# QSS-3000

Ｖｅｒ３．０．１

Concentrated temperature management & telecommunication system for soldering irons

ＵＳＢ version

## Instruction manual

Preparation in September 2008

The 3rd edition

JAPAN BONKOTE CO., LTD.

BONKOTE

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# Introduction

## What is ＱＳＳ－３０００?

QSS-3000 is an innovative quality control system for manual soldering in the electric component industry that monitors and records soldering work temperature by using a computer. QSS-3000 monitors the whole process of the manual soldering operation, which prevents defective soldering with the data that is based on scientific evidence. This in-process quality control system enables the company to save a lot of cost in quality control activities while improving the soldering process.

【 Features 】

- LA(Load Application temperature control)-type soldering irons are connected to a PC and each soldering work temperature data is monitored, collected and saved by the PC.
- It is designed to control 95 LA(Load Application temperature control)-type soldering irons at a maximum with 4 repeaters. (One repeater is required every 30 controllers)
- The Alarm function is activated when the iron tip temperature exceeds the maximum temperature range or falls below the minimum range. And the time and the temperature of the alarm activation is saved in the hard disk.
- Saved temperature data can be compiled and indicated in graph and printed by MS Excel. (CSV file)
- Control each controller's temperature setting, PID parameters, auto-tuning setting, etc. from one PC.

## Usage Environment

| | |
|---|---|
| Communication port | USB Serial Port　Choose from COM1～COM8 |
| Data Throughput | 19200bps |
| OS | Windows98／Me／NT4.0／2000／XP |
| CPU | Intel PentiumⅢ compatible (800MHz or more)<br>*Please note that correct operation is not guaranteed when using other processor. |
| PC RAM | The memory capacity that the OS guarantee. |
| Display resolution | 1024×768　256 colors or more　Screen font(small) |

*Need to use CDROM drive only when installing the software.

# Configuration and Connection

## QSS-3000 System Configuration

・Soldering iron　　Patriot M50 series

| | |
|---|---|
| Controller | Ｍ５０ |
| Soldering iron | ＴＢseries |

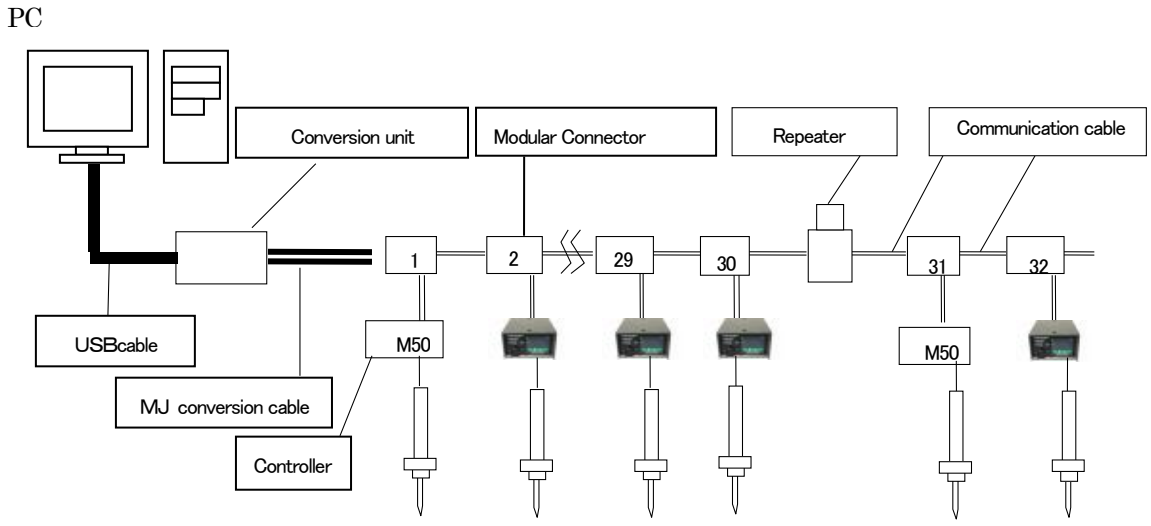
・Software　ＱＳＳ－３０００ (Version3.0.0)

| | |
|---|---|
| Software | 1 ＣＤ－ＲＯＭ　　(Ver3.0.0) |
| Instruction manual | 1 copy |

・Other equipment

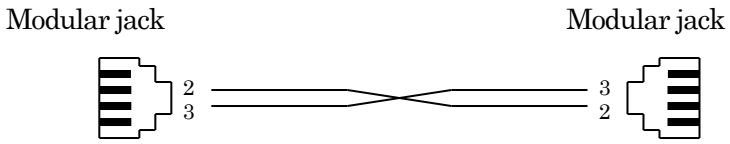
| Name | Model No. | Company | Details |
|---|---|---|---|
| Conversion Unit | USB-485 | System Sacom Corp. | With a USB cable |
| MJ conversion cable | | | ・RJ45→RJ11<br>・Modular jack conversion<br>・Cross over cable |
| Repeater | One repeater is needed at 30 controllers each. | | |
| OS* | Windows98／Me／NT4.0／2000／XP | Microsoft Corp. | |
| Communication cable* | Phone cable<br>(6 conductor 2 pole) | | ・RJ11Modular jack<br>・Straight though cable |
| Modular connector* | HC-T50-W | Victor Corp. | |
| PC* | PC/AT compatible | | |
| Printer* | Compatible with Windows | | |

*:available to use your own.



Note for connecting QSS-3000

＊Please use straight though cable for communication cable.




Connect 2pin to 2pin
Connect 3pin to 3pin

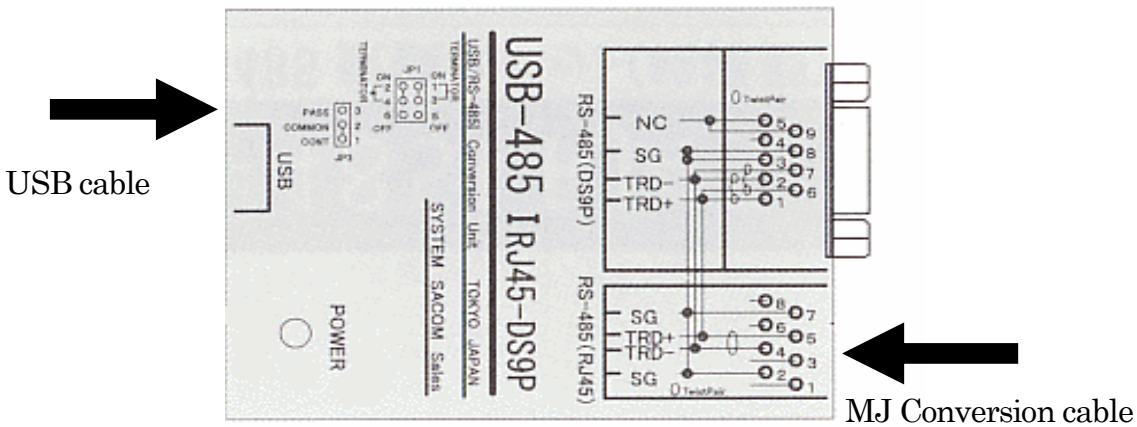
＊ Be sure each pin from each modular jack corresponds with one another.

## Configuring QSS-3000 Units

1 Installing USB-485 Conversion unit driver

Please install USB Device driver of USB-485I Conversion unit on your PC or laptop.

2 Connect MJ Conversion cable (RJ45) and USB cable to Conversion unit

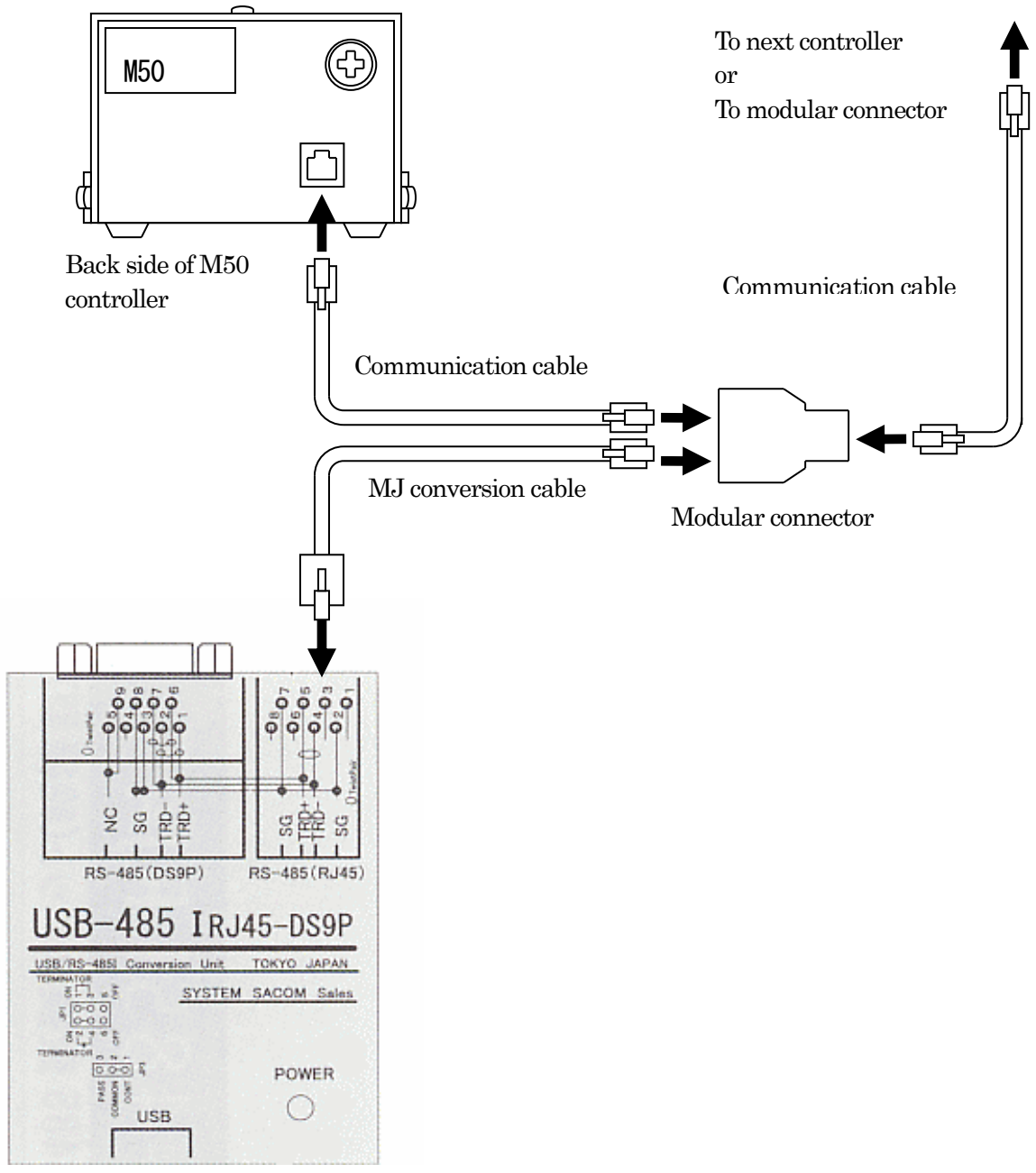


3 Connect USB cable to PC

Connect USB cable to USB port of the PC. Then, set up communication port.

