

# Universal Peltier Driver PLP Series Setting Software "PLP-300W14A Manager.exe" Operating Manual (Rev.2.30)

**Software Version: 2.1.0.0**

**Applicable Model List**

Model Number	Hardware Version	Firmware Version
PLP-300W14A	3.00 -	2.0.0.0 -

**[IMPORTANT]**

This software supports a product listed in the applicable model list.  
It is not available to older products.  
When the hardware version and the firmware version of the your product is older than the listed version, please refer for a serial number displayed by the label on the bottom of the product.  
And then please contact Kurag Electronics Peltier Controller support .

Kurag Electronics Peltier Controller support  
E-Mail: [kurag.tslab@biz.nifty.jp](mailto:kurag.tslab@biz.nifty.jp)

\* The developer of original software "PLP300\_Meas.exe" is T. S. Laboratory Corporation.

July 24, 2017

**KURAG ELECTRONICS LLC**



**KURAG  
ELECTRONICS**

## Table of contents

1. General	-----	Page3
2. Install / Uninstall	-----	Page3
3. Connection	-----	Page4
4. Start software	-----	Page5
5. Close software	-----	Page6
6. Screen	-----	Page7
7. Port Open/Close	-----	Page8
8. Board No.	-----	Page9
9. Preset	-----	Page10
10. Parameter	-----	Page11
11. Read Status	-----	Page12
12. Control Command	-----	Page13
13. Sensor	-----	Page14
14. Event	-----	Page16
15. File Operation	-----	Page17
Revision History	-----	Page20

## 1. General

This software is special software for Universal Peltier Driver PLP Series.

It can read and write various setting parameters of the PLP series by connecting the PLP series and a PC with a USB or RS-232(\*) communication cable.

(\*) RS-232 port is optional.

(\*) Setting parameter is written to EEPROM in the PLP series. It is kept during power off.

### [IMPORTANT]

This software is designed for development or production use. Special technical knowledge about temperature control system is necessary in use.

The PLP series may not work normally when there is an operation mistake or a wrong setting is executed.

## 2. Install / Uninstall

### System requirement

Microsoft Windows XP

Microsoft Windows Vista (\*1)

Microsoft Windows 7 (\*1)(\*2)

Microsoft Windows 8 / 8.1 (\*1)(\*2)

Microsoft Windows 10 (\*1)(\*2)

(\*1) When the program can not start, it may be solved with a compatible mode of Windows XP.

(\*2) When the program file is placed in "Program Files" folder, the program may not start.  
In such case please place the program file in the place except the "Program Files" folder.

Microsoft .NET Framework 4

### Install

Copy the program file "PLP-300W14A Manager.exe" and the language folder "en" to HDD.

(\*)In the Windows 7/8/8.1/10 environment please place the program file in the place except the "Program Files" folder.

(\*)"en" folder is used for English language indication. It should be same place as the program file.

### Uninstall

Delete the program file "PLP-300W14A Manager.exe" and "en" folder from HDD.

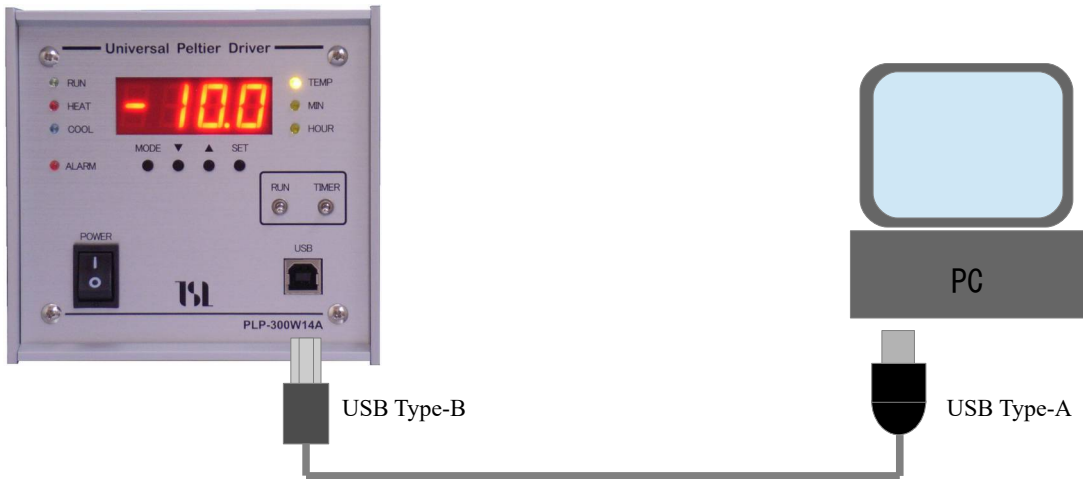
### Update

Overwrite by a new program file after terminating a program.

### 3. Connection

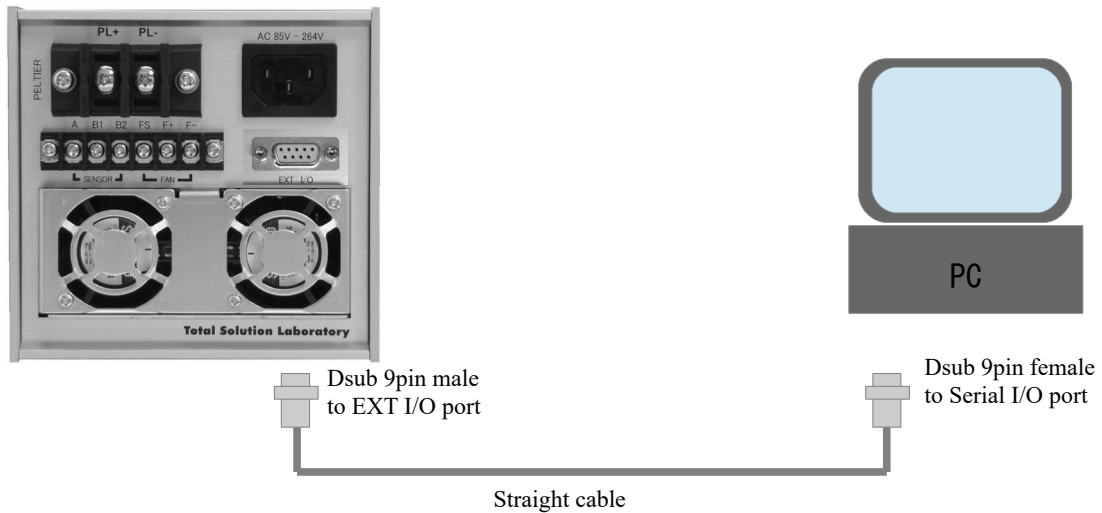
Connect the PLP Series and PC with USB communication cable.

- (\*1) USB cable is not included the package.  
Please prepare Type-A~Type-B USB cable by yourself.
- (\*2) Please insert USB cable after turning on the power of PLP series.
- (\*3) The device driver of USB-Serial converter IC FT232R is required.  
If necessary, please download the device driver from FTDI Web site.  
<http://www.ftdichip.com/FTDrivers.htm>  
URL may be changed without notice.



When the optional RS-232 port is mounted, it is able to use RS-232C serial port of the PC.

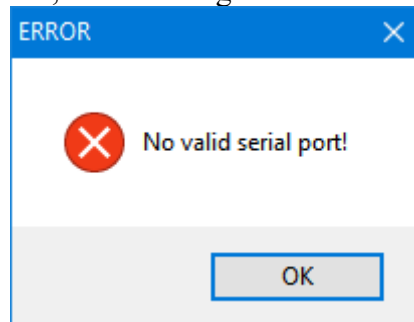
- (\*1) If both of USB and RS-232 are connected, USB is given priority.



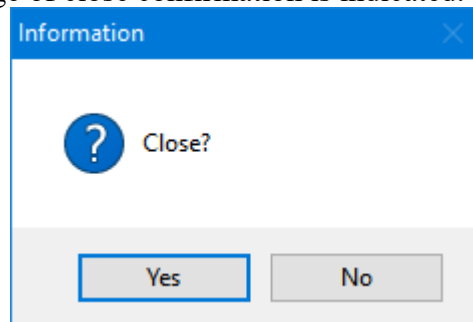
## 4. Start software

Double click the program file "PLP-300W14A Manager.exe" .  
Then the software is started.

