

SmartCopier

(Parameter Read /Write Function)

User Manual

V3.2

RealSYS

NOTE

- The specifications and contents of this product are subject to change for performance improvement.
- Prohibit replication without permission, change, and the use in other applications of software and related documentations.
- Free A/S is possible within the warranty period and if the failure is due to carelessness of user handling, the repair costs may be paid by user.
- The person who actually use the products is responsible for damage, if it is caused by the user's carelessness or the safety precautions are not taken into account.
- Except what is described in this book,
- When the product is damaged due to the improper use or approaches which is not described in this manual, repair requests can be rejected.



• OPERATING PRECAUTIONS

◆ Power Supply

- Use provided insulated DC 5V, above 2A product for external adapter.
- Use four reliable AA-type batteries for internal power source.
(Since the power consumption by inverter model is different, it is recommended to use a lithium-ion battery.)

◆ SD Card and USB

- When inserting or removing SD card, check that the product is in non-operating state or the power is turned off in advance.
(SD card supports up to SDHC 64GB, but this takes a long time to initialize, so it is recommended that no more than 8GB.)
- Do not turn off the power or separate the cable from the device before the USB is disconnected in the user PC application program or PC is turned off during USB communication.

◆ Inverter Connector and Gender

- Be careful not to pinch the conductive material in the gap of the connector terminal or gender.
- Be careful with the direction of polarity when connecting the gender to the inverter.

◆ Firmware Download

- Do not turn off the power during functional operations before success or failure screen is displayed.
- Do not remove the SD card from the device during functional operations.
- Do not apply power to an inverter during functional operations.
- Do not disconnect the download gender or cable during functional operations.

◆ Parameter Read/Write


- Do not connect/disconnect RJ-45 cable terminal during functional operations.
- Do not remove the SD card from the device during functional operations.

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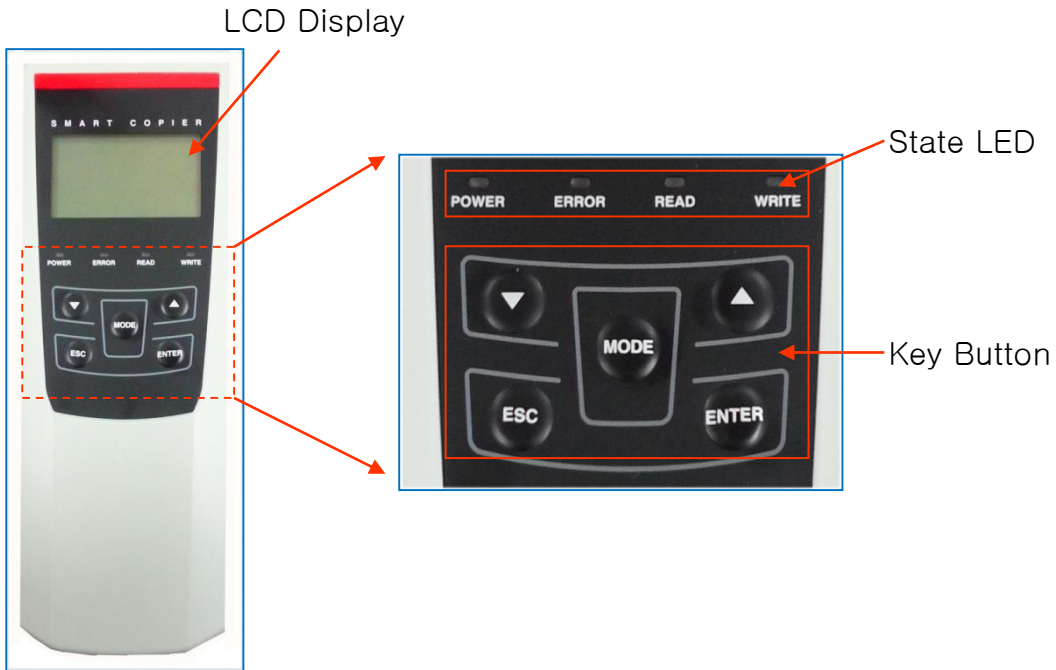
1. Specifications

| Item | Description | Note |
|-----------------------------|---|---|
| Product | <ul style="list-style-type: none"> • SmartCopier Firmware/Parameter combined • SmartCopier Parameter only | |
| Display | <ul style="list-style-type: none"> • Black and white graphic LCD 128 x 64 (green backlight available) • Power / Error / Read / Write State LED | |
| Input Device | <ul style="list-style-type: none"> • Main body power ON / OFF switch • Up / Down / Mode / Enter / Shift button key • USB 2.0 Communication Terminal | |
| Output Device | <ul style="list-style-type: none"> • RJ45 Communication Terminal (for Parameter Comm.) • Connector / Flat 10P Cable (for Gender Firmware Download | |
| Memory Card | <ul style="list-style-type: none"> • SD Card SDHC (Up to 64GB, recommend 8GB) • FAT32 | |
| Power Standard | <ul style="list-style-type: none"> • Battery for internal power (four general AA-type batteries) (In the case of providing the battery, and enables Parameter features more than 500 times) • Adapter for external power (insulated DC 5V, above 2A) | Refer to 16page |
| Software | <ul style="list-style-type: none"> • Support window file conversion and management program • Support window device driver • Windows XP, Windows Vista, Windows 7, 8,10 compatible. | |
| Main Function | <ul style="list-style-type: none"> • Firmware Download / Parameter Read / Parameter Write • Target power supply • USB insulation function | |
| Supporting Model & CPU Type | <ul style="list-style-type: none"> • S100 / H100 / iS7 Inverter Model • Freescale Coldfire MCF51JM32 • Freescale Coldfire MCF51JM128 • TI-DSP TMS320F2809 • TI-DSP TMS320F2811 | |
| Size & Weight | <ul style="list-style-type: none"> • 70 x 190 x 30 (Width x Length x Height) • Weight 250g (except battery weight) | mm |
| Package | <ul style="list-style-type: none"> • Main Body 1Set / User Manual / Software CD / USB2.0 Cable / SD Card 8GB / DC Power Adapter (절연형) / AA Lithium-ion Battery Set / RJ-45 Cable | |
| Certification | <ul style="list-style-type: none"> • MIC Certification | KOREA  |