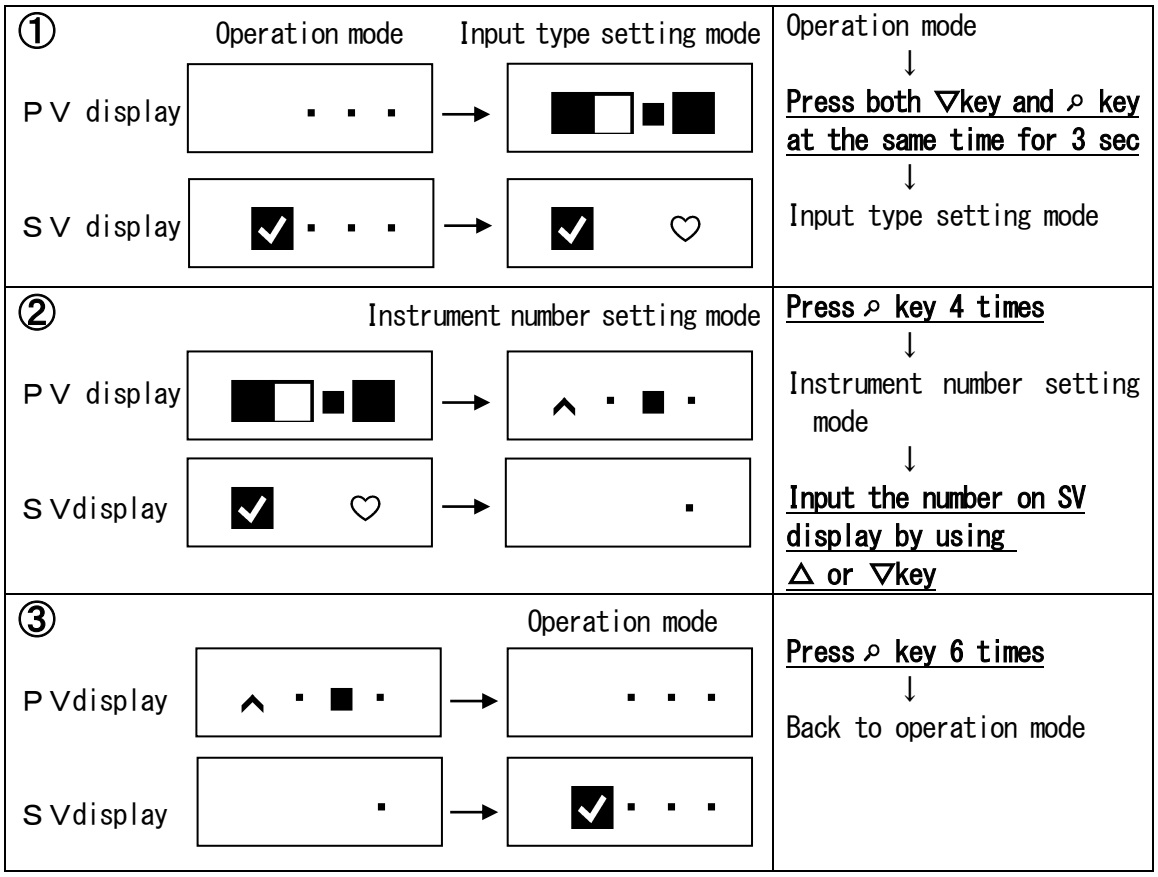
(Refer P. 9～P. 11)

4 Connect M50 controller to Conversion unit with communication cable.




Conversion unit

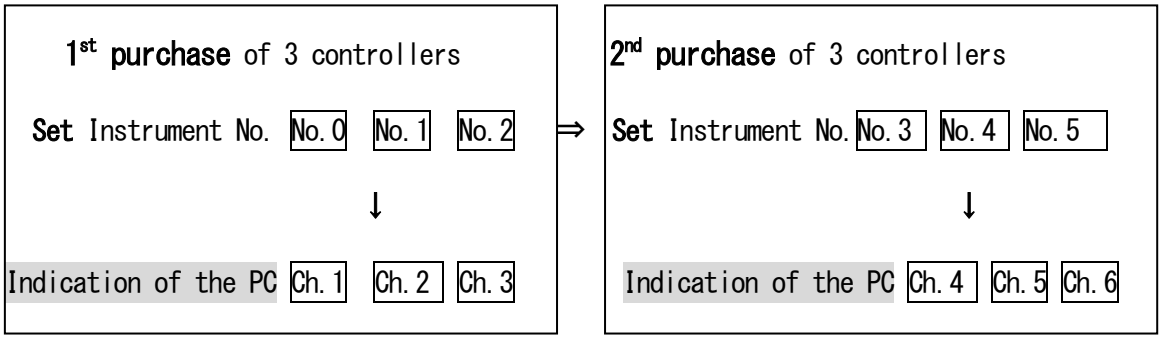
5 Turn on M50 controller. Set the ID number of each controller.




* The setting range of the instrument number is from 0 to 94.

* Be sure to start instrument numbers from 0 (zero), otherwise monitoring software will not start. (Indication of the PC will be Ch. 1, for the instrument number "0 ")

* For the next purchase, please make sure to set the instrument number that starts in serial order from the last number of the previous purchase.




*The channel names can be changed manually. However, the instrument numbers are unchangeable.

# Installing QSS-3000 Software

## Setting port speed and preparation for installation

- **Disconnect** all software, screen saver, virus checker and system agent.
- **Check the PC clock** and adjust the time if it doesn't show correct time in order to activate QSS-3000 correctly.
- **Check the display resolution**. It requires to be in 1024×768 pixel mode or more.

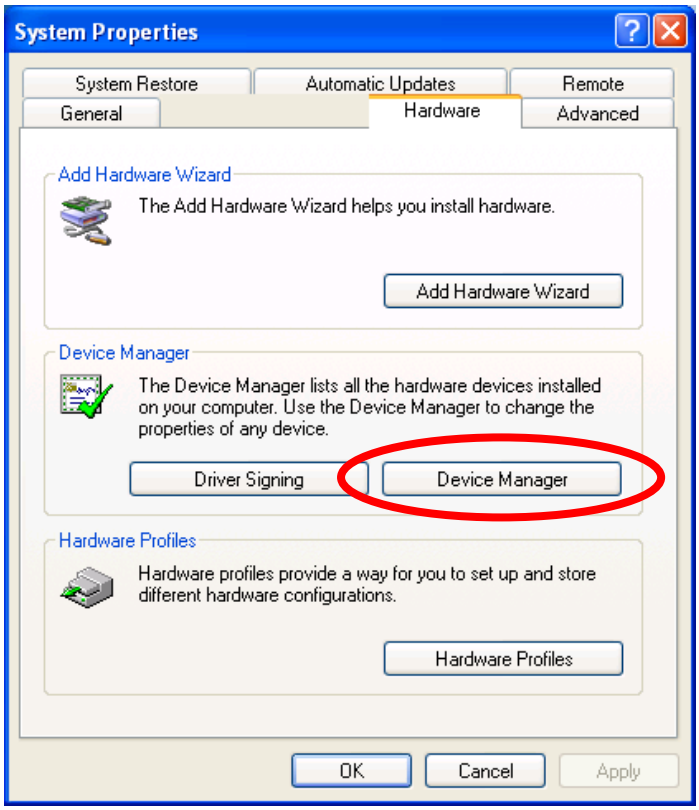
## Setting port speed

① Right-click the "My Computer" Icon.