If no valid PLP series is detected, error message is indicated.



Click "OK", then a message of close confirmation is indicated.



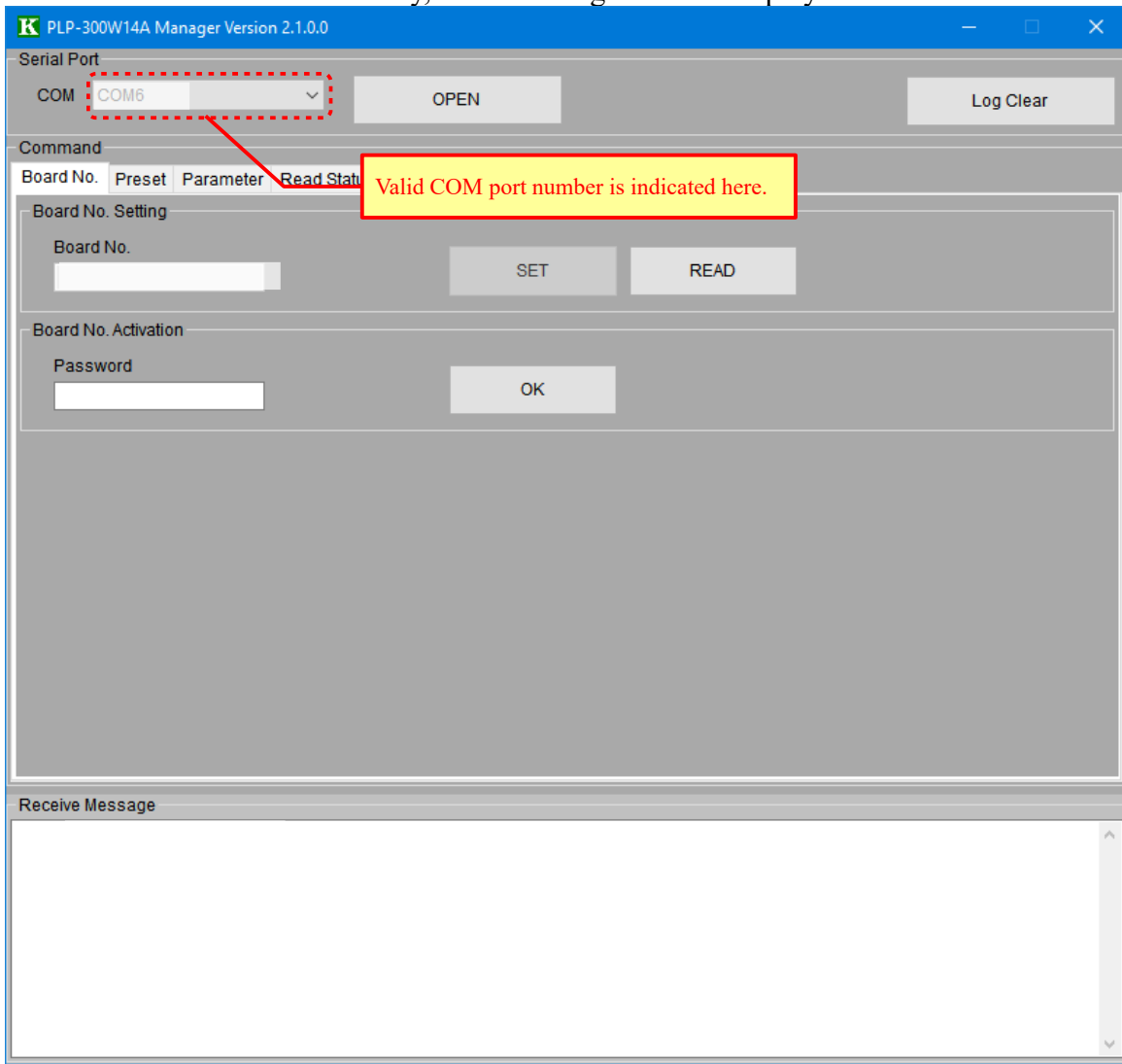
Click "Yes" to close the software and check condition.

(\*) If you click "No", the software is started but it can not communicate with PLP series.

### Confirmation items

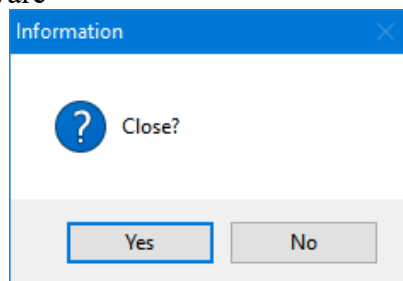
- ✓ Does a power supply of the PLP series become ON?
- ✓ Is the communication cable connected properly?
- ✓ Is device driver for USB installed?

When the software starts normally, the following screen is displayed.



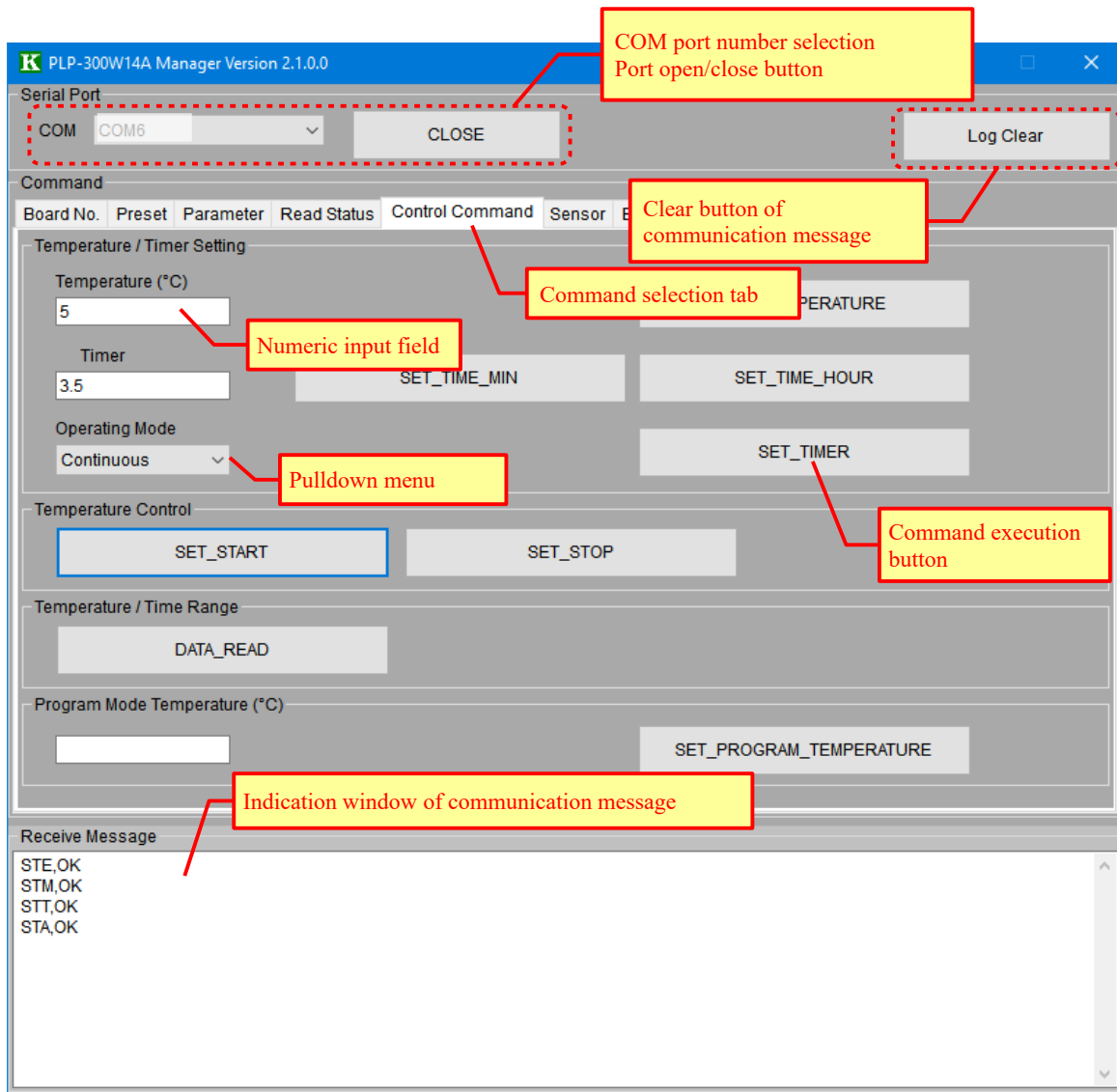
### 5. Close software

Click close button of the window top right corner. A message of close confirmation is indicated. Click "Yes" to close the software