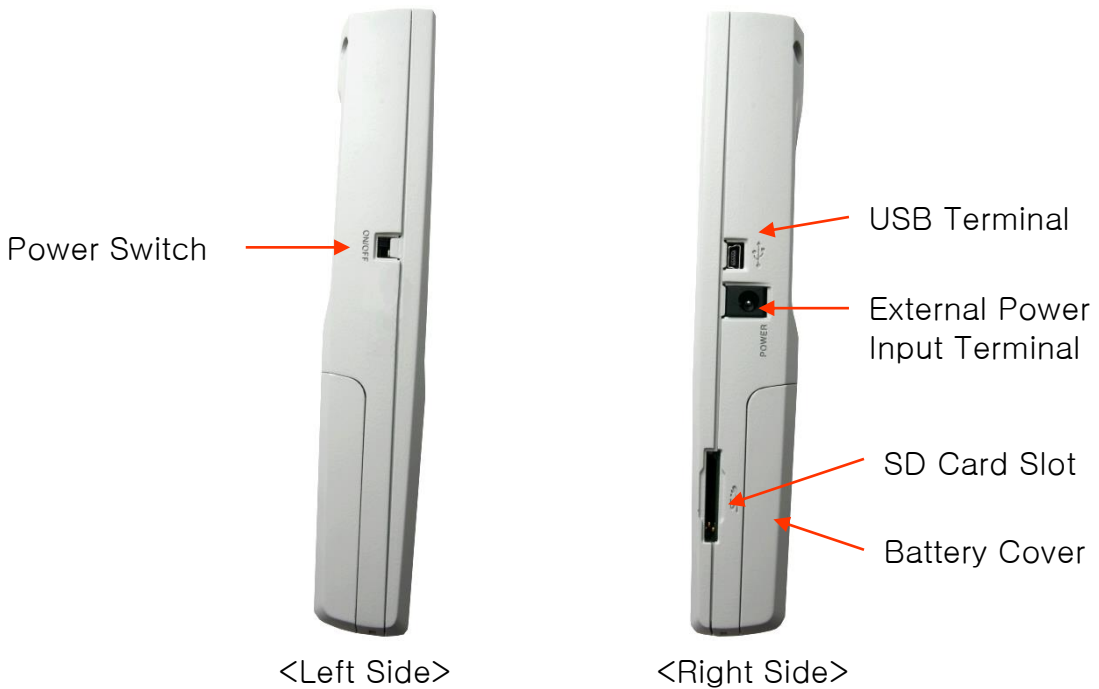
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2. Exterior

2.1 Front



2.1 Side



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2.2 Top

Parameter
Communication
Terminal (RJ-45)



Firmware
Download Terminal

2.3 Back

Battery Cover



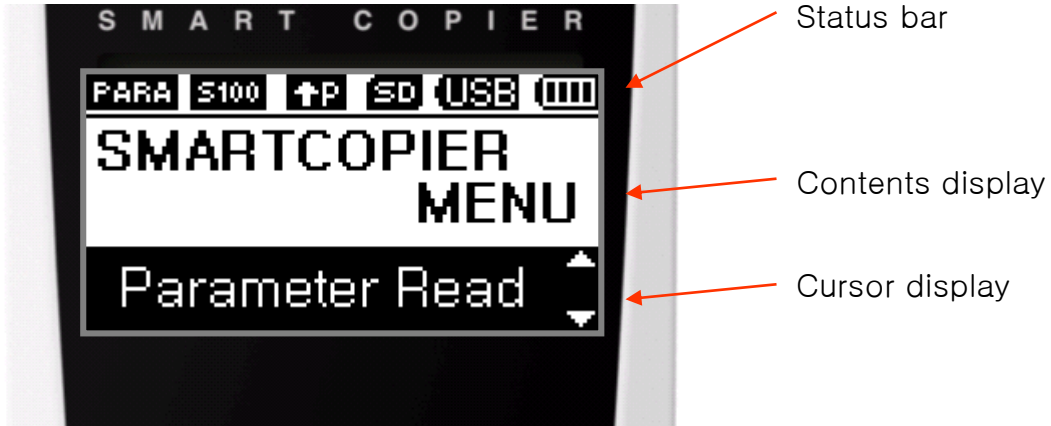
Battery Case
(AA-Size x4)