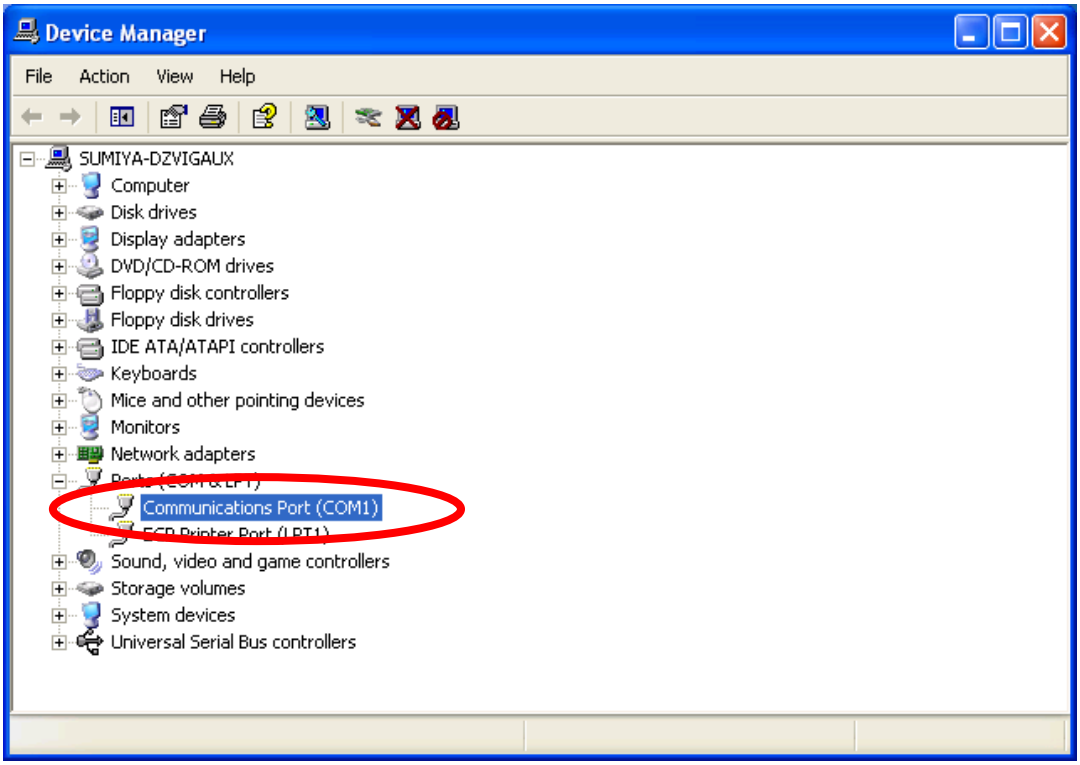
② Select properties from the context menu.

③ In the System Dialogue, select the Device manager Tab.

* If the communication port is not displayed, change the setting on your PC.

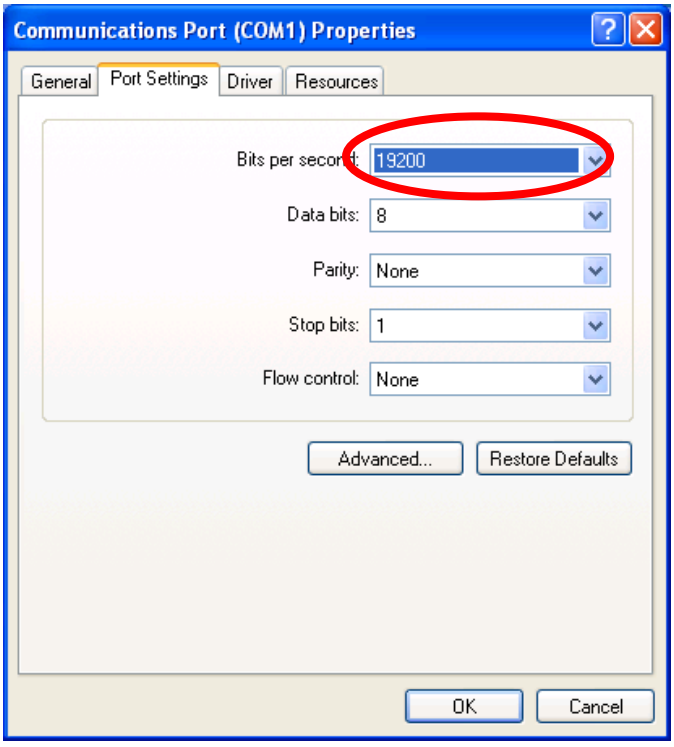


④ Right-click USB Serial Port.

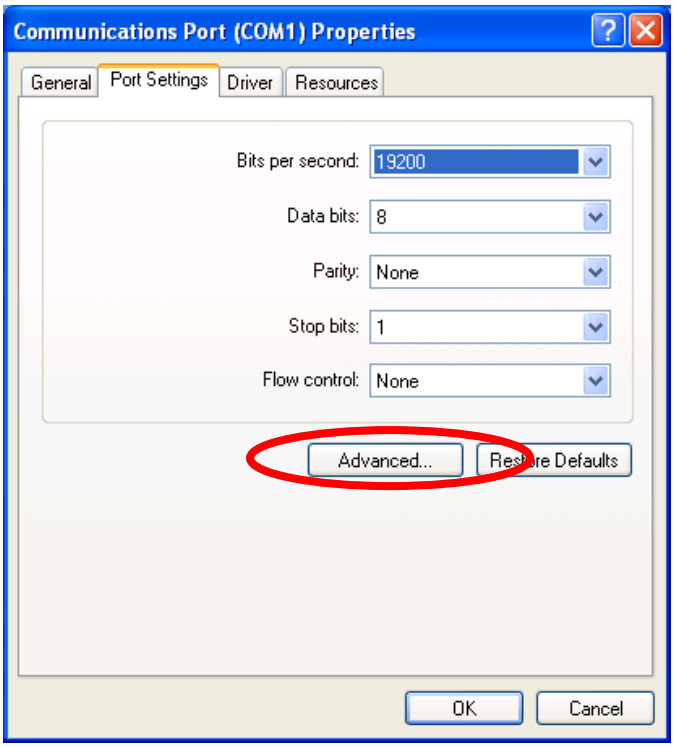



⑤ Click [Properties]

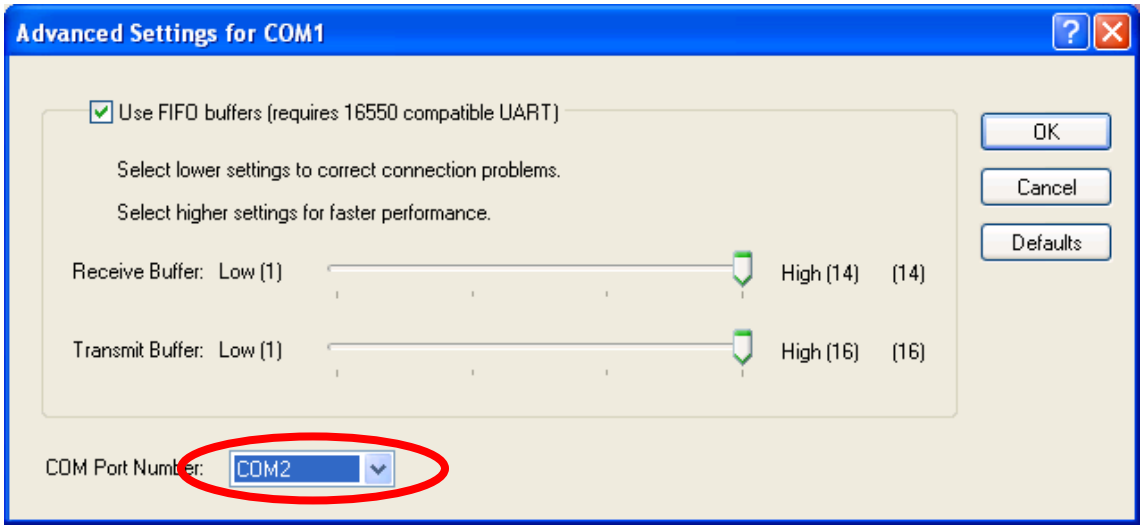
⑥ Select the Port Settings tab. In the bits per second field, set 19200 bps.



⑦ Click Advanced.




⑧ Select COM Port Number from COM1 ～ COM8 to activate QSS-3000.