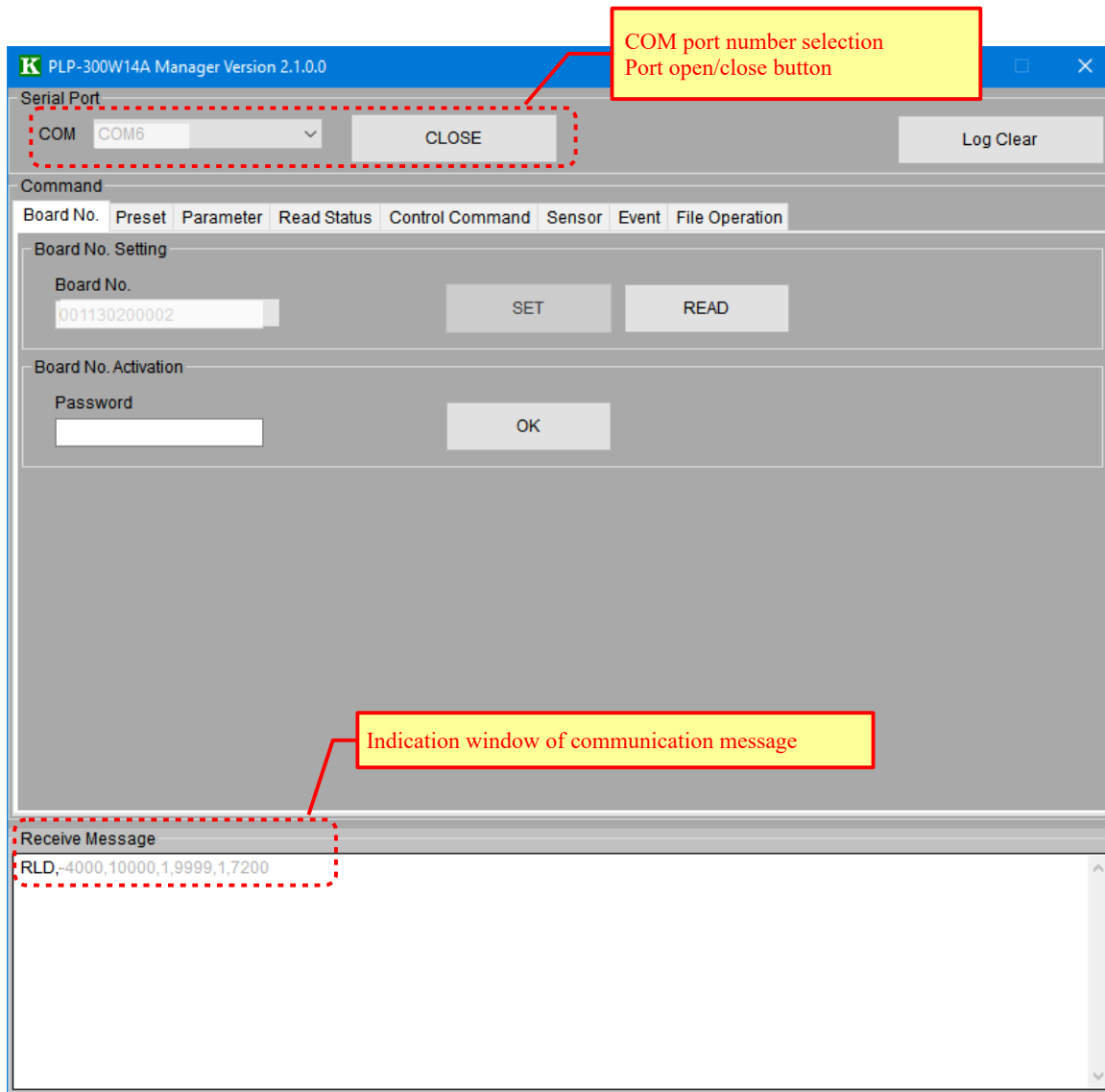


When shut down the power of PLP series or disconnect the communication cable, the software may be hung up and may not operate it. In this case, press [Ctrl]+[Alt]+[Del] keys to start Windows task manager and close "PLP-300W14A Manager.exe" forcibly.

## 6. Screen



## 7. Port Open/Close



### Open COM port

Select COM port and click [OPEN] button. Then the button changes from [OPEN] to [CLOSE].

### Close COM port

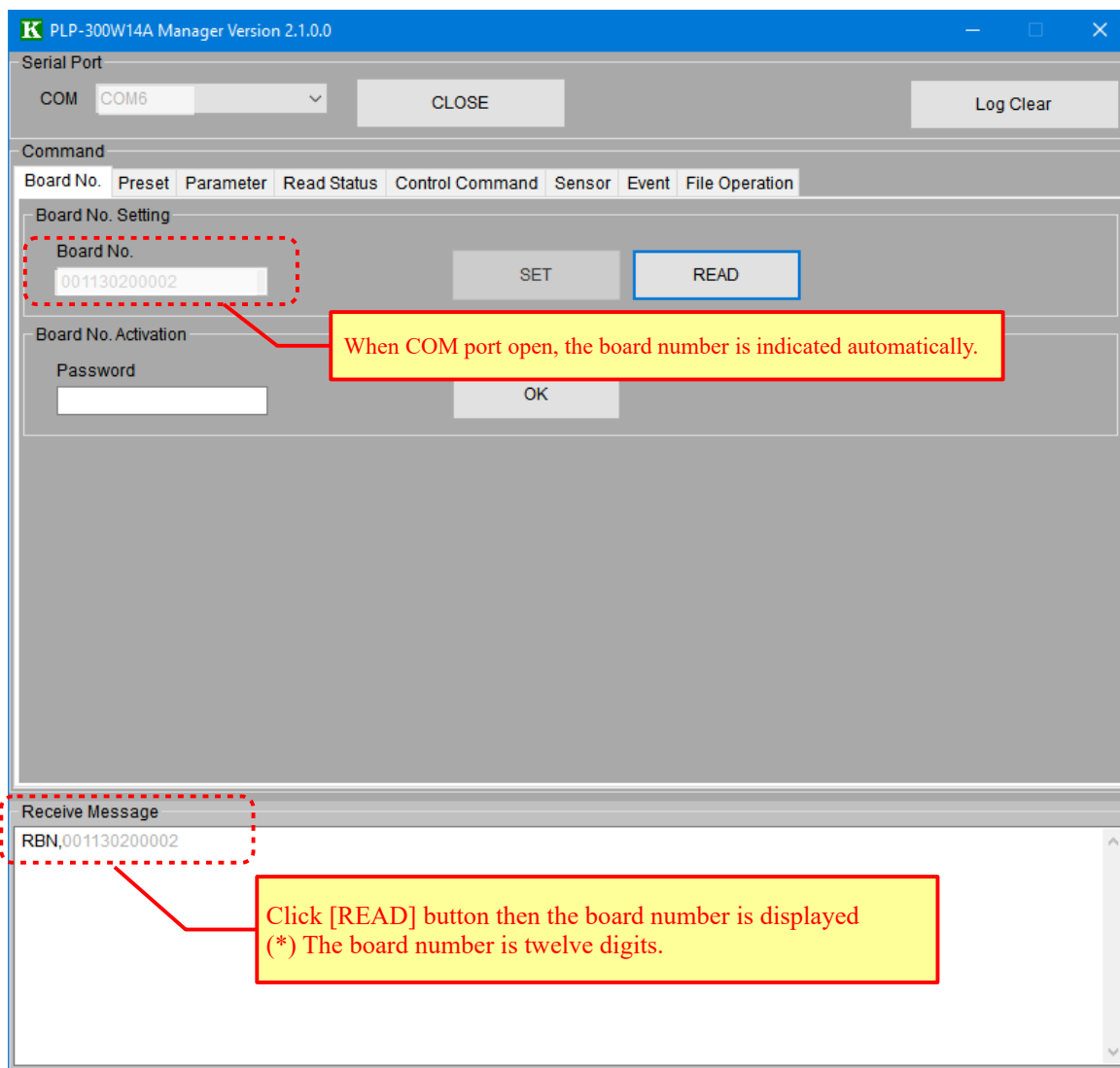
Click [CLOSE] button. Then the button changes from [CLOSE] to [OPEN].