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3. Monitor Functions

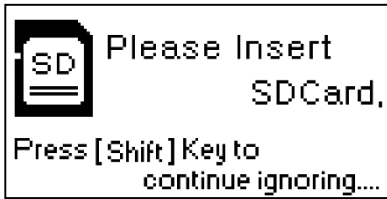
3.1 LCD Monitor Display



– Type of state Icon

- FIRM** : Firmware Download Mode Display
- PARA** : Parameter Read/Write Mode Display
- S100** / **H100** / **iS7** : Inverter Model Display
- ↑P** : Parameter Write Mode Display
- ↓P** : Parameter Read Mode Display
- ↑E** : BDM Write Mode Display
- ↑U** : Real DSP-UT Write Mode Display
- SD** : SD Card Insertion Status Display
- USB** : USB Connection Status Display
- ||||** / **□** : Battery Status Display

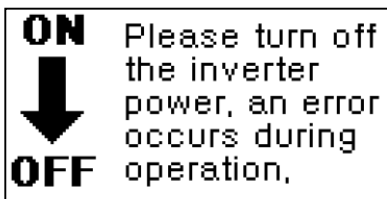
- Information message type



This screen is displayed when SD Card is empty in the SD Card slot terminal of the product. If you press the Shift key, you can ignore the message.



This screen is displayed in the process of recognizing the Card when you insert the SD card to slot terminal. Do not remove the SD Card at this time.



This screen is displayed when the inverter is turned on and in the operating state. To continue the operation, turn off the power of the inverter or disconnect the connector from the inverter.



This screen is displayed when the application installed on the user's PC and the main body of product are communicating. Until it is disconnected from the PC program, the user can not execute any operation.

3.2 Display Functions



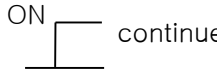
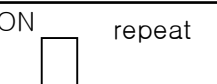
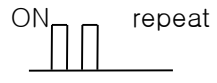
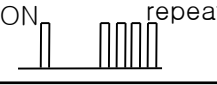
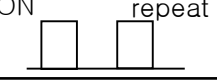
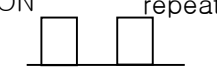
① Power Status LED

② Error Status LED

③ Read Status LED

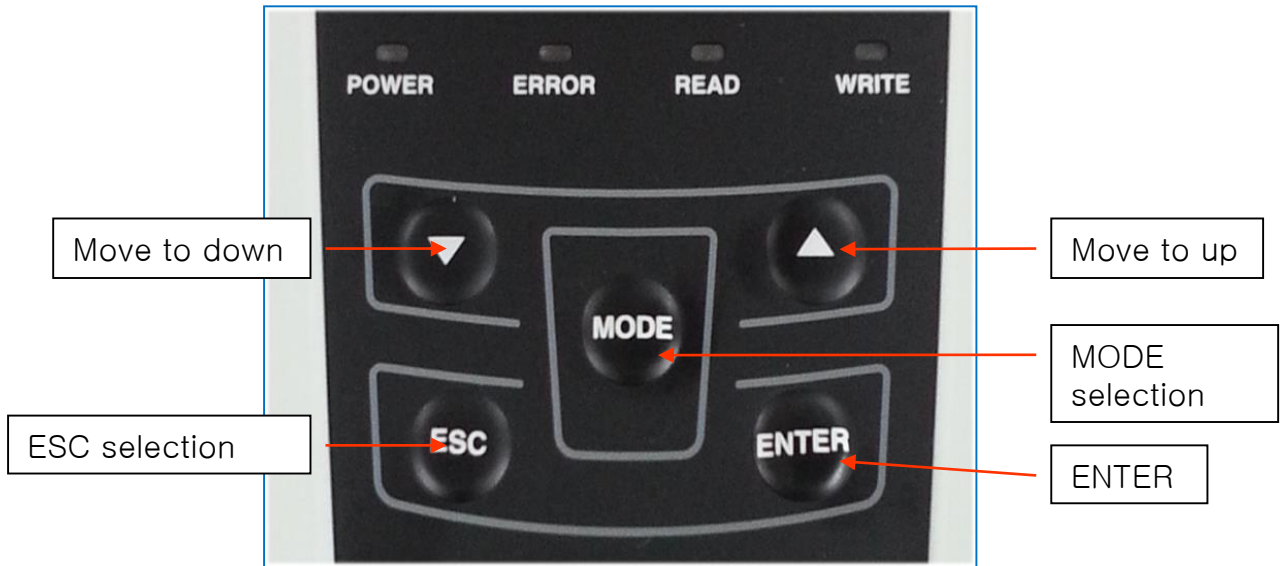
④ Write Status LED

– LED Display State

| LED | Color | Waveform | State | Description |
|------------------|-------|--|--------------------------|--|
| Power Status LED | Green | ON  continue | ON | Steady power input state |
| | Green | ON  repeat | Toggle (1s intervals) | Low battery state |
| Error Status LED | Red | ON  repeat | Toggle (1s intervals) | Operation error or failure state |
| | Red | ON  repeat | Toggle (1s intervals) | Not under functional operating condition |
| Read Status LED | Green | ON  repeat | Toggle (1s intervals) | State of reading data from the target |
| Write Status LED | Green | ON  repeat | Toggle (1s intervals) | State of writing data to the target |

4. Input Devices

4.1 Button Key



– Button Description

UP key : Move the cursor to up.

DOWN key : Move the cursor to down.