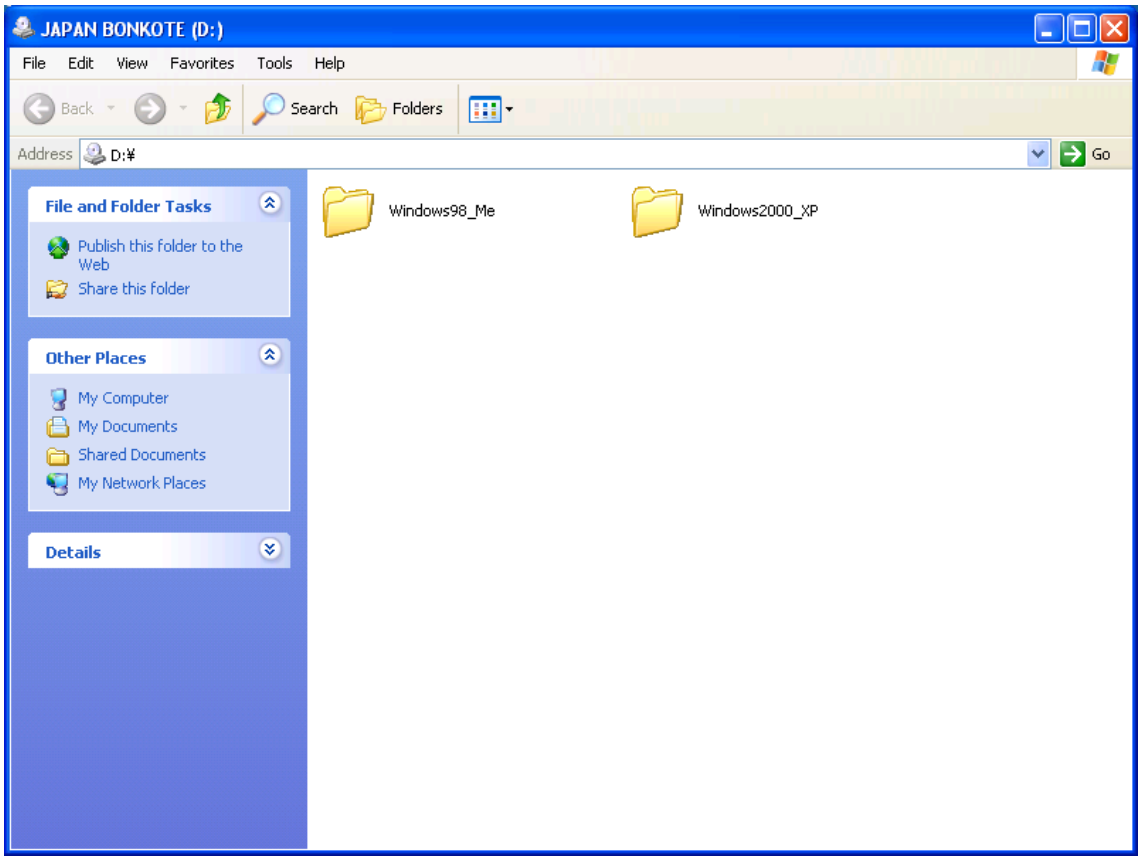
## Installing QSS-3000 software

1 Insert the QSS-3000 CD in the CD-ROM drive on the PC.

2 Select CD-ROM drive from Explorer or open it from the “My Computer”.

3 Click Win2000 folder if you are using Windows NT4.0／2000／XP.

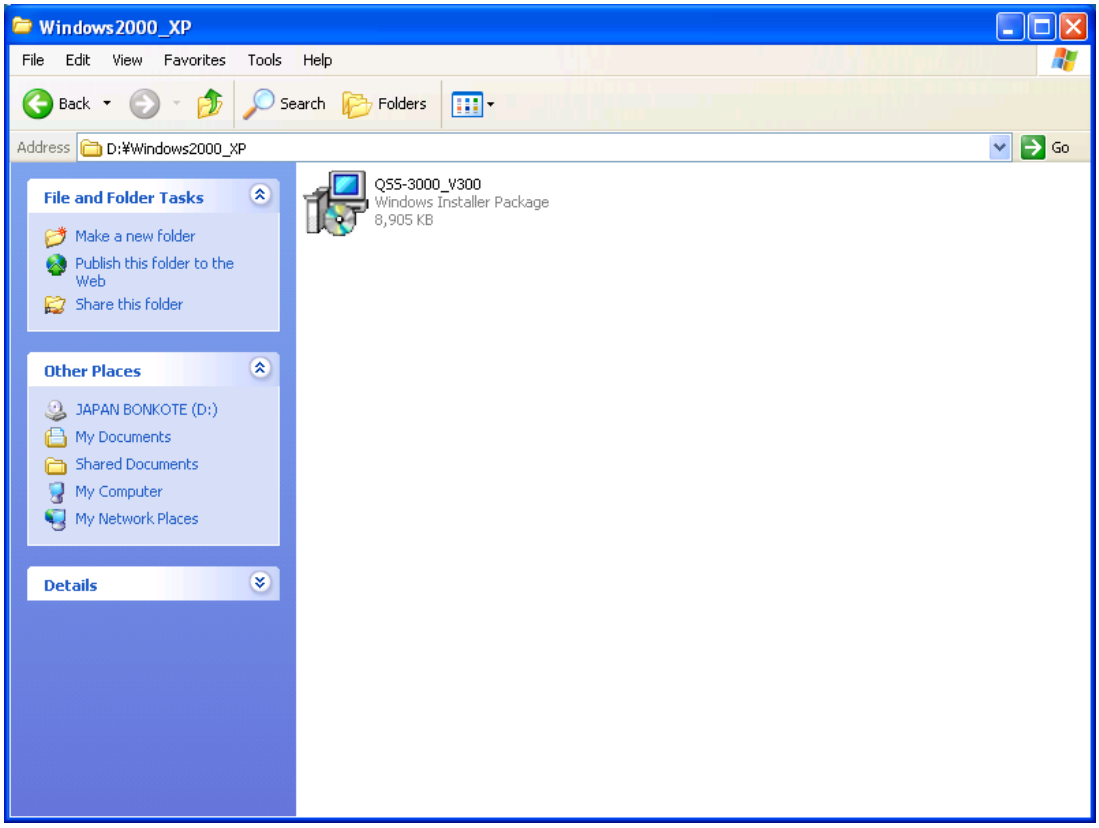
Click WIN98 folder if you are using Windows98.



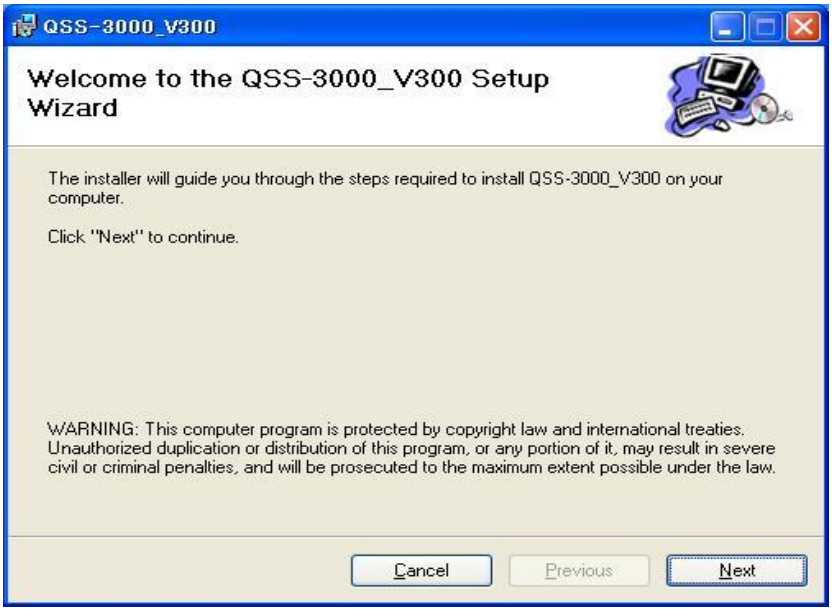
4 Click QSS-3000 V300

※ The instruction below is based on Win2000.

If you are using Win98 or Me, some of the displays will not the same.



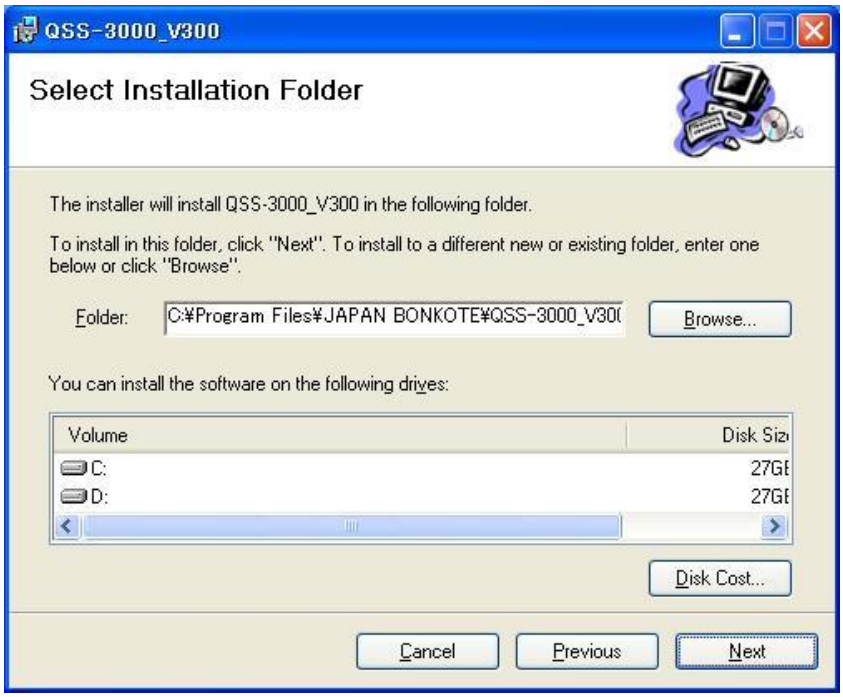

5 The Installation program will guide you through the installation process.



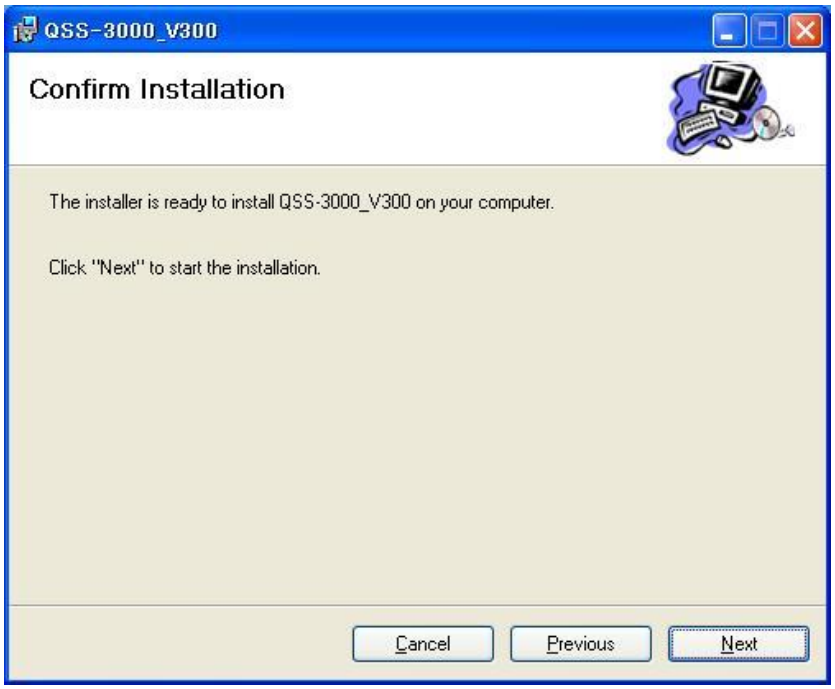
6 Click Next

Caution! Do not change the folder.