## 8. Board No.

Write and read the board ID number.

**[IMPORTANT]**  
 Never change the board number except a special case.  
 Password is required to change the board number.



Item	Button	Description
Read board number	READ	Read the board number from EEPROM of PLP Series.
Write board number	SET	Write the board number to EEPROM of PLP Series.
Password	OK	Password to input the board number.

## 9. Preset

Setting of various functions of PLP Series.

Please refer to instruction manual of the PLP series for the details of each functions.

The screenshot shows the 'PLP-300W14A Manager Version 2.1.0.0' software window. The 'Serial Port' is set to 'COM6'. The 'Command' tab is active, showing the 'Preset' sub-tab. Under 'Fan Alarm', the 'OFF' radio button is selected. The 'WRITE\_ALARM\_FAN' button is highlighted with a red box. Below the interface, a 'Receive Message' window shows the following text: WAS,OK; RAS,1; WAPOK; RAP,1; WAF,OK; RAF,0; WAC,OK; RAC,1; WAM,OK; RAM,0. A red dashed box highlights 'WAF,OK' and 'RAF,0'. A yellow callout box with a red border contains the following instructions:

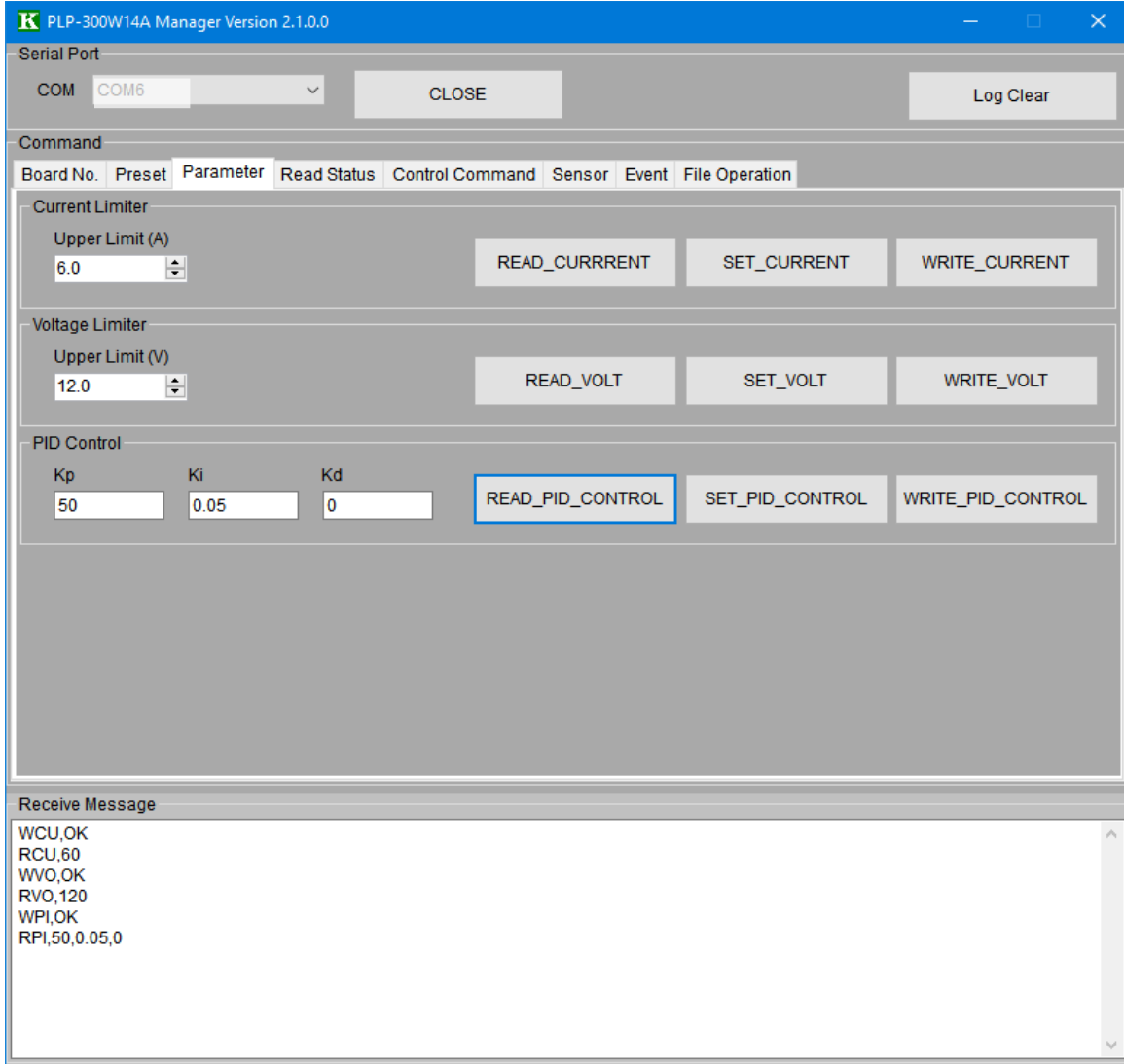
- 1) Check [Fan Alarm] radio button in OFF and click [WRITE\_ALARM\_FAN] button.  
Command response; WAF,OK
- 2) Click [READ\_ALARM\_FAN] button.  
Command response: RAF,x  
x=1:Fan Alarm ON, x=0:Fan Alarm OFF

Item	Button	Command Response
Sensor Alarm	READ_ALARM_SENSOR WRITE_ALARM_SENSOR	RAS,x (x=1:ON,x=0:OFF) WAS,OK
Power Supply Alarm	READ_ALARM_POWER WRITE_ALARM_POWER	RAP,x (x=1:ON,x=0:OFF) WAP,OK
Fan Alarm	READ_ALARM_VOLT WRITE_ALARM_VOLT	RAF,x (x=1:ON,x=0:OFF) WAF,OK
System Alarm	READ_ALARM_SYSTEM WRITE_ALARM_SYSTEM	RAC,x (x=1:ON,x=0:OFF) WAC,OK
Sub Sensor Alarm	READ_ALARM_MON WRITE_ALARM_MON	RAM,x (x=1:ON,x=0:OFF) WAM,OK

## 10. Parameter

Setting of various parameters of PLP Series.

