

Chapter 9 RTC Option Board

9.1 Battery

9.1.1 Battery specification

Item	Specification
Voltage/Current	DC 3V / 220 mA
Warranty period	3 years (ambient temp.)
Purpose	Program and data backup, RTC operation in case of power failure
Specification	Manganese Dioxide lithium battery
Dimension (mm)	φ 20 X 3.2 mm

9.1.2 Notice in using

- (1) Do not heat the battery or solder the polarity. (It may cause the reduction of life.)
- (2) Do not measure the voltage or short with tester. (It may cause the fire.)
- (3) Do not disassemble the battery.

9.1.3 Life of battery

Life of battery depends on the power failure time and ambient temperature etc..

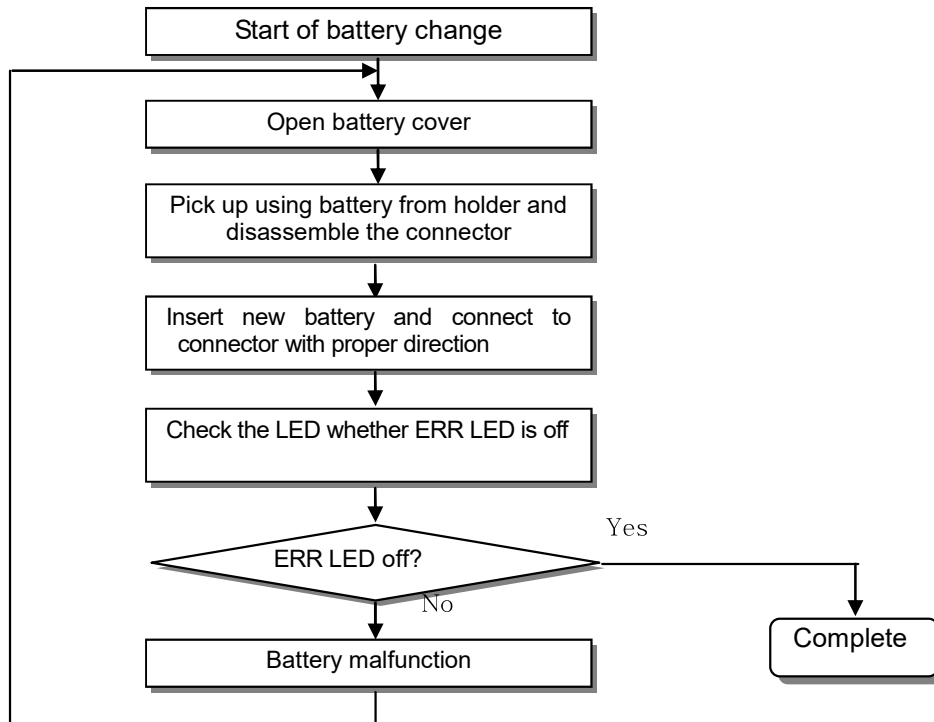
If battery is getting low, main unit cause the warning, 'battery voltage low warning'. The user can check it by error LED, flag and error message of XG5000.

Since battery works properly for long time, after battery voltage low warning, so the user can take the action after battery voltage low warning occurred.

9.1.4 How to change battery

The user should change the battery used to save the program and backup the data in case of power failure periodically. Though the user eliminate the battery, it works for 30 minute by super capacitor. Change the battery as fast as possible.

Sequence changing battery is as follows.



9.2 RTC Function

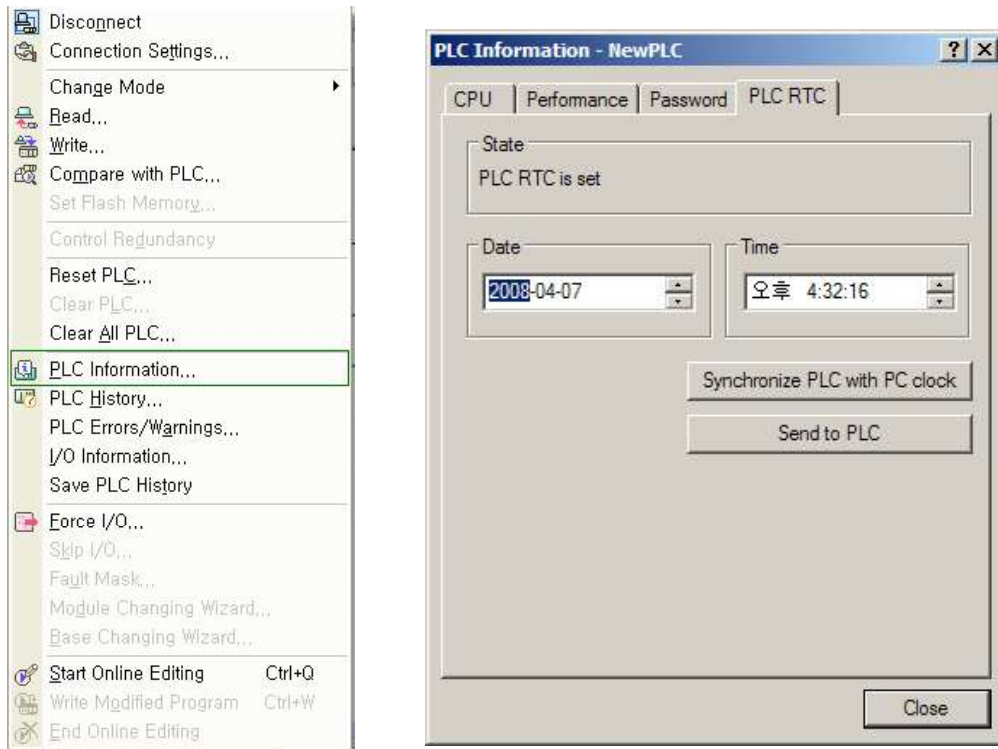
Economic type (XBC-DxxxE), standard type (XBC-DxxxS, XBC-DxxxSU) doesn't support RTC function. If you equip RTC option board, you can use this function for time management of system or error log. RTC function is executed steadily when power is off or instantaneous power cut status. Current time of RTC is renewed every scan by system operation status information flag.