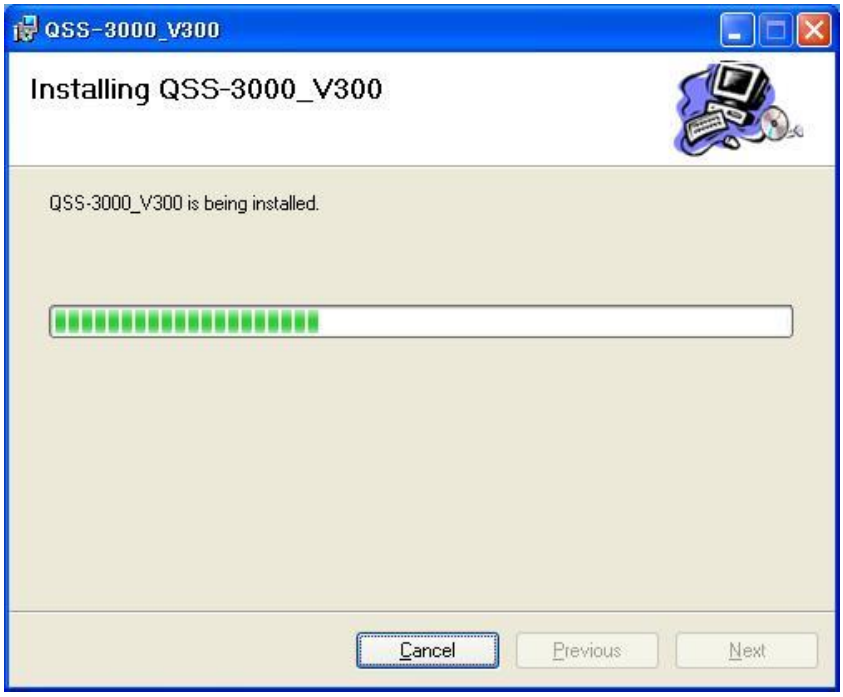
Only "C:¥Program Files¥JAPAN BONKOTE¥QSS-3000_V300¥" can activate QSS-3000.



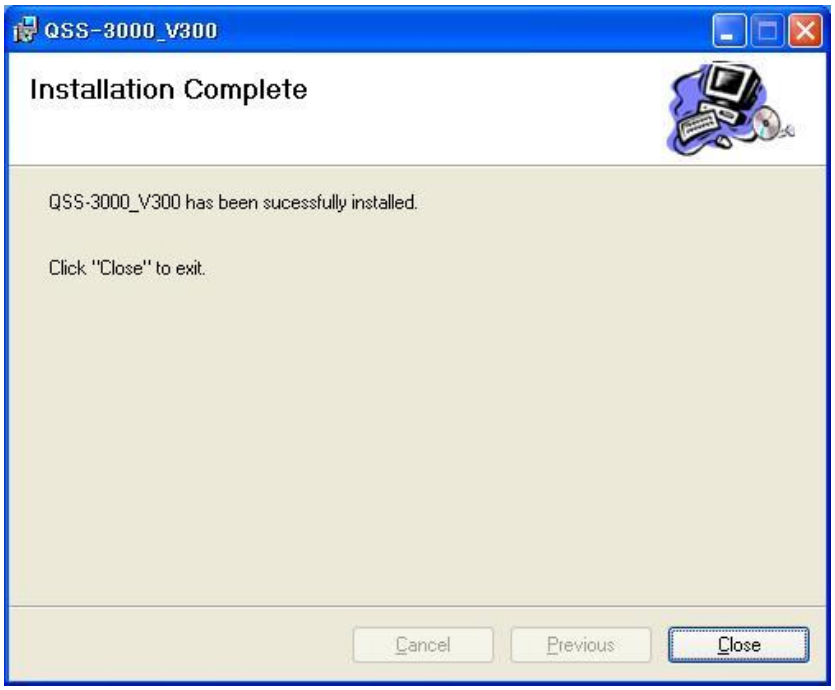

7 Click Next to start the installation.



8 QSS-3000_V300 is being installed.




9 Click Close to exit.




This is the end of the installation

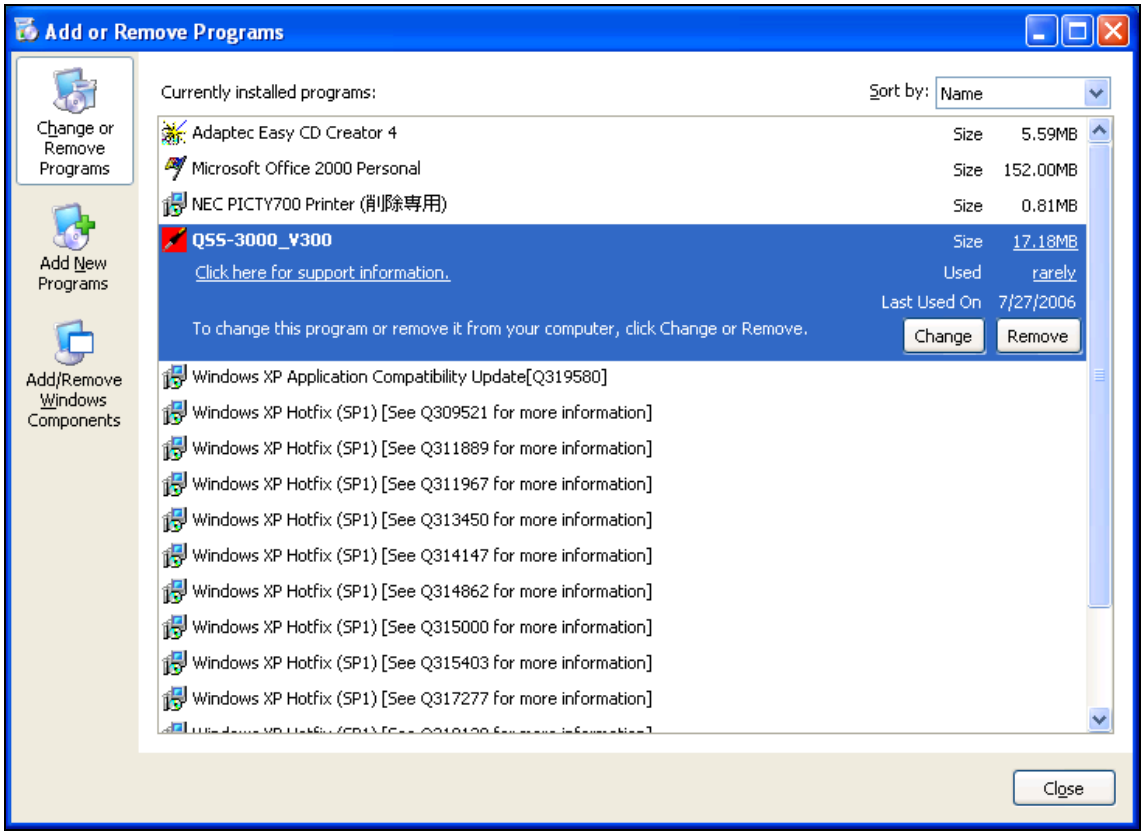
＊If an error message occurs after the installation, please reactivate the PC.

## How to uninstall QSS-3000 ?

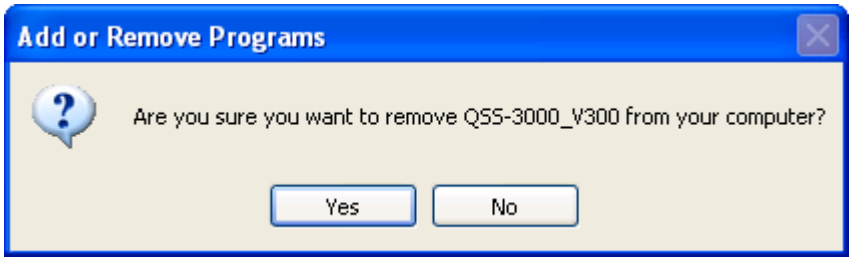
1 [Start]→[Control panel]→ click [Add and Remove Programs]

2 Select “QSS-3000_V300” from [Currently installed programs]

Click Remove




3 Click Yes




・Temperature data and QSS-3000 setting file are still remain after uninstall the program. To delete all data and files, delete “QSS-3000 folder” manually.

# Basic operation

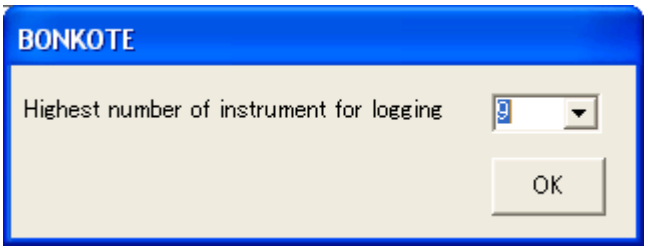
## To Start QSS-3000

1 [Start]→[All Programs]→[JAPAN BONKOTE]→ “QSS-3000_V300”

＊When QSS-3000 starts, the menu, the “Highest number of instrument for logging” and “Key Code registration” windows will appear.

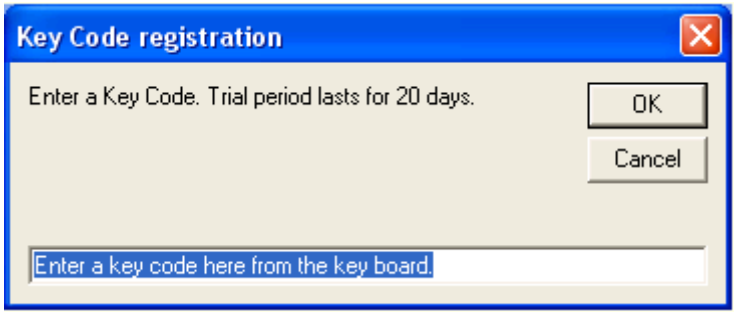
《Menu》window

《Highest number of instrument for logging》window



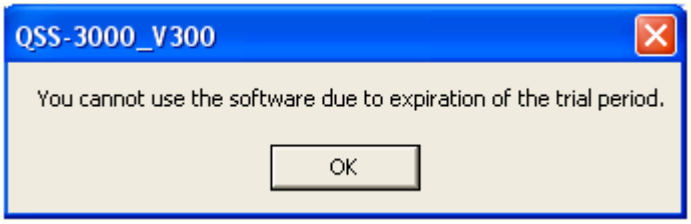
## 2 Key Code registration

To register a key code, input the key code written on the CD case and press [OK].




※ Please register the key code within the 20 days trial period.

If the 20 days trial period has expired, this product cannot be used unless a key code is registered.