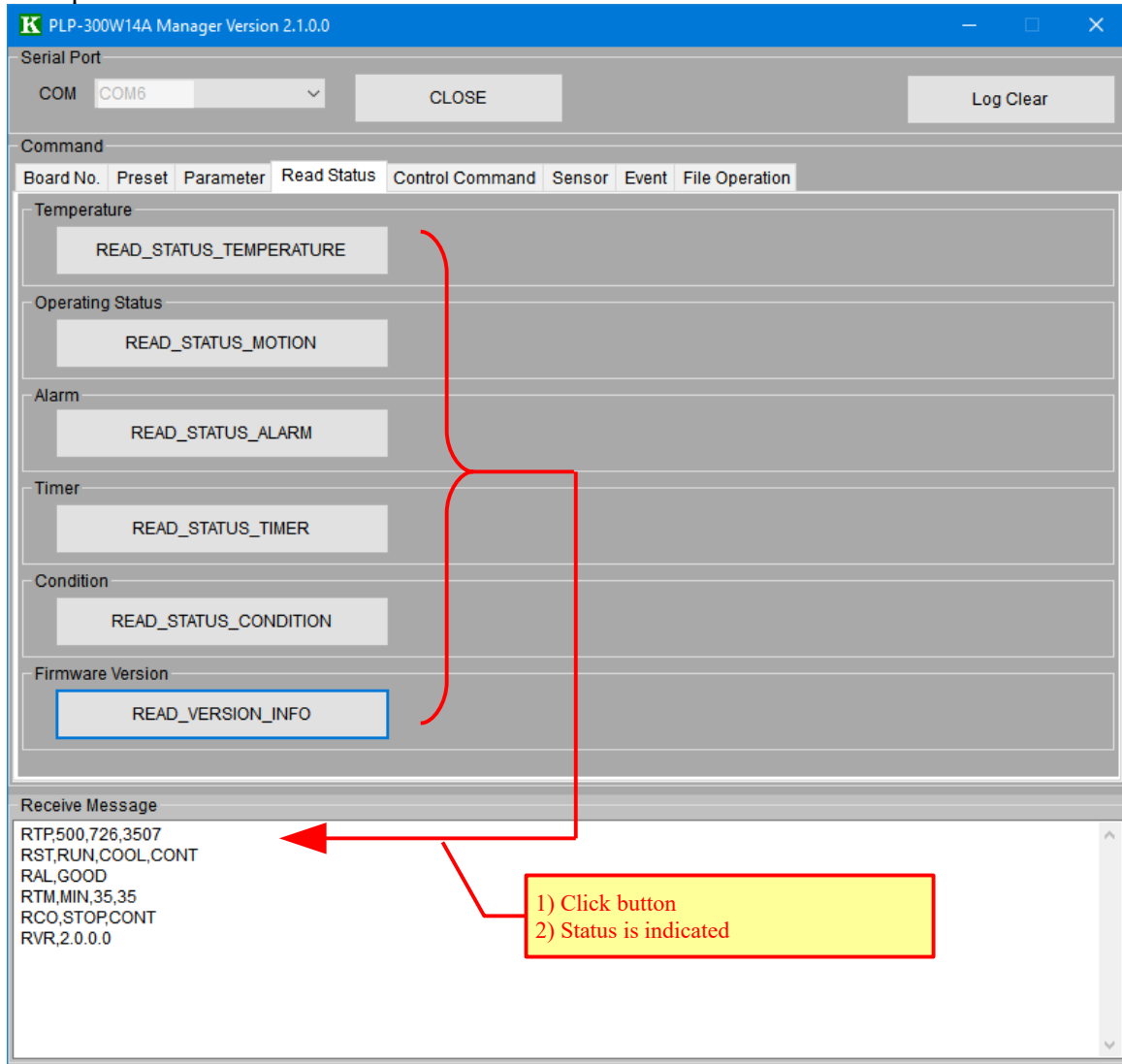
**[IMPORTANT]**  
 If you set wrong parameter, temperature control operation may be unstable or malfunctioning.  
 Please do not change parameter carelessly.  
 For more detail, please refer to technical manuals.



Item	Button	Description
Current Limiter	READ_CURRENT SET_CURRENT WRITE_CURRENT	Set maximum current of Peltier drive. In case of PLP-300W14A, allowable range is from 0A to 14A by 0.1A step. *SET_CURRENT: The setting value is not written to EEPROM. *WRITE_CURRENT:The setting value is writtento EEPROM.
Voltage Limiter	READ_VOLT SET_VOLT WRITE_VOLT	Set maximum voltage of Peltier drive. In case of PLP-300W14A, allowable range is from 0V to 24A by 0.1A step. *SET_VOLT: The setting value is not written to EEPROM. *WRITE_VOLT:The setting value is written to EEPROM.
PID Control	READ_PID_CONTROL WRITE_PID_CONTROL	PID Control parameter Kp: Proportional, Ki: Integral, Kd: Differential

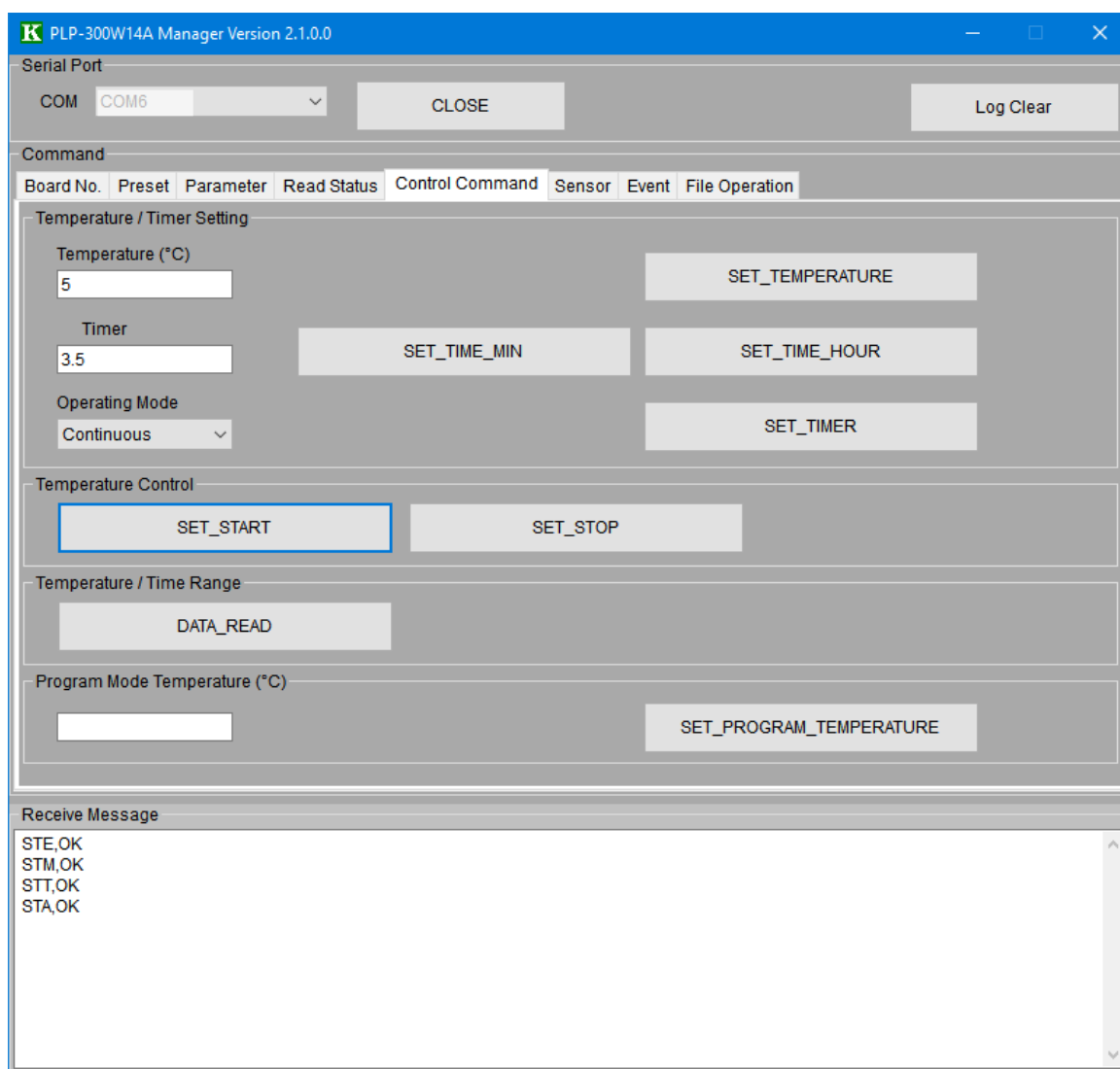
## 11. Read Status

Read present status.