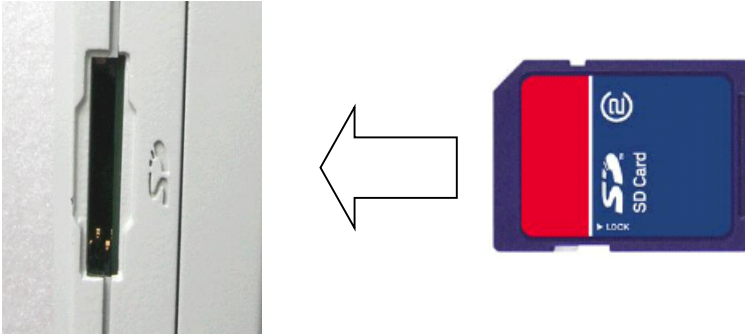
ESC key : Move the screen to its previous state or Cancel Action

ENTER key : Execute the function indicated by cursor / Select item

MODE key : Move to the initial screen or call the special command

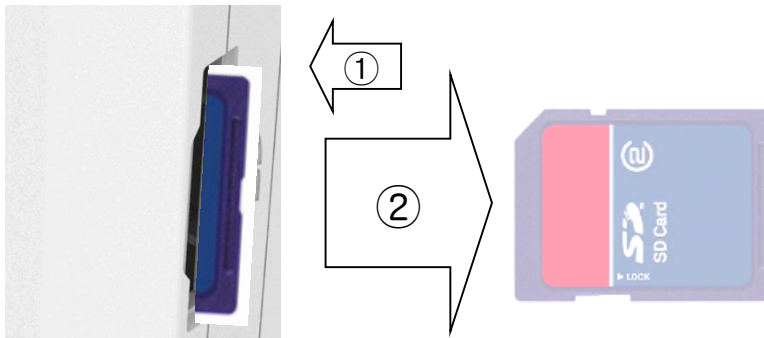
4.2 SD CARD Insertion / Removal

- When the card is inserted



When the card is inserted, put the card deep into the SD Card slot of the main body along with the sound “click”. The card must be fixed not come out of the body.

- When the card is removed

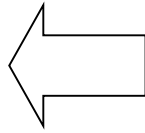


When the card is removed, put the card deep into the SD Card slot of the main body once again along with the sound “click”. Then the card will be separated out of the main body. At this time, pull the card and remove it from the main body.

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4.3 USB Connection / Disconnection

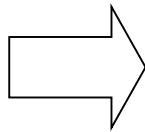
- Connection



USB 2.0 Mini-B Cable

Connect the cable to the USB terminal of the main body.

- Disconnection



USB 2.0 Mini-B Cable

Exit the application provided to user PC, and then remove the cable from the USB terminal of the main body.

5. Output Port and Gender Structure

RJ-45 Connector Terminal.
(Parameter Read/Write
Connector)



10Pin Connector Terminal

(NOT Connection,
Only used Firmware Write)

RJ-45 connected to the inverter connected to the gender use 1:1 direct cable with the target board.

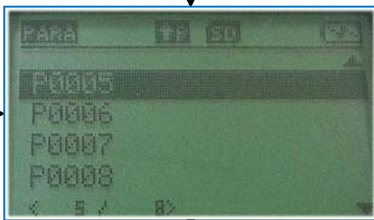
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5. Operation and Use Description

5.1 Parameter Write

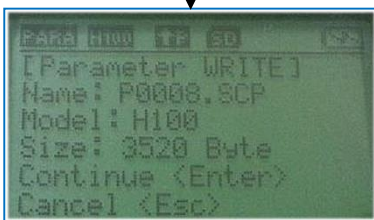


- Enter the [Parameter Write] on the menu screen.

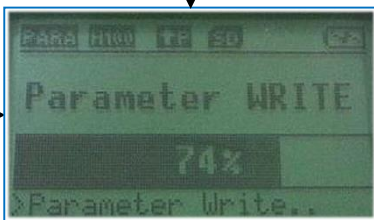


- Select the file using the Up/Down keys on the file List. Press to the <ENTER>, writing the file. Press to the <ESC>, return menu previous.

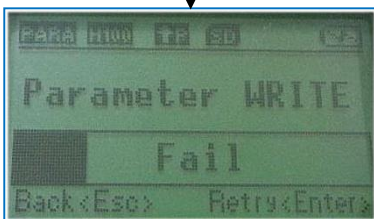
※ From the following steps, <Enter> and <ESC> key can only be used.



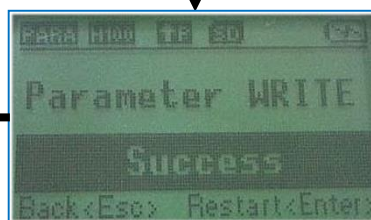
- To make sure that the displayed information is consistent with the target inverter information.
- If the both information match, press the [Enter] key to write, if not press the [ESC] key to cancel.



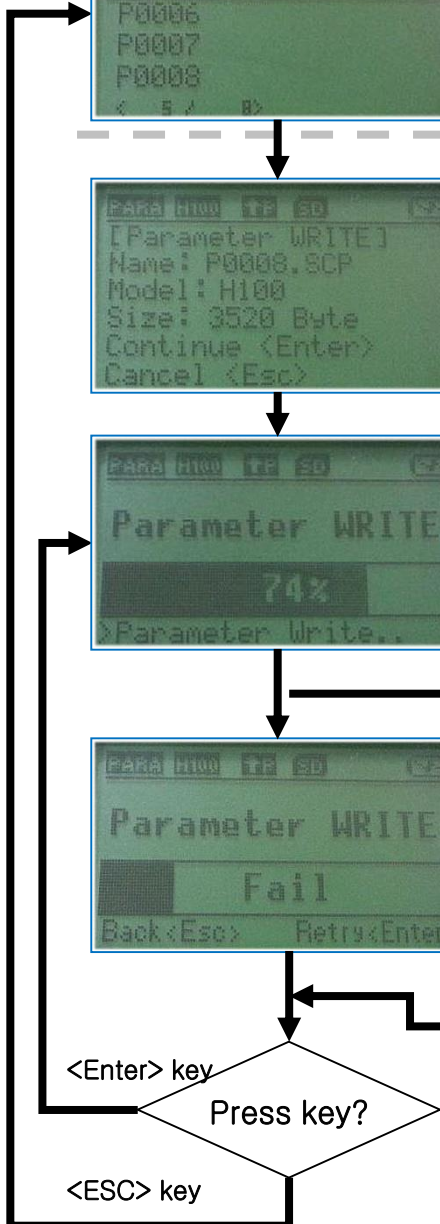
- Writing operation.
(Key operation prohibited until the operation is completed)



