
- Wakeup request [2]
- Anticollision [3]
- Select [4]
- Halt [5]

→ Subdivision Process – 2 (Authentication)
1. Load Key - Set KEY VALUE
2. Authentication - Select Sector/Block to authenticate
3. Authentication Key [9] - Select Sector/Block and authenticate to Key Value

→ Read/Write
This can read or write to sector and block data.
Load Key E2 [10] – Save key value in EEPROM internal MF RC500 of SR RW.

Authentication E2 [11] – Authenticate selecting Block internal card and Block of saved EEPROM.

Value Transfer [8]

→ Value Transfer [8]
Value Block Mode - Drop down list to select value block mode
Value Block Number – Drop down list to select block which has been set to value block
INC or DEC – Field to set increment or decrement value.
Transfer Block Number – Drop down list to select block which will save increment or decrement value

※ Reference

- Above figure shows card management process by flow-chart among Mifare Standard Card MF1 IC S50, S70 Datasheet.

※ Please refer to Mifare Standard Card IC MF1 IC S50, S70 Datasheet for more detailed matters.
Buzzer / LED Control

If you set on buzzer, buzzer will sound according to normal and abnormal process. If you set off buzzer, buzzer will not sound any operations.

If you set on LED, 4 LEDs operate according to normal and abnormal process. If you set off LED, all of 4 LEDs will be on despite any operations.

Subdivision Process – 1 : Select

Able to give a command by steps subdividing commands used on general menu.

※ Please refer to flow-chart of Reference (Page 14)

- **Idle Request [1]**
  - Confirmative command to “Yes or No” card within read range.
  - Have been halted card is unrecognized.

- **Wakeup Request [2]**
  - Able to wake up stopped card by Halt and other cards within read range and then to recognize.
  - Next woke cards receive S/N (Serial Number) through anticollision. By turns you can process to next step.

- **Anticollision [3]**
  - You can receive S/N (Serial Number) of card within read range. At this time S/N will be displayed on Card Serial NO of Select. [4].

- **Select [4]**
  - Select Card Serial NO same as serial number of Anticollision [3].

- **Halt [5]**
  - Make a selected card stop with result of Select [4].
  - And Halt [5] is used when you make other card recognize.
  - Before giving a “Wakeup Request [2]” again, halted card still stops.
  - If card gets out of read range, halt state will be released.

☞ Caution

If order isn’t right from Idle Request [1] to Select [2], normal operation will not be completed.
When errors occur, restart to return first.

※ Please refer to Reference (Page 14)
Subdivision Process – 2 : Authentication

After Select [4], you have to pass by Authentication.

(1) **Load Key** sets up key value for (2) **Authentication**.
(2) Authenticate selecting the memory (Sector and Block drop down list) of internal card.
(3) By (1) + (2), Authentication Key [9] selects the memory (Sector and Block drop down list) of internal card. And then this authenticates selected field by key value.

※ If Authentication is completed normally, functions of Read/ Write/ Increment/ Decrement etc. can be used.

☞ Caution
If normal command doesn’t execute in process of Request → Anticollision → Select → Authentication, functions of Read/ Write/ Increment/ Decrement could not be used. Please refer to error message.

Read / Write

After authentication is finished successfully, Read or Write is usable.

※ Read

Management process passes as shown figures.
In Authentication, authenticate selecting Sector and Block.
In Read/Write [7], if you select Sector and Block and then click **Read** button, corresponding to data will be displayed.
Smart Card Reader & Writer Software

Data will be displayed on “Send / Receive State”.  

Caution  
In case of 1Kbyte Mifare card, 4 blocks exist per 1 sector. Passing by Authentication, 4 blocks internal sector can give a Read without another authentication.

※ Write  
After executing Read, you can give a Write.  
Authentication is successfully finished and then Write is possible rightly.

In Read/Write [7], if you select Sector and Block and then click Write button, corresponding to data will be displayed.

If OK message appears on “Send / Receive State”, you should click Read button and confirm data.  
If normal operation is completed, wrote data will be displayed on “Send / Receive State”.

Caution  
Among 4 blocks per 1 sector, 3 data blocks pass by authentication one time and are possible to read / write except sector trailer (the highest block of ascending). But it is impossible that card is out of read range.

※ The highest block of ascending in each sector is named sector trailer. And it contains access condition of data block and key value. No experts recommend that this block is permitted to write because of destroying card data.

→ Card Confirmation  
S/N Detection  
Card Selection

Mangement process passes as shown figures.  
In Authentication, authenticate selecting sector / block.