Item	Button	Response
Temperature	READ_STATUS_TEMPERATURE	RTP,(setting value),(present value) (ex.) 1883: 18.83deg Celsius
Operating Status	READ_STATUS_MOTION	RTP,(operation),(polarity),(timer/continuous)
Alarm	READ_STATUS_ARARM	RAL,(alarm status) GOOD/SENSOR/POWER/FAN/PELTIER
Timer	READ_STATUS_TIMER	RTM,(minute/hour),(setting time),(remain time)
Condition	READ_STATUS_CONDITION	RCO,(START/STOP),(CONT/TIMER) (*) Switch status on PLP Series.
Source Version	READ_VERSION_INFO	RVR,(version) (*) Firmware version of PLP Series

## 12. Control Command



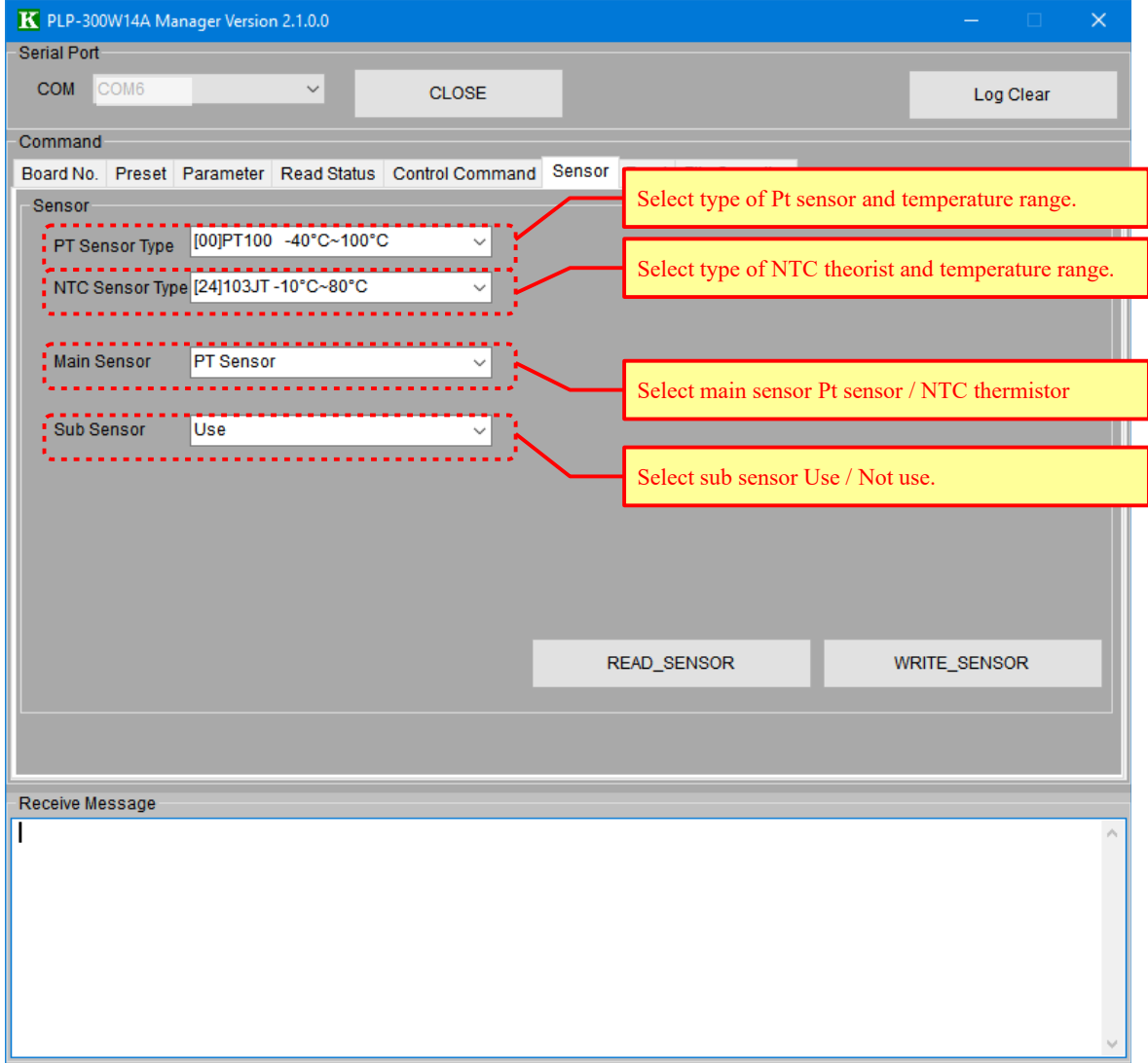
Item	Button	Description
Temperature	SET_TEMPERATURE	Input by 0.1deg Celsius
Timer(minute)	SET_TIME_MIN	Input by 0.1minute
Timer(hour)	SET_TIME_HOUR	Input by 0.1hour
Operating Mode	SET_TIMER	Select Continuous Mode / Timer Mode
Temperature Control	SET_START/SET_STOP	START / STOP of temperature control operation
Temperature / Time Range	DATA_READ	Read temperature range and time range RLD,(temperature min),(temperature max),(minute min),(minute max),(hour min),(hour max) (ex.) RLD,-1000,8000,1,9999,1,7200 Temperature: -10~80deg, Time(minute):0.1~999.9min, Time(hour):0.1~720hour
Program Mode Temperature	SET_PROGRAM_TEMPERATURE	Temperature setting command for program mode (SPT command ~ Do not write to EEPROM) Input by 0.1deg Celsius

(\*) Error message is displayed when you input a value out of the set range.

### 13. Sensor

Select type of temperature sensor and temperature range.

**[IMPORTANT]**  
 If you change setting by mistake, it may not acquire right temperature.  
 Please do not change setting carelessly.  
 Depending on the type of the temperature sensor, it may be required hardware change.



Item	Button	Description
Read sensor setting	READ_SENSOR	Read a type of sensor and a temperature range. (*) No message in message window.The pull-down menu is updated.
Write sensor setting	WRITE_SENSOR	Write a type of sensor and a temperature range. (*) All related parameters are written by batch.

The type of sensors and the temperature range which can be selected in a pull-down menu are listed below.

(\*) If you want to support unlisted sensor, please contact to Kurag Electronics Peltier Controller support.

E-Mail: [kurag.tslab@biz.nifty.jp](mailto:kurag.tslab@biz.nifty.jp)

#### Pt sensor

Type of sensor	Temperature range	Detection current	Remarks
Pt100	-40°C~100°C	1mA	IEC Pub.751-1995 conformity
Pt500	-40°C~100°C	0.2mA	
Pt1000	-40°C~100°C	0.1mA	