- Please check the following failure.
 - 1) Please check cable connection and battery status.
 - 2) Please check the file is correct.



- Writing scsess.
- Press to <ENTER>, Rewrite
- Press to <ESC>, move to previous menu.



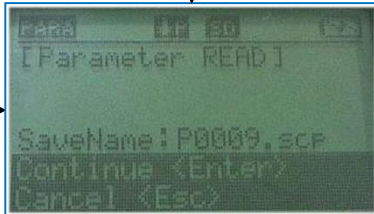
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5.2 Parameter Read



- Enter the [Parameter Read] on the menu screen.

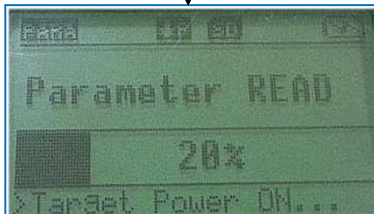
※ From the following steps, <Enter> and <ESC> key can only be used.



- Ready state for read.
- Press the Enter key to read or press the Shift key to cancel.

Warning!

Is a randomly generated file name, the user must remember it.



- Reading operation.
(Key operation prohibited until the operation is completed)

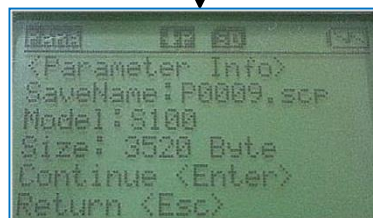
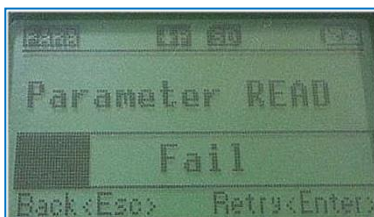
• Please check the following failure.

- 1) Please check cable connection and battery status.
- 2) Please check Parameter information of the IO card is correct

If not written in the parameter information of the inverter in IO cards, the Read operation will fail.

Save the Parameter of the inverter before the IO Read operations(Reference 6.4.2 - ②)

- 3) After check list, retry the <ENTER> key.



- Display result info.

If result success, data file auto save.

- Press to <ENTER>.

retry reading operation

- Press to <ESC>, Move to previous Menu,

Enter key

Press key?

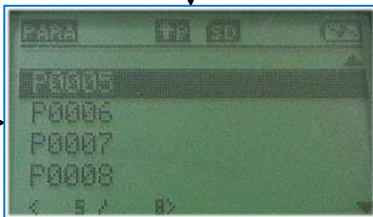
<ESC> KEY

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5.3 File remove

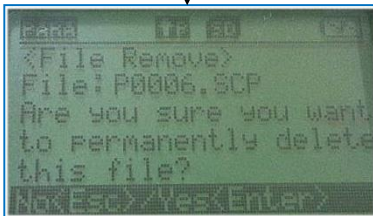


- Enter the [Firmware Download] or [Parameter Read] on the menu screen.



- When the file list screen is displayed, Press and hold the Mode key for 3 seconds.

※ From the following steps, <Enter> and <ESC> key can only be used.

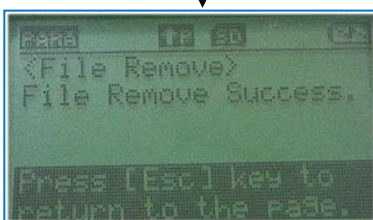


- Guide screen of file deletion is displayed.
- Press to <Enter> key, delete file.
- Press to <ESC> key, save cancel.

Shift key

Press key?