Authentication

→ Send / Receive State
Increment / Decrement

When you set from data block to value block, you give a increment / decrement.
Please refer to Mifare Standard Card IC MF1 IC 50 Datasheet to set Value Block.

- “Value Block Mode” has “Decrement, Increment and Restore”.

<table>
<thead>
<tr>
<th>Value Transfer (8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Block Mode</td>
</tr>
<tr>
<td>Decrement</td>
</tr>
<tr>
<td>Increment</td>
</tr>
<tr>
<td>Restore</td>
</tr>
</tbody>
</table>

- Above figure increases 00000001 to data of Value Block Number 5 and sets to save Transfer Block Number 5.
If you click [OK] button, data will be increment.

<table>
<thead>
<tr>
<th>Value Transfer (8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value Block Mode</td>
</tr>
<tr>
<td>Value Block Number</td>
</tr>
<tr>
<td>Inc or DEC</td>
</tr>
<tr>
<td>Transfer Block Number</td>
</tr>
<tr>
<td>Increment</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>00000001</td>
</tr>
<tr>
<td>OK</td>
</tr>
</tbody>
</table>

- Above figure decrease 00000001 to data of Value Block Number 5 and sets to save Transfer Block Number 5.
If you click [OK] button, data will be decrement.

※ Restore is to transfer data in Transfer Block Number from data selected in Value Block Number.

Setting and Usage of EEPROM

Load Key E2 (10)

You can use to save KEY VALUE in EEPROM internal MF RC500 IC.
You can pass also by authentication using this saved KEY VALUE.

Authentication E2 (11)

Select 1 key number of 16 key numbers in EEPROM (0~15) and save key value.
Authentication E2 [11] authenticates selecting Block and Key_Number in EEPROM.

6. Access Control

Access Control Configuration

Access Control Code
Save code to divide issuing data for access control.

Name
Save name of persons issued for access control.

Wiegand Output Bit
According to value selected on “Wiegand Output Bit”, Wiegand Output Bit is decided when card is reading. And the length of Card ID is changed by Wiegand Output Bit.
- If Wiegand Output Bit is ‘0’, there is no Wiegand Output.
- If Wiegand Output Bit is ‘26’, Wiegand Output will be 26bit.
- If Wiegand Output Bit is ‘34’, Wiegand Output will be 34bit.
→ Additional Information 1 / 2
   Save additional information about issuing card for access control.

Access Condition

→ Access Condition
   Decide to read / write condition as KEY A or KEY B. The condition is as shown below.
   No.0 : Able to read / write as KEY A.
   No.1 : Able to read / write as KEY B.
   No.2 : Able to read / write as KEY B.
   No.3 : Able to read / write as KEY B. (Default value on Application 3)
   No.4 : Able to read / write as KEY B.

   → KEY A, KEY B
   KEY A and KEY B play a role of password which is possible to read / write.

   → RW Board ID
   If readers between No.0 and No.31 are connected by RS485 and reader output is set by RS485,
   you can set to reader at once when you set RW Reader.

Card Encoding

Card Encoding is function to write data for access control with card.
First you make a card place within read range of PRG2000 and then give a command. We recommend that you make a card place in the central of PRG2000.

※ In case of trying first card encoding
1. Enter to Access Control Code and Name.
2. Enter to Wiegand Output Bit and Card ID.
   (But you should enter whether yes or no data in the field of Additional Information1 / 2)
3. Enter to “Access Condition”, “KEY A” or “KEY B”.
4. Run pressing “Card Encoding”.
   (Then application software saves automatically on database.)

※ In case of trying again card encoding
1. Initialize a card pressing “Card Reset” button.
2. Enter to Access Control Code and Name.
3. Enter to Wiegand Output Bit and Card ID.
   (But you should enter whether yes or no data in the field of Additional Information1 / 2)
4. Enter to “Access Condition”, “KEY A” or “KEY B”.
5. Run pressing “Card Encoding” button.
   (When saved data exists already, you should save after confirming.)

Card Reading

Card Reading is function to confirm data of encoded card.
**Card Reading**

1. Enter to “Access Condition”, “KEY A” or “KEY B”.
2. Run pressing “Card Reading” button.

**Caution**

When information entered on “Access Condition”, “KEY A” or “KEY B” are different with information of encoded card, it isn’t reading a card.

**Card Reset**

"Card Reset" removes data encoded on a card, and then initializes it.

**Card Reset**

1. Enter to Access Condition, KEY A or KEY B.
2. Run pressing “Card Reset” button.

**Caution**

When information entered on “Access Condition”, “KEY A” or “KEY B” are different with information of encoded card, it isn’t reading a card.