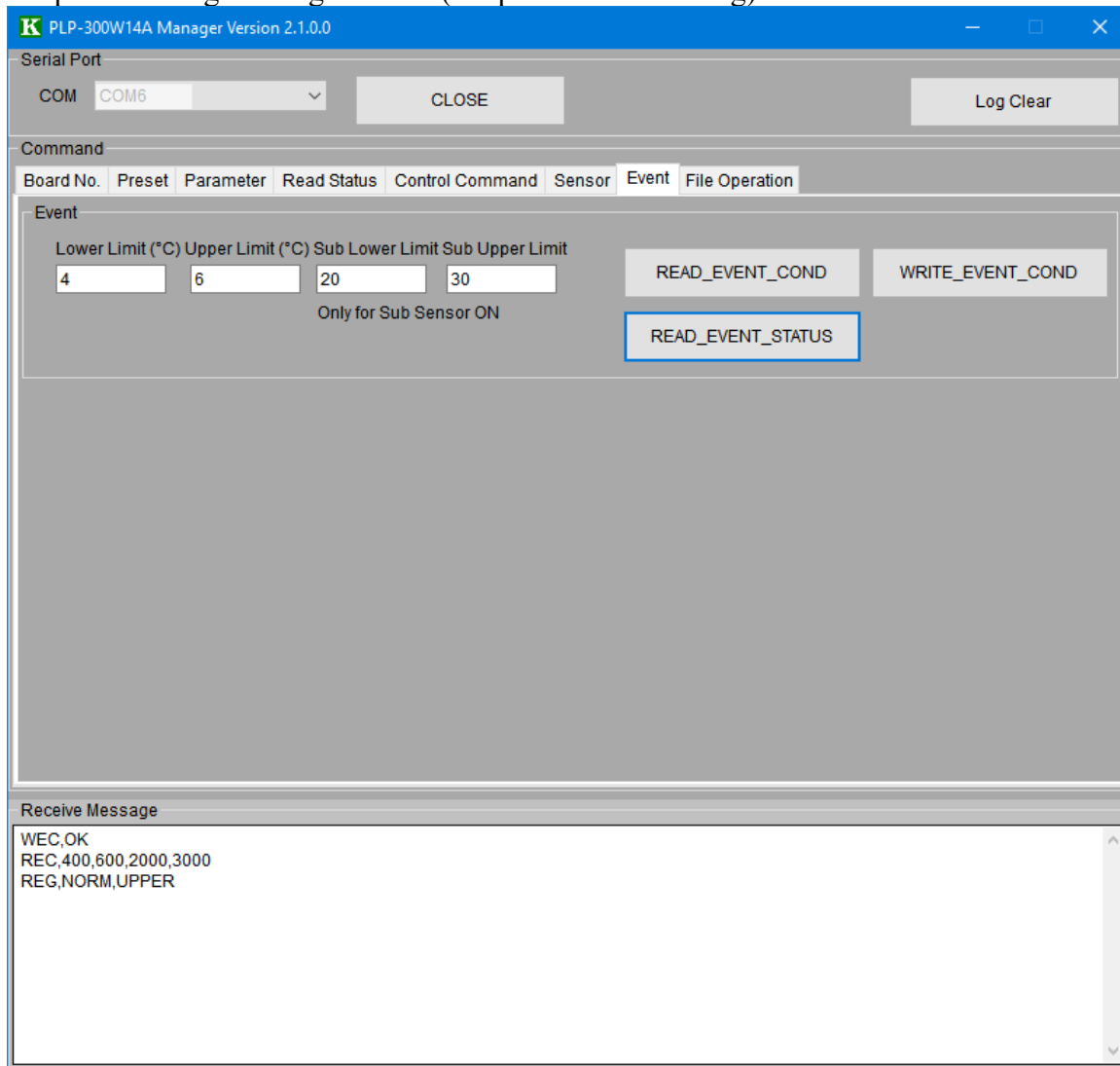
#### NTC thermistor

Supplier	Number	R25[ohm]	B[K]	Temperature range	Detection current	Remarks
SEMITEC	103AT	10k	3435	-10°C~80°C	15uA	
				0°C~50°C	23uA	
					-30°C~60°C	5uA
	103JT	10k	3435	-10°C~80°C	15uA	
				0°C~50°C	23uA	
				-30°C~60°C	5uA	
	103KT	10k	3435	-10°C~80°C	15uA	
MURATA	NCP15XH103	10k	3380	-10°C~80°C	15uA	
	NCP15WF104	100k	4250	-10°C~80°C	1uA	

(\*) The detail characteristics of each sensor please refer to the supplier's data sheet.

## 14. Event

Temperature range setting of event (temperature monitoring) function.



Item	Button	Description
Read event temperature	READ_EVENT_COND	Read event temperature settings (ex.) REC,900,1100,2000,3000 Main sensor: Lower limit =9°C, Upper limit=11°C Sub sensor : Lower limit=20°C, Upper limit=30°C
Write event temperature	WRITE_EVENT_COND	Write event temperature settings
Read event status	READ_EVENT_STATUS	Confirm event status (Current temp.) < (Lower limit): LOWER (Lower limit) < or = (Current temp.) < or = (Upper limit): NORM (Current temp.) > (Upper limit): UPPER

(\*1) During event is occurred, the ALARM LED is lights on.

(\*2) During event is occurred, the temperature control operation does not stop.

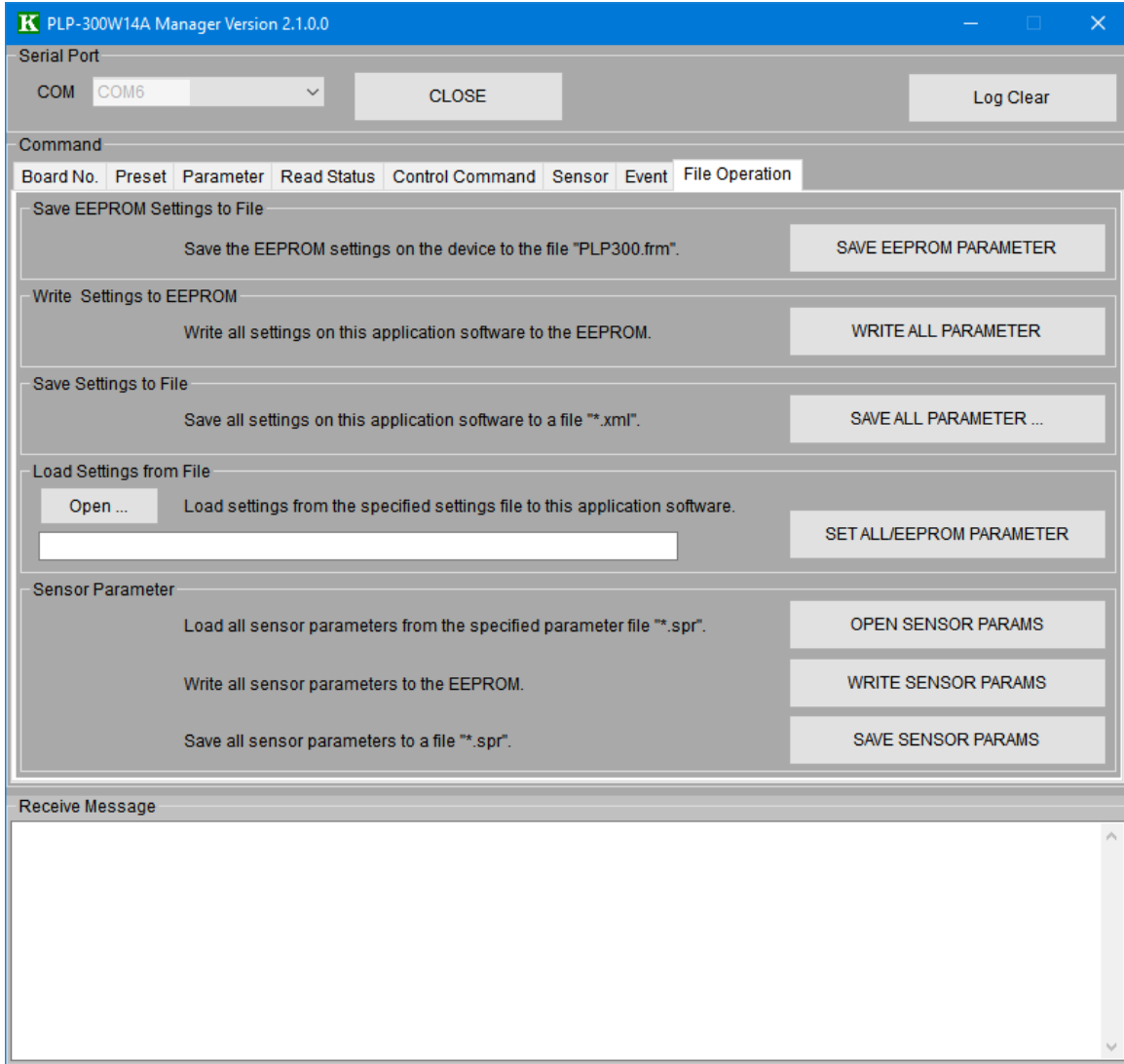
(\*3) Setting of sub sensor is effective when the sub sensor is active.

(\*4) When the Event Function is not used, set all value to "0".



## 15. File Operation

All EEPROM data including the setting values and the parameters for the PLP series can be read out, and it can be stored in a file. Moreover, all the setting values and the parameters which are read out from the file can be written to EEPROM of PLP series. By saving it in a file before changing the setting values and the parameters, it will be able to roll back them to the original ones later.



Item	Button	Description
Save EEPROM Setting to File	SAVE EEPROM PARAMETER	Read EEPROM data of PLP Series at once. And save temporary PC file.
Write setting to EEPROM	WRITE ALL PARAMETER	Write all values and parameters which set this software to EEPROM of PLP Series at once.
Save Setting to File	SAVE ALL PARAMETER	Save all values and parameters which set this software to PC file (xml format) at once.
Load Setting from File	SET ALL/EEPROM PARAMETER	Load fall values and parameters which saved file to this software.
Sensor Parameter	OPEN SENSOR PARAMS WRITE SENSOR PARAMS SAVE SENSOR PARAMS	Open sensor parameter file. (.spr) Write the sensor parameters to EEPROM. Save the sensor parameters to PC file.