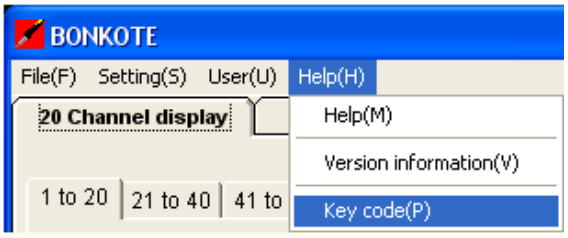



※ During the trial period, this product can be used without a key code.

By pressing [OK], the monitoring software starts.

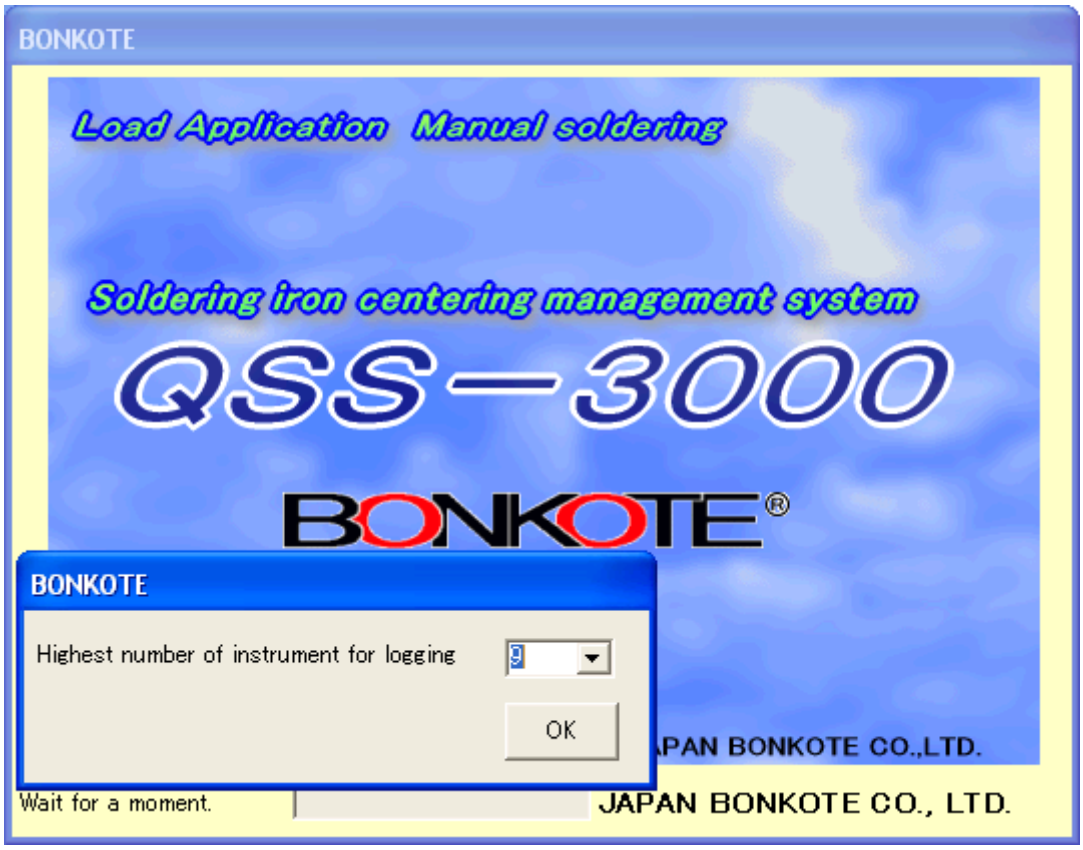
Once the key code is entered, the key code registration window will not appear again when it starts.

※ During the trial period, the key code can also be registered from the menu bar after starting.



3 Set “Highest number of instrument for logging”

＊The “highest number of instrument” is the number of controllers that can be monitored by QSS-3000 software.



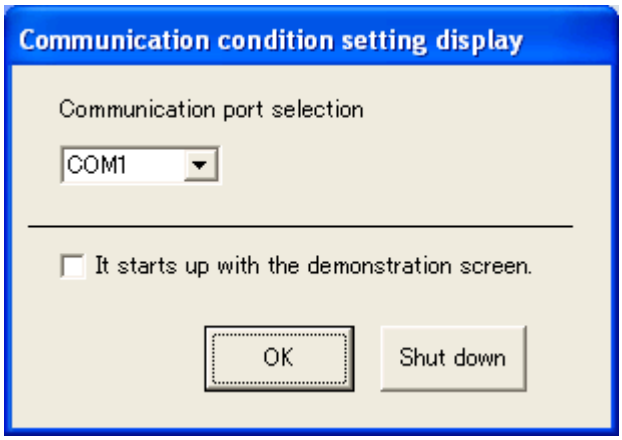

**＊The instrument number starts from “0”** ex. To connect 10 controllers, set more than 9.

・Channels excluded from settings on the “Highest number of instrument for logging” window will not appear. (They are registered as disconnected channels.)

・The monitoring system corresponds to the switching the power ON/OFF within the number of controllers that are set on the “Highest number of instrument for setting”.

## 4 Communication port selection

After the key code registration, the “Communication condition setting display” appears. Select the port that has been set at the “Advanced settings for COM 1” window (refer P.10) and click OK.

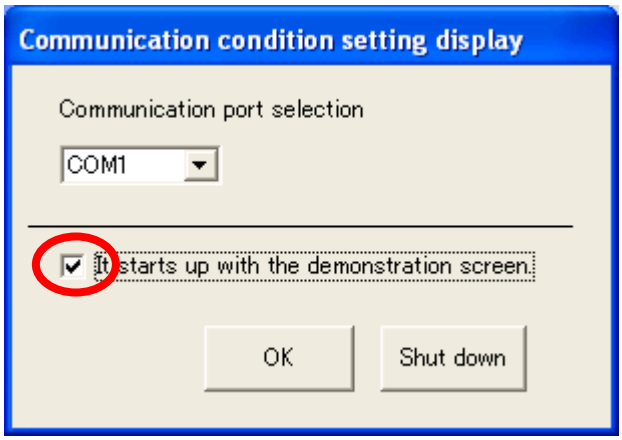



**This is the end of the initial setting**

・After the key code is registered, just input the highest number of the instrument to start the software.

・The inputted number of the instrument is saved and appears when the next time the software starts.

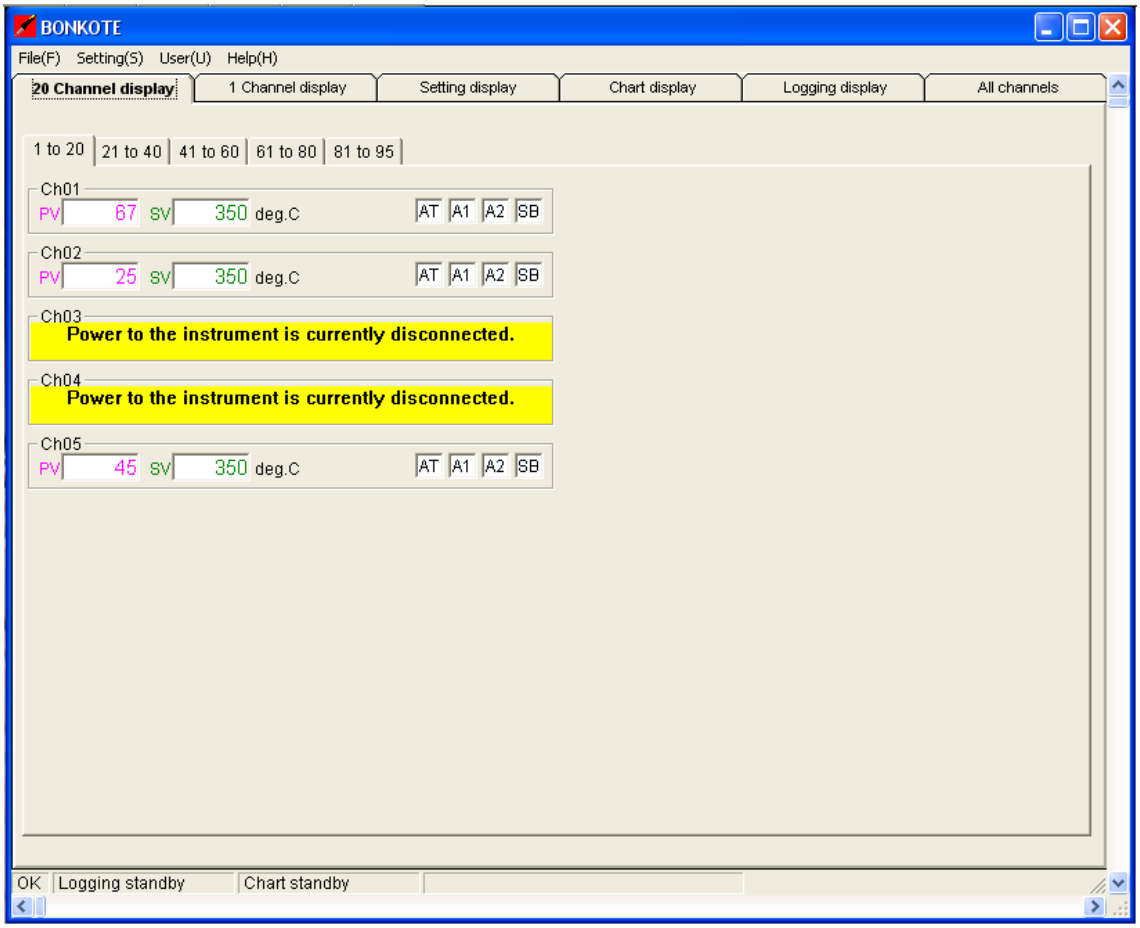
**The demonstration screen** can be activated by checking “It starts up with the demonstration screen”.



## Basic operations of each function.

### ★ 20-channel display★

PV(Process value), SV(Setting value) and alarm status for 20 channels are indicated on one screen. However, the channels excluded from settings on the "Highest number of instrument for logging" window do not appear.