You can change to “Access Condition”, “KEY A” or “KEY B” after finishing to “Card Reset”.
RW Reader Setting is function to set current Wiegand Output Bit, digit of Card ID, Access Condition, KEY A or KEY B. And next application software is reading same card as settings when reading a card.

※ RW Reader Setting
RW Reader Setting can set simultaneously max.32 readers (In case of connecting RS485).
1. Click default data among information saved on database.
2. Confirm to enter in the field of “Wiegand Output Bit”, “Card ID”, “Access Condition”, “KEY A” or “KEY B”.
3. Enter to ADD. Start and ADD. End of reader which sets up on RW Board ID.
   (When PRG2000 is connected to SR RW Reader through RS232 communication, its ADD. Start and ADD. End should be ‘0’.)
4. Run pressing “RW Reader Setting” button.
   Run to setting as address of the unit which you have set.

Save & Delete

“Save” & “Delete” button is function which you can save and delete to current inputting data.
※ Save
Save to inputted information.
1. Enter to “Access Control Code” and “Name”.
2. Enter to “Wiegand Output Bit” and “Card ID”.
3. Enter to “Access Condition”, “KEY A” or “KEY B”.
4. Save pressing “Save” button.

※ Delete
After choosing a card information, press “Delete” button and then progress it.

6. Debt Meal

Debt Meal Configuration

“Debt Meal” saves for debt meal count. And application software decreases to 1 minus when card is reading one time.

→ Debt Meal Code
   Save a code to divide issuing card for debt meal.

→ Name
   Save persons’ name who get issuing a card for debt meal.

→ Debt Meal Information
   Save remained times for debt meal.
   When card is reading, debt meal count decreases 1 minus.
Additional Information 1 / 2

Save additional information about issuing card for debt meal.

Access Condition

Decide condition to read / write with KEY A or KEY B. The condition is as shown below.
- No.0: Able to read / write with KEY A
- No.1: Able to read / write with KEY B
- No.2: Able to read / write with KEY B
- No.3: Able to read / write with KEY B (Default value on Application 3)
- No.4: Able to read / write with KEY B

KEY A
AAAAAA

KEY B
BBBBBBBBBBBBBB

KEY A, KEY B

KEY A and KEY B play a role of password which is possible to read / write on sector.

RW Board ID

If readers between No.0 and No.31 are connected by RS485 and reader output is set by RS485,
you can set to reader at once when you set RW Reader.

Card Encoding

“Card Encoding” is function to write data for debt meal on a card.
First you make a card place within read range of PRG2000 and then give a command. We recommend that you make a card place in the central of PRG2000.

※ In case of trying first card encoding
1. Enter to Debt Meal Code and Name.
2. Enter to Debt Meal Information.
   (But you should enter whether yes or no data in the field of Additional Information1 / 2)
3. Enter to “Access Condition”, “KEY A” or “KEY B”.
4. Run pressing “Card Encoding”.
   (Then application software saves automatically on database.)

※ In case of trying again card encoding
1. Initialize a card pressing “Card Reset” button.
2. Enter to Debt Meal Code and Name.
3. Enter to Debt Meal Information.
   (But you should enter whether yes or no data in the field of Additional Information1 / 2)
4. Enter to “Access Condition”, “KEY A” or “KEY B”.
5. Run pressing “Card Encording” button.
   (When saved data exists already, you should save after confirming.)

Card Reading

“Card Reading” is function to confirm data of card.
**Smart Card Reader & Writer Software**

※ **Card Reading**

1. Enter to “Access Condition”, “KEY A” or “KEY B”.
2. Run pressing “Card Reading” button.

☞ **Caution**

When information entered on “Access Condition”, “KEY A” or “KEY B” are different with information of encoded card, it isn’t reading a card.

**Card Reset**

<table>
<thead>
<tr>
<th>Debt Meal</th>
<th>Card Reset - OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Control</td>
<td>Debt Meal</td>
</tr>
<tr>
<td>Name</td>
<td>Name</td>
</tr>
<tr>
<td>[Access Control]</td>
<td>[Debt Meal]</td>
</tr>
<tr>
<td>[Debt Meal Code]</td>
<td>[Debt Meal Code]</td>
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<tr>
<td>[Name]</td>
<td>[Name]</td>
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<tr>
<td>[Brand]</td>
<td>[Brand]</td>
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<td>[Additional Information]</td>
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<td>[Additional Information]</td>
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<tr>
<td>[Access Condition]</td>
<td>[Raid BrandID]</td>
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<tr>
<td>[KEY A]</td>
<td>[KEY B]</td>
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<tr>
<td>[End]</td>
<td>[End]</td>
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<tr>
<td>[Save]</td>
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<tr>
<td>[Card Encoding]</td>
<td>[Card Reading]</td>
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<td>[Card Reset]</td>
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</tbody>
</table>

※ **Card Reset**

1. Enter to “Access Condition”, KEY A or KEY B.
2. Run pressing “Card Reset” button.

☞ **Caution**

When information entered on “Access Condition”, “KEY A” or “KEY B” are different with information of encoded card, it isn’t reading a card.