## Operating procedure

### 1) Save EEPROM setting to PC file

Click [SAVE EEPROM PARAMETER] button. Read EEPROM data of PLP Series at once. And save temporary PC file (named "PLP300.frm").

(\* ) Cannot change file name. When "PLP300.frm" already exists, it is overwritten.

(\* ) At this timing, the set values and parameters are not reflected to screens of this software.

It is necessary reading operation from PC file to let you reflect it to this software.

### 2) Load setting from PC file

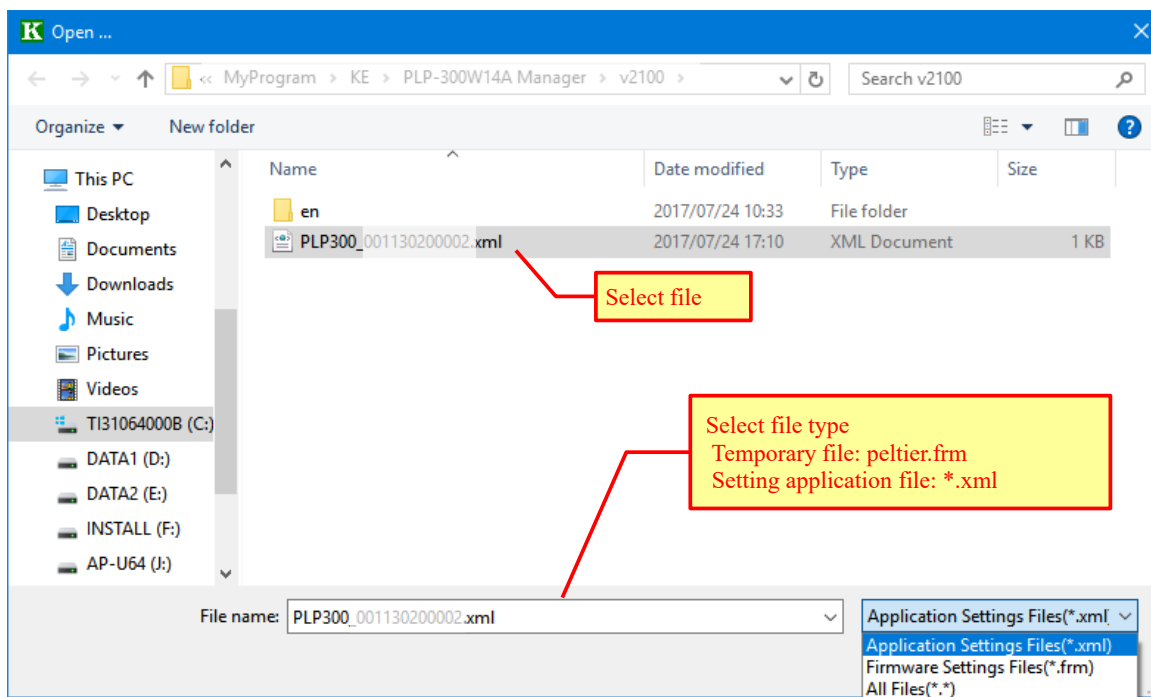
Load temporary file(PLP300.frm) or setting application file(file extension: .xml).

And reflect to screens of this software.

Click [OPEN] button.

Select file and open.

Click [SET ALL/EEPROM PARAMETER] button.



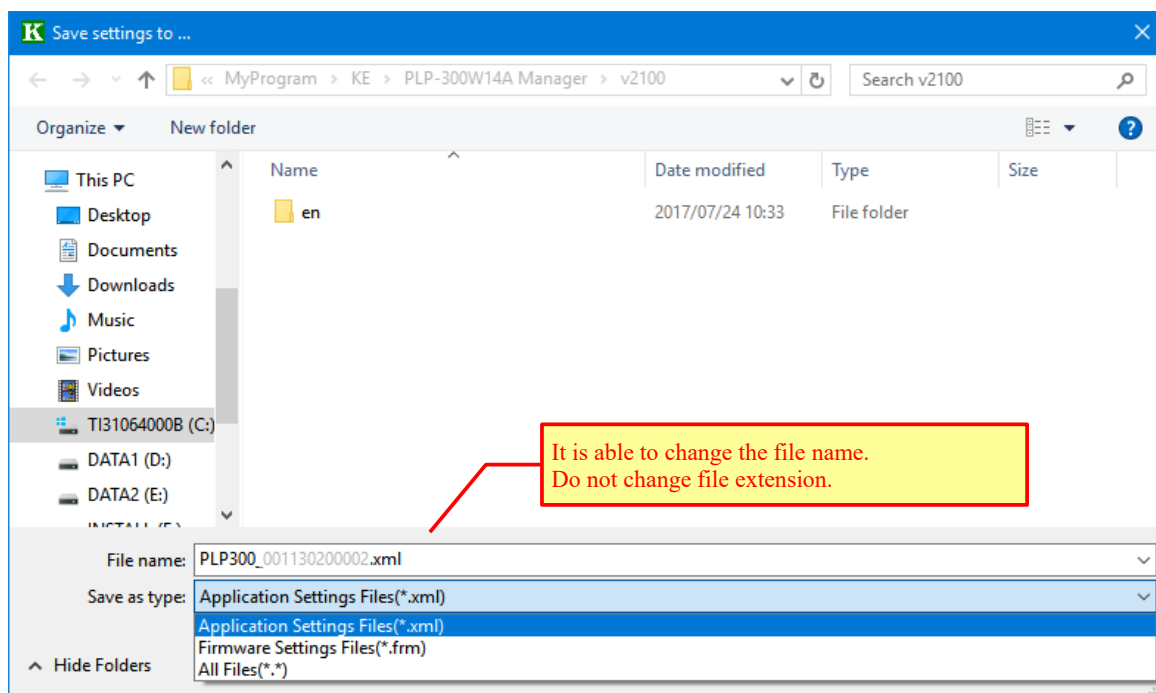
**3) Save application setting to PC file**

Click [SAVE ALL PARAMETER] button

Save all values and parameters which were set by this software to PC file (xml format) at once.

(\*) Default file name is "PLP300\_(Board Number).xml". It is able to change the file name.

(\*) Saved values and parameters in this operation are values and parameters which set this software. It is not EEPROM data of PLP Series.

**4) Write to EEPROM**

Click [WRITE ALL PARAMETER] button.

Write all values and parameters which were set by this software to EEPROM of PLP Series at once.

**Procedure to restore the changed setting to the original setting**

- 1) Save EEPROM data by [SAVE EEPROM PARAMETER] button before changing.
- 2) Load "peltier.frm" by [SET ALL/EEPROM PARAMETER] button to reflect to screens of this software.
- 3) Change value or parameter. Save values and parameters by [SAVE ALL PARAMETER] button as necessary.
- 4) If you want to restore the setting, reload "peltier.frm" by [SET ALL/EEPROM PARAMETER] button.
- 5) Write original setting to EEPROM by [SET ALL/EEPROM PARAMETER] button.

**5) Sensor Parameter**

It is used for unlisted sensor parameters.

For more detail, please contact to T.S. LABORATORY Peltier Controller support.

## Revision History

Rev.	Date	Description	Editor
1.00	10/04/2014	Initial release	Y.O
2.00	11/05/2014	Hardware Ver3.00, Firmware Ver2.0.0.0	Y.O
2.01	04/02/2015	Software Ver2.0.0.2	Y.O
2.02	04/06/2015	Correction of writing errors.	Y.O
2.10	04/17/2017	Change the support window from T.S.Laboratory to KURAG ELECTRONICS	Y.O
2.30	07/24/2017	Software Ver2.1.0.0 Change name of program from "PLP300_MEAS" to "PLP-300W14A Manager".	Y.O

**Universal Peltier Driver PLP Series**  
**Setting Software**  
**"PLP-300W14A Manager.exe"**  
**Operating Manual**  
 ( Rev.2.30 )

July 24, 2017

Kurag Electronics LLC  
 URL: <http://kurag.o.oo7.jp/kurag-el/>