・The figure above shows that the software is monitoring 5 controllers (the instrument number is set as 0 to 4), which are set at the "Highest number of instrument for logging" window as "4".

PARTS INDICATION

| | | | |
|---|---|---|---|
| ＰＶ | Process value | ＳＶ | Setting value |
| ＡＴ | Auto-turning setting | Ａ２ | Low temperature limit alarm |
| Ａ１ | High temperature limit alarm | ＳＢ | Sensor break |

・For the channels to which power is not connected, the message “Power to the instrument is currently disconnected.” will appear.

When the power to the controller is connected, this message will automatically disappear.

## 【Tabs for switching channels】

The channels are displayed ranging from 1 to 95 by switching tabs.

Each tab is divided into sets of 20 channels.

＊The instrument number allocated to the controller determines each channel.

e.g.( Indication of the PC will be “Ch01” for the instrument number “0 “.

Please refer P.7

| TABS | Indicated Data |
|---|---|
| 1 to 20: | Data of the instruments numbered 0 to 19 are indicated. |
| 21 to 40: | Data of the instruments numbered 20 to 39 are indicated. |
| 41 to 60: | Data of the instruments numbered 40 to 59 are indicated. |
| 61 to 80: | Data of the instruments numbered 60 to 79 are indicated. |
| 81 to 95: | Data of the instruments numbered 80 to 94 are indicated. |

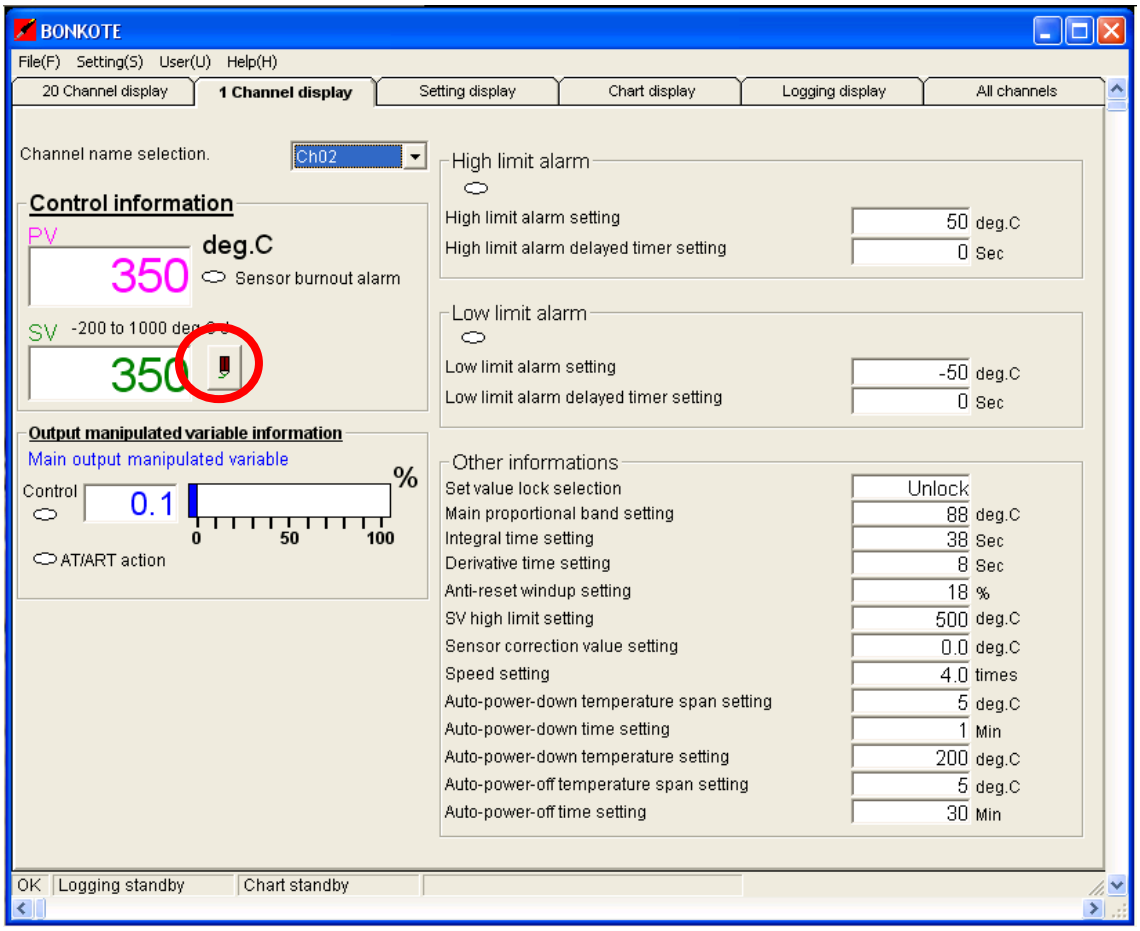
## 【To change the channel name】

The channel names are user changeable by selecting the [Setting(S)]→[Channel name(C)]

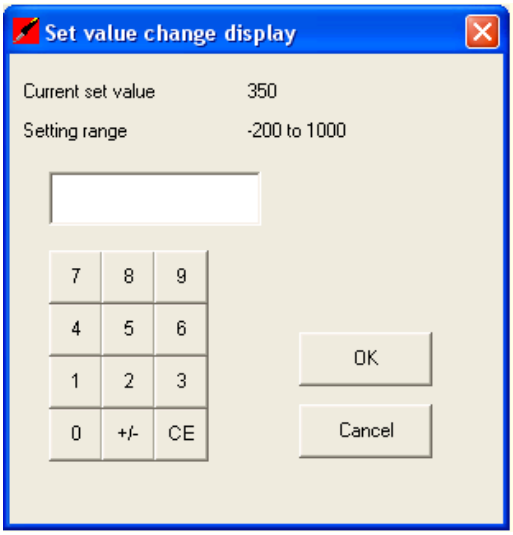
Refer to P.37 for details.

★1 channel display★This window indicates all reading setting items for one channel.

・Only SV(Setting Value) can be changed on this window. By clicking the pencil mark button, the Set value change display appears.



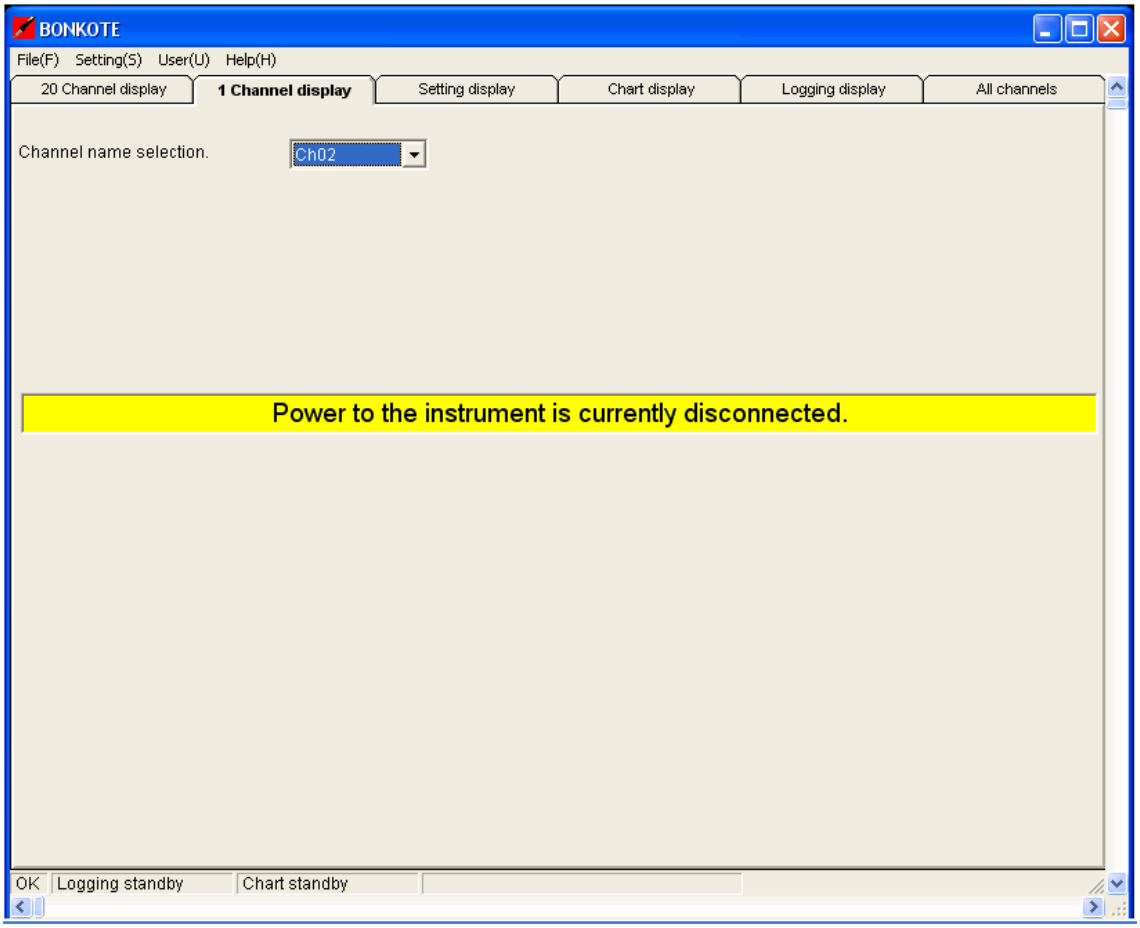

Input a new value with the on-screen numerical keyboard or PC keyboard and click [ok].



・**To select a channel**, select the channel name from the drop-down list box. (However, the channels excluded from settings on the "Highest number of instrument for logging" window do not appear.)