You can change to “Access Condition”, “KEY A” or “KEY B” after finishing to “Card Reset”.
RW Reader Setting is function to set current Wiegand Output Bit, digit of Card ID, Access Condition, KEY A or KEY B. And next application software is reading same card as settings when reading a card.

**RW Reader Setting**

RW Reader Setting can set simultaneously max. 32 readers (In case of connecting RS485).

5. Click default data among information saved on database.

6. Confirm to enter in the field of “Wiegand Output Bit”, “Card ID”, “Access Condition”, “KEY A” or “KEY B”.

7. Enter to ADD. Start and ADD. End of reader which sets up on RW Board ID.

   (When PRG2000 is connected to SR RW Reader through RS232 communication, its ADD. Start and ADD. End should be ‘0’.)

8. Run pressing “RW Reader Setting” button.

   Run to setting as address of the unit which you have set.

**Save & Delete**

“Save” & “Delete” button is function which you can save and delete to current inputting data.

**Save**

Save to inputted information.
1. Enter to “Access Control Code” and “Name”.
2. Enter to “Wiegand Output Bit” and “Card ID”.
   (But you should enter whether yes or no data in the field of Additional Information1 / 2)
3. Enter to “Access Condition”, “KEY A” or “KEY B”.
4. Save pressing “Save” button.

※ Delete
   After choosing a card information, press “Delete” button and then progress it.

7. Cashless Payment

Cashless Payment Configuration

Cashless payment saves “Account Information” and has function for INC. or DEC as appointed amount.

→ Account Code
   Save a code to divide issuing card for cashless payment.

→ Name
   Save persons’ name who get issuing a card for cashless payment.
→ **Deposit**

Save “Deposit” for cashless payment.

(But input amount are different with individuals according to INC or DEC Value.)

---

**Additional Information 1 / 2**

Save “Account Information” for cashless payment.

---

→ **Access Condition**

Decide condition to read / write with KEY A or KEY B. The condition is as shown below.

- No.0: Able to read / write with KEY A
- No.1: Able to read / write with KEY B
- No.2: Able to read / write with KEY B
- No.3: Able to read / write with KEY B
- No.4: Able to read / write with KEY B (Default value on Application 3)

---

→ **KEY A, KEY B**

KEY A and KEY B play a role of password which is possible to read / write on sector.

---

→ **RW Board ID**

If readers between No.0 and No.31 are connected by RS485 and reader output is set by RS485, you can set to reader at once when you set RW Reader.

---

→ **INC or DEC Value**

Set up DEC Value for prepaid or INC Value for credit at once.

→ **Value Block Mode**

Decide DEC Value for prepaid or INC Value for credit when card is reading.

- Prepaid (Decrement) – DEC for prepaid
- Credit (Increment) – INC for credit
Card Encoding

“Card Encoding” is function to write data for cashless payment on a card.

First you make a card place within read range of PRG2000 and then give a command. We recommend that you make a card place in the central of PRG2000.

※ In case of trying first card encoding

1. Enter to Debt Meal Code and Name.
2. Enter to Debt Meal Information.
   (But you should enter whether yes or no data in the field of Additional Information1 / 2)
3. Enter to “Access Condition”, “KEY A” or “KEY B”.
4. Enter to “INC or DEC Value”(Increase or Decrease Value).
5. Select to “Value Block Mode”.
   - Prepaid (Decrement) – DEC for prepaid
   - Credit (Increment) – INC for credit
6. Run pressing “Card Encoding” button.
   (Application software saves automatically on database.)

※ In case of trying again card encoding

1. Initialize a card pressing “Card Reset” button.
2. Enter to Debt Meal Code and Name.
3. Enter to Debt Meal Information.
   (But you should enter whether yes or no data in the field of Additional Information1 / 2)
4. Enter to “Access Condition”, “KEY A” or “KEY B”.
5. Enter to “INC or DEC Value” (Increase or Decrease Value).
6. Select to “Value Block Mode”.
   - Prepaid (Decrement) – DEC for prepaid
   - Credit (Increment) – INC for credit
7. Run pressing “Card Encoding” button.
   (Application software saves automatically on database.)

Card Reading

“Card Reading” is function to confirm data of encoded card.