Enter key

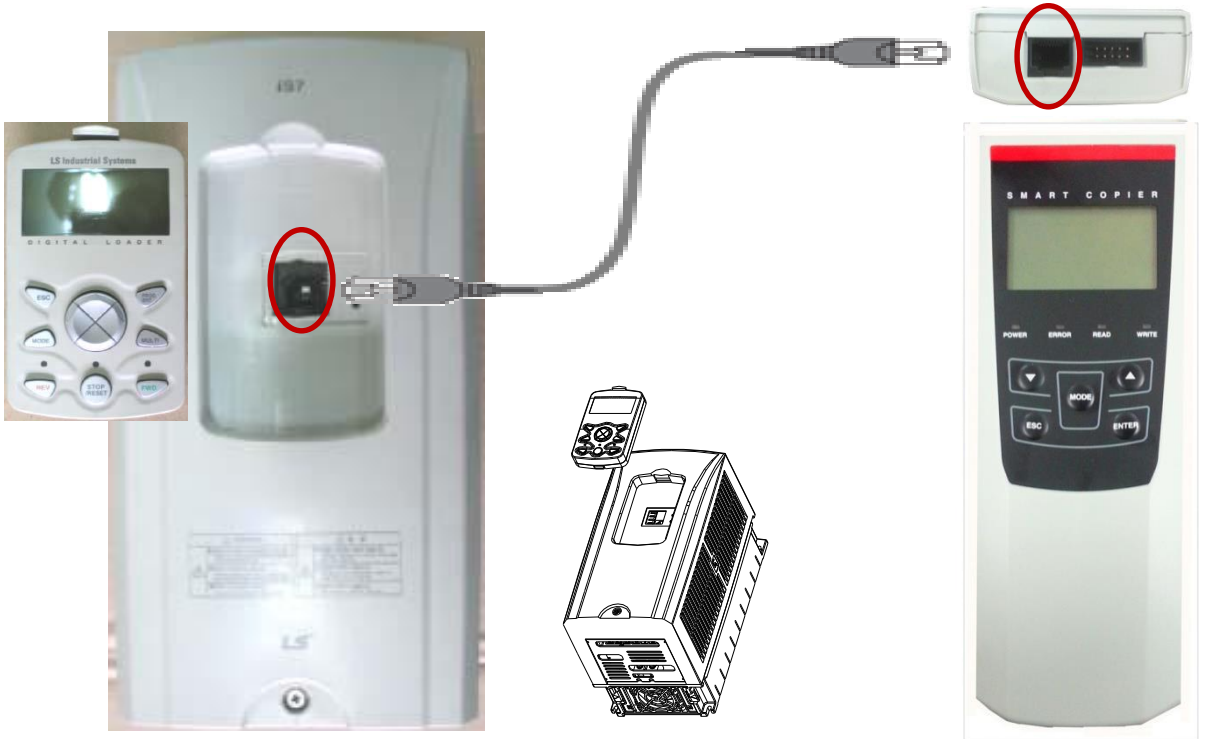


- Result screen of file deletion

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5.4.1 iS7 Parameter Read/ Write

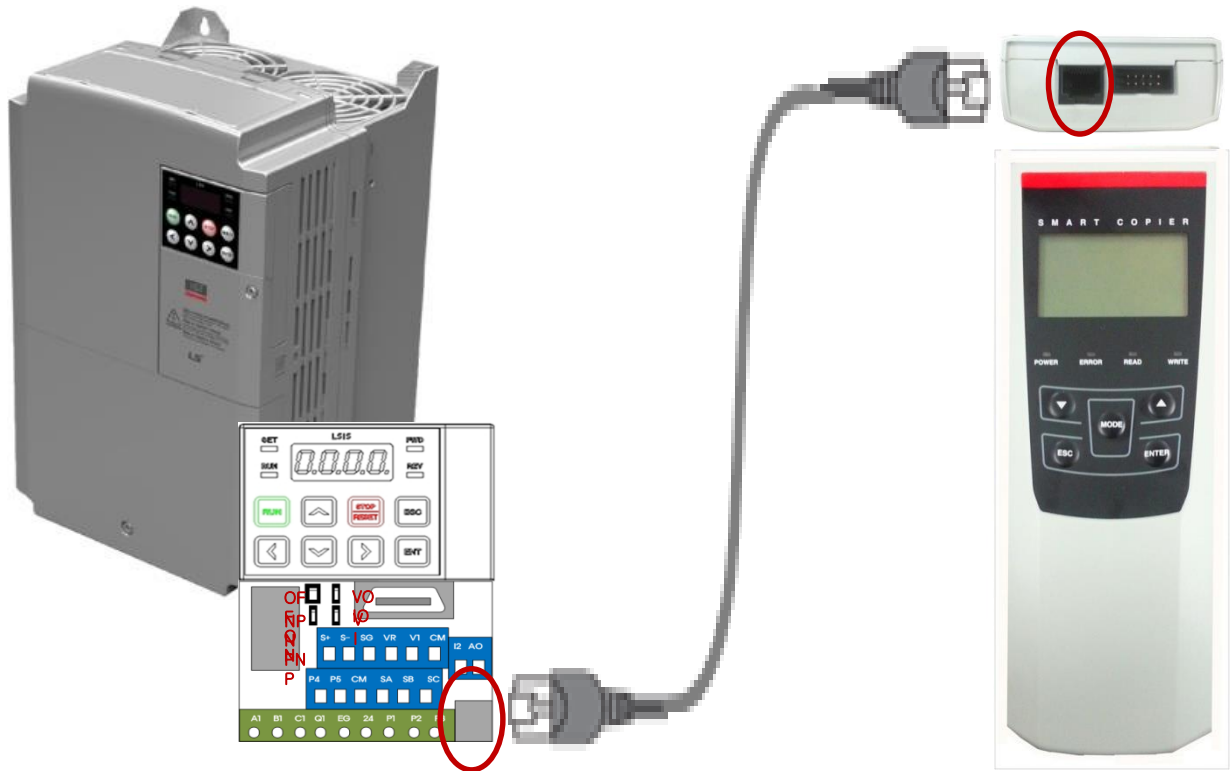
◆ Connection operation for parameter read/write



- ❖ Turn off the inverter power supply, iS7 the keypad must be separated from the body. Then, connect the RJ45 cable to smart copier and keypad.
- ❖ ON the power of Smart Copier, proceed to Read/Write.
- ❖ If the version of the model code of the inverter or different, is the cause of the failure.
- ❖ Down-loading is the same as the existing LCD-type keypad.