9.2.1 How to use

(1) Reading/setting clock data

(a) Reading or setting from XG5000

- 1) Click 『Online』 의 『PLC Information』 .
- 2) Click PLC RTC tap of PLC Information』 .



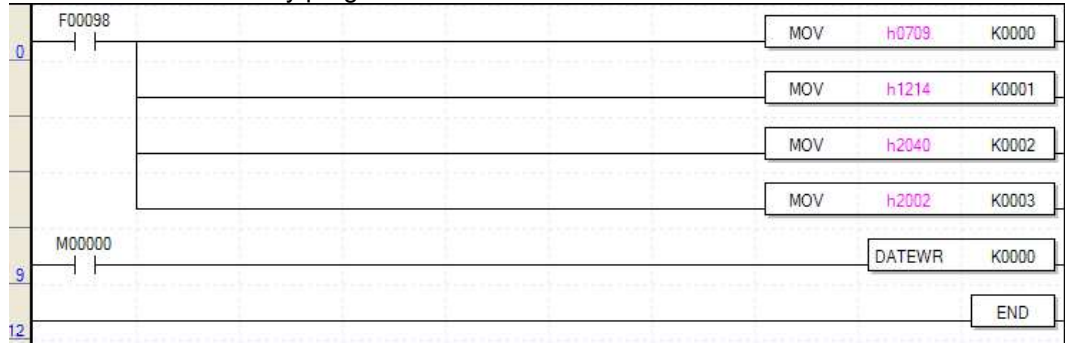
- 3) In case the user wants to send the clock of PC to PLC, press 'Synchronize PLC with PC clock'.
- 4) In case the user wants to send the clock the user wants, change the setting value of Time box and press 'Send to PLC'.

(b) Reading by special relay

The user can monitor as follows by special relay.

Special relay area	Data	Contents
F053	H0710	10year 07month
F054	H1729	29date 17hour
F055	H1020	10second 20minute
F056	H2004	20XXyear, Thursday

(c) Modification of clock data by program



area	Content
M0000	Month, year
M0001	Hour, date
M0002	Second, minute
M0003	Centuary, day

Write clock data to temporary device (P, M, K, L, Z, U, D, R) and turn on/off input contact point M0100. (If date and day data is not matched, Write is not available.)
Monitor and check the above special area (F053~F056)

(d) How to express the day

Number	0	1	2	3	4	5	6
Day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

(2) Deviation of clock data

$\pm 2.2s / 1d$ (normal temperature)

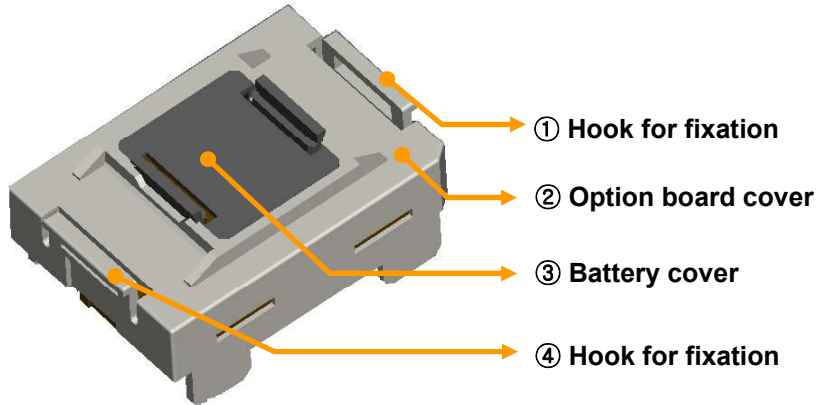
Operating temperature	Max deviation (second/day)
0 °C	-5.5 ~ 1.5
25 °C	-2.2 ~ 2.2
55 °C	-7 ~ 1

Remark

- 1) Initially, RTC may not have any clock data.
- 2) When using the product, first make sure to set the accurate clock data.
- 3) If any data out of the clock data range is written into RTC, it does not work properly.
i.e.) 14M 32D 25H
- 4) RTC may stop or have an error due to abnormal battery and other causes. The error is released if a new clock data is written.

9.3 Name and Function of Each Part

Describes the name and function of each part



No.	Name	Contents
①④	Hook for fixation	▶ Hook for fixing the option board to main unit
②	Option board cover	▶ Option board cover
③	Battery cover	▶ Battery cover