※ Card Reading
1. Enter to “Access Condition”, KEY A or KEY B.
2. Run pressing “Card Reading” button.

☞ Caution
When information entered on “Access Condition”, “KEY A” or “KEY B” are different with information of encoded card, it isn’t reading a card.
Card Reset

“Card Reset” is function to remove encoded data on a card and to initialize it.

*Card Reset*

1. Enter to “Access Condition”, KEY A or KEY B.

2. Run pressing “Card Reset” button.

**Caution**

When information entered on “Access Condition”, “KEY A” or “KEY B” are different with information of encoded card, it isn’t reading a card.

You can change to “Access Condition”, “KEY A” or “KEY B” after finishing to “Card Reset”.

RW Reader Setting
Smart Card Reader & Writer Software

RW Reader Setting is function to set current Wiegand Output Bit, digit of Card ID, Access Condition, KEY A or KEY B. And next application software is reading same card as settings when reading a card.

Cashless payment make amount decreases or increases as inputted value on INC or DEC Value.

※ RW Reader Setting

RW Reader Setting can set simultaneously max.32 readers (In case of connecting RS485).

1. Click default data among information saved on database.

2. Confirm to enter in the field of “Wiegand Output Bit”, “Card ID”, “Access Condition”, “KEY A” or “KEY B”.

3. Enter to ADD. Start and ADD. End of reader which sets up on RW Board ID.

   (When PRG2000 is connected to SR RW Reader through RS232 communication, its ADD. Start and ADD. End should be ‘0’.)

4. Run pressing “RW Reader Setting” button.

   Run to setting as address of the unit which you have set.

   RW Reader Setting can set max.32 readers simultaneously.

Save & Delete

“Save” & “Delete” button is function which you can save and delete to current inputting data.

※ Save

Save to inputted information.

1. Enter to “Access Control Code” and “Name”.

2. Enter to “Wiegand Output Bit” and “Card ID”.

   (But you should enter whether yes or no data in the field of Additional Information 1 / 2)

3. Enter to “Access Condition”, “KEY A” or “KEY B”.

4. Save pressing “Save” button.

※ Delete

After choosing a card information, press “Delete” button and then progress it.
## 8. Error Messages

<table>
<thead>
<tr>
<th>Error Messages</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOTAGERR</td>
<td>In case: Not a card within Read Range or normally does not complete Request Step. Execute Request Step again.</td>
</tr>
<tr>
<td>AUTHERR</td>
<td>In case: Does not complete normal authentication in Authentication process Confirm whether KEY VALUE of block to desire authentication is correct or not.</td>
</tr>
<tr>
<td>KEYERR</td>
<td>In case: Having Incorrect KEY VALUE like AUTHERR Confirm whether KEY VALUE is correct or not.</td>
</tr>
<tr>
<td>PARITYERR</td>
<td>In case: Incorrect Parity bit information or bit numerical difference</td>
</tr>
<tr>
<td>CODEERR</td>
<td>In case: When card can't receive command on progress process now.</td>
</tr>
<tr>
<td>BITCOUNERR</td>
<td>In case: Bit numerical difference or wrong bit</td>
</tr>
<tr>
<td>BYTECOUNTERR</td>
<td>In case: Byte numerical difference or wrong byte.</td>
</tr>
<tr>
<td>FRAMINGERR</td>
<td>In case: Wrong Frame Length or Information for communication sake.</td>
</tr>
</tbody>
</table>
9. Warranty and Service

The following warranty and service information applies only to the United States of America and Republic of Korea. For the information in other countries, please contact your local distributor. To obtain in or out of warranty service, please prepay shipment and return the unit to the service facility listed below.

**IN THE UNITED STATES**
RF Logics Inc. Service Center
370 Amapola Ave, #106
Torrance, CA 90501
Tel: (310) 782-8383
Fax: (310) 782-8298
E-mail: rflogics@rflogics.com
Web-site: www.rflogics.com

**OUTSIDE OF THE UNITED STATES**
IDTECK CO., LTD. Service Center
5F Ace Techno Tower B/D,
684-1 Deungchon-Dong, Gangseo-Gu,
SEOUL, KOREA 157-030
Tel: +82 (2) 659-0055
Fax: +82 (2) 659-0086
E-mail: webmaster@idteck.com
Web-site: www.idteck.com
The specification contained in this manual are subject to change without notice at any time.

5F, Ace Techno Tower B/D, 684-1, Deungchon-Dong, Gangseo-Gu, Seoul, 157-030, Korea
Tel : (82) 2 2659-0055
Fax : (82) 2 2659-0086
E-mail : webmaster@idteck.com

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