5.5.1 Supplemental description of the Parameter read / write - ①

◆ Connection operation for parameter read/write



- ❖ Turn the inverter OFF, connect the Smart copier and inverter IO card (S100 or H100) with a RJ45 cable. (RJ45 specifications: Direct, within 300mm)
- ❖ Read/Write only while supplies power to the inverter in the Smart copier.
 - ✓ If the power of the inverter is turned on, Read / write operation is failed, the inverter trip occurs.
- ❖ Read on during operation S100, if the inverter displays 'S100-> U' on 7-SEG ,after completion display disappears. (If there is no display of H100 Model)
- ❖ Write on during operation S100, if the inverter displays 'S100->d' on 7-SEG ,after completion display disappears. (If there is no display of H100 Model)



5.5.2 Supplemental description of the Parameter read / write - ②

◆ Read the previous command in the Smart copier, Parameter to store the inverter

❖ Before perform Parameter read, you should upLoad the parameter of the inverter in IO CARD. Items related parameter of the inverter is 'DRV-91', you can perform the '3: SmartUpLoad'. If after UpLoad is complete, then the power of the inverter OFF, perform the Read operation of the Copier.

❖ Code related inverter parameter copy.

| Code | Com Adr | Desc. | Display LCD | Setting Range | Init. Value | Property | V/F | SL |
|--------|---------|-----------|-------------|---------------|-------------|----------|-----|----|
| DRV-91 | 0h115B | SmartCopy | SmartCopy | 0 None | 0 | X/A | ○ | ○ |
| | | | | 1 Reserved | | | | |
| | | | | 2 Reserved | | | | |
| | | | | 3 SmartUpLoad | | | | |

•For DRV-91

- 0 : None
- 1 : reserved
- 2 : reserved
- 3: SmartUpLoad : If you choose, parameter values are stored in a read memory.

◆ Parameter Read /Write description of Smart Copier

❖ Please be sure to power OFF the inverter when Parameter Read / write operation using the copier.

❖ Parameter Read :

Operation to copy the parameter values of the inverter to the copier.

Please **refer to 5.4.3** before performing this function.

(If Parameter values are not stored in the inverter, this function will fail.)

❖ Parameter Write :

Operation to copy the parameter values to the inverter in the copier.

(If the inverter models vary, this behavior is the cause of the failure.)

After completing the operation, the Parameter value will be applied automatically when the power to the inverter ON.

❖ Operation of the copier, please refer to section 5.1 or 5.2.

5.5.3 Supplemental description of the Parameter read / write - ③

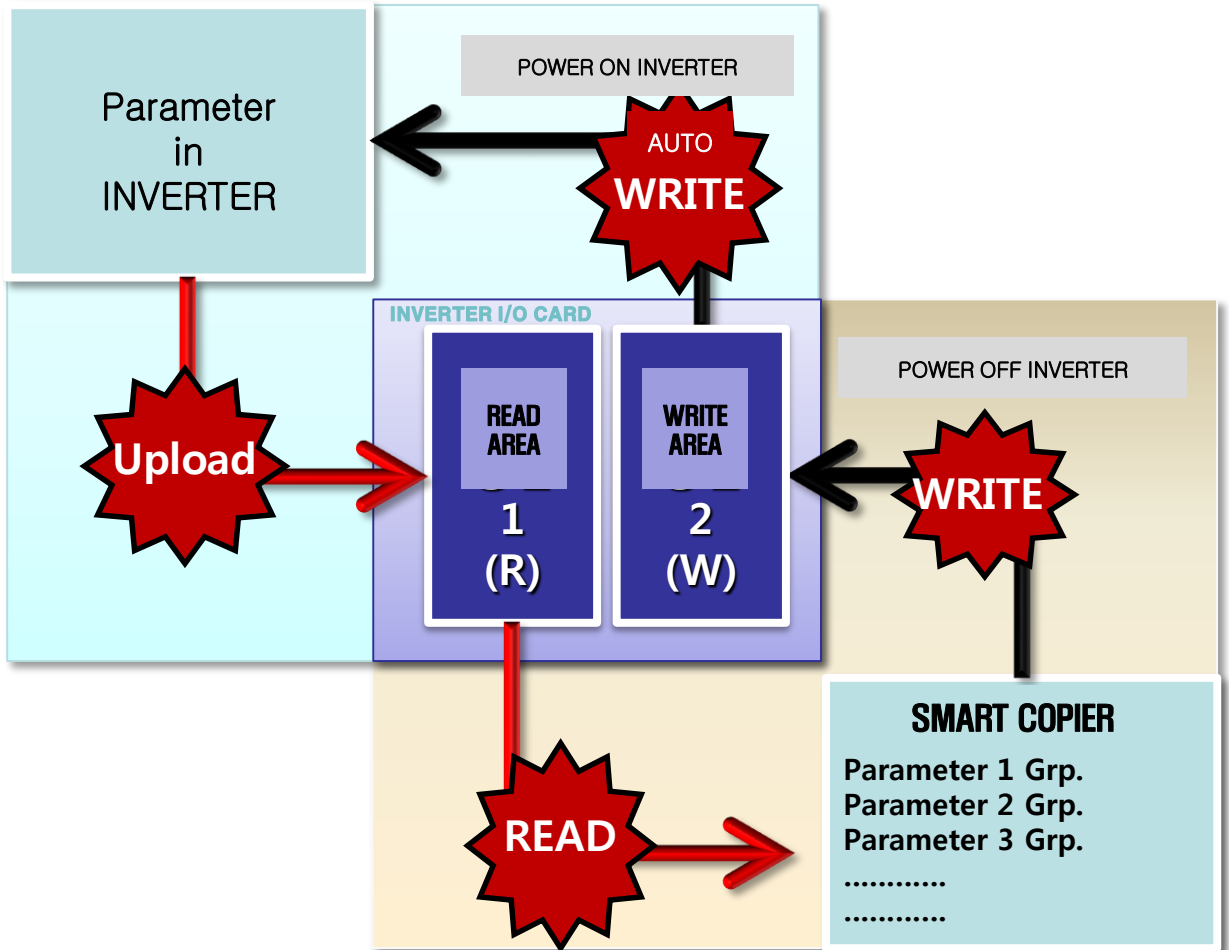
◆ After parameter write, inverter operation.

- ❖ When parameter write is successfully completed, remove the connector and turn ON the power to the inverter.



Since, parameter values are automatically saved to the inverter, the inverter 7-seg W-dL" will be displayed. Store operation is complete when, in the 7-seg display disappears.

◆ Parameter read / write progress and structure



- ✓ If the Parameter File Copier and inverter models vary, displayed on the display window of the inverter as follows.



(In case LCD Loader : "ParaWrite Fail"
In case 7-Seg Loader : "WERR")

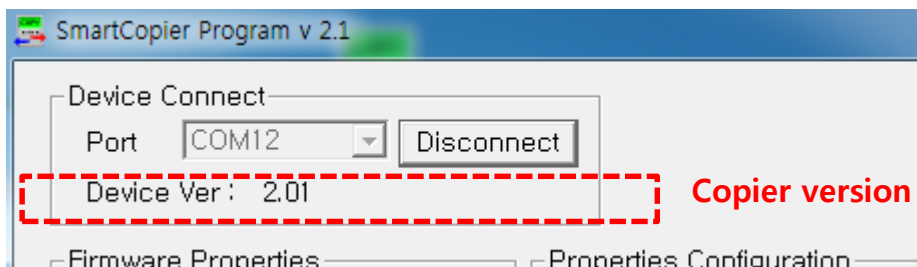
6. SMART COPIER Firmware Update

Using the provided programs, you can automatically update the smart copier

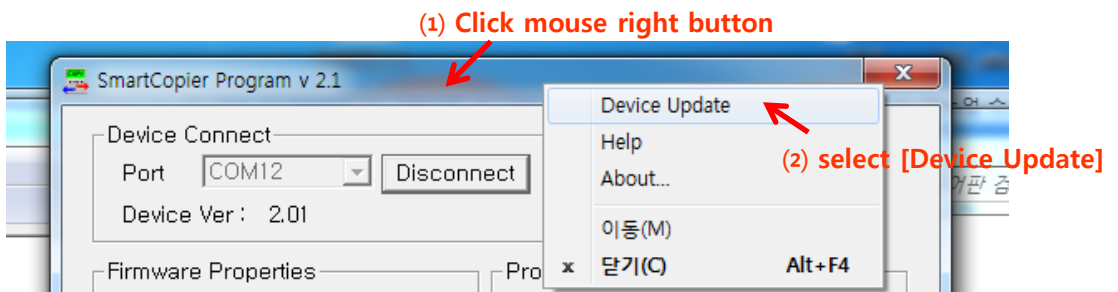
- ① Smart copier and connect the PC with the USB cable.
- ② Check the connection port. (SYSTEM – Device manage - COM&LPT)



- ③ After providing program(smcp.exe) execution, to connect the port.
(If not in the port list, reconnect the USB cable and run the program again.)

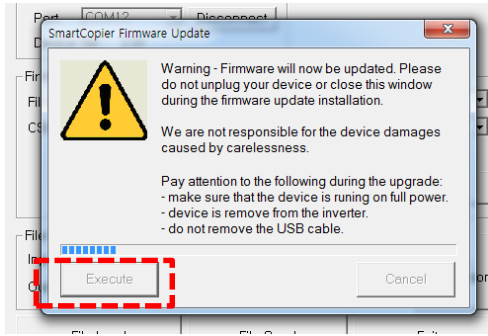


- ④ After checking the version, please mouse right button in the top bar of the program.

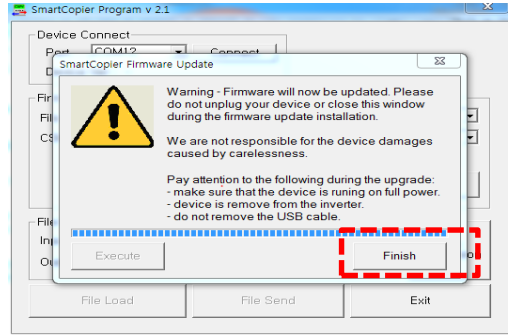


- ⑤ [Device update] execution, [Execute] is active after 5 seconds.

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(1) Run [Execute]



(2) Complete update, copier will be re-run.
After run the [Finish]

⑥ After the update, you must re-connect from ③ to communicate with the program.

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Modify History

| Ver | Data | Description |
|-------|-----------------|--|
| V2.01 | July-14,2015 | •Initialize |
| V2.12 | June-7,2016 | • Support iS7 Parameter read&write • Structural changes to the job file name Ex) is7_1.00_Pxxx (model_code version_pxxx) |
| V3.0 | 26, April, 2017 | • Supports M100 Model. |
| V3.2 | 29, May, 2019 | • Supports G100 Model. |
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