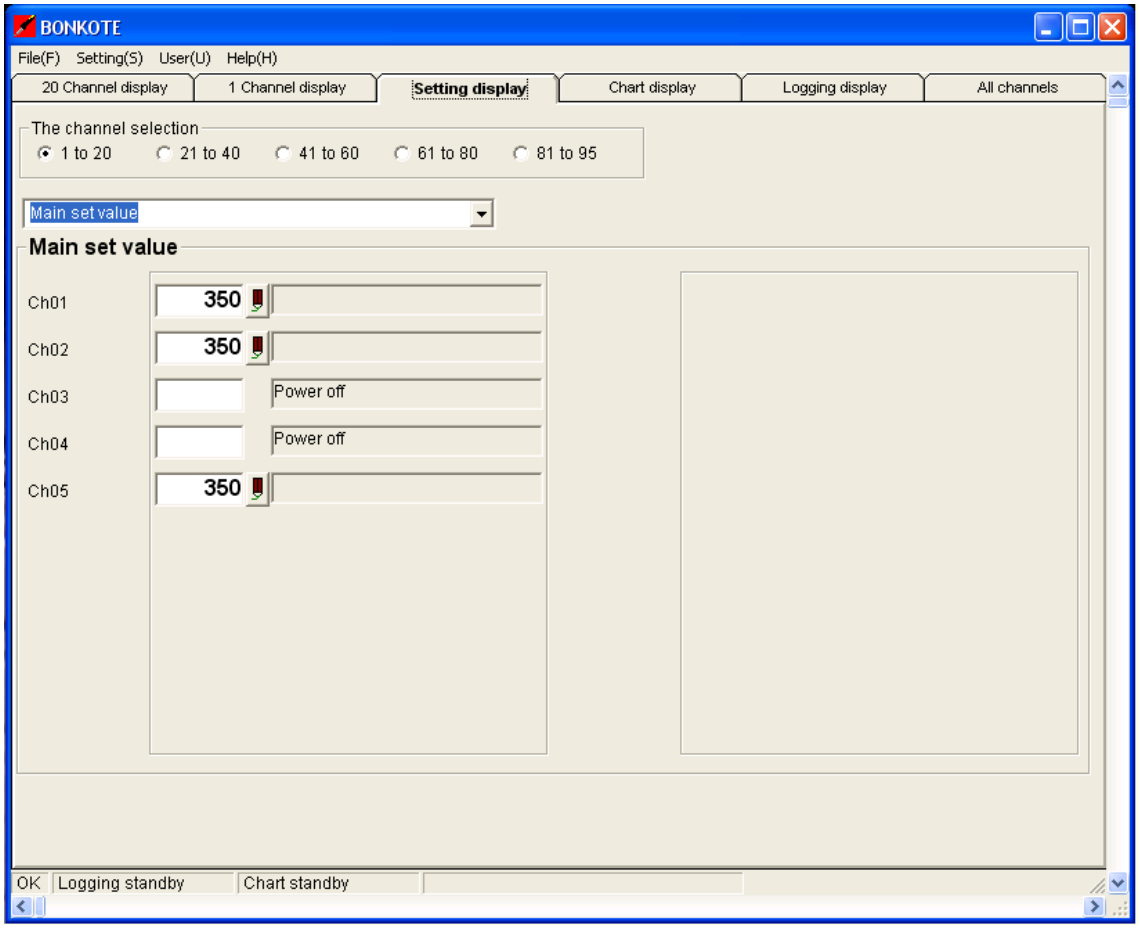
・If the channel name has been changed at the "Channel name" window, the registered name will be indicated. (Refer P.37)

・For the channel to which power is not connected, the message "Power to the instrument is currently disconnected" will appear. When the power to the controller is connected, this message will automatically disappear.



## ★ Setting display★

Set values of each item can be changed and individual modes can be selected.

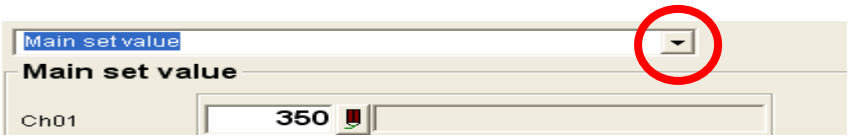



・This window indicates the data in blocks of 20 channels.

(However, the channels excluded from settings on the "Highest number of instrument for logging" window do not appear. And for the channels to which power is not connected, the message "Power to the instrument is currently disconnected" will appear. When the power to the controllers connected, this message will automatically disappear.)

・To change set values, press the Setting button of the channel(pencil mark button). Then Numeric value setting display or Setting item selection display will appear.

・**To change the set value** of any item, select the item from the drop-down list box.

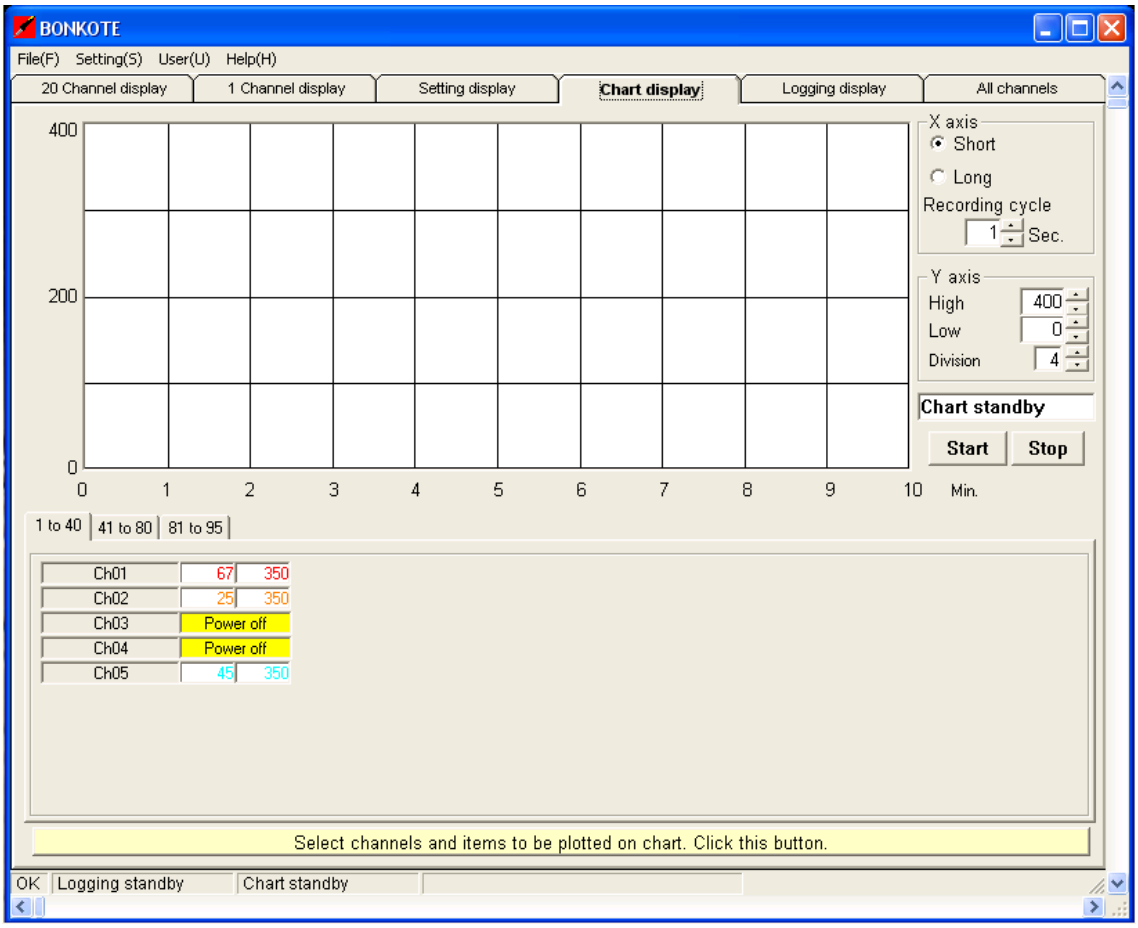



《The list of the drop-down list box》

| MENU | Function | Default value |
|---|---|---|
| Main set value | Set main value | |
| Auto-tuning setting | Change AT ON/OFF status | |
| Main proportional band setting | Adjust proportional band (P setting) | ８８℃ |
| Integral time setting | Adjust integral time (I setting) | ３８sec. |
| Derivative time setting | Adjust derivative time (D setting) | ８sec. |
| High limit alarm (alarm1) setting | Set high limit of soldering temperature range | ５０℃ |
| Low limit alarm (alarm2) setting | Set low limit of soldering temperature range | －５０℃ |
| Set value lock selection | Set value lock setting for protection of error operation | unlock |
| SV high limit setting | Set high limit of Set value | ５００℃ |
| Sensor correction value setting | When measurement value comes an error, set the correction value. | ０ |
| High limit alarm delayed timer setting | Set the timer for high limit alarm (alarm 1) | ０ |
| Low limit alarm delayed timer setting | Set the timer for low limit alarm (alarm 2) | ０ |
| Input type selection | Select the appropriate type from the display | |
| Anti-reset windup setting | Control integral action (PV accords with SV) | １８% |
| Speed setting | Adjust recovery speed to SV( set temperature) | ４．０ |
| Auto-Power-Down temperature span setting | Set the temperature span to activate the “Auto-Power-Down” function | ５℃ |
| Auto-Power-Down time setting | Set the length of time to activate the “Auto-Power-Down” function.<br>If the temperature of the iron tip has not changed within the set span (ex. 5℃) for the set length of time (ex. 30min.), the “Auto-Power-Down” is automatically activated. | ３０min. |
| Auto-Power-Down temperature setting | Set the target value of the “Auto-Power-Down”. | ２００℃ |
| Auto-Power-Off temperature span setting | Set the temperature span to activate the “Auto-Power-Off” function. | ５℃ |
| Auto-Power-Off time setting | Set the length of time to activate the “Auto-Power-Off” function.<br>If the temperature of the iron tip has not changed within the “Auto-Power-Off temperature span” (ex. 200℃) for the “Auto-Power-Off time” (ex. 30min.) while the soldering iron is in the “Auto-Power-Down” state, the soldering iron is switched off automatically. | ３０min. |

※ Please refer to the M50 Instruction Manual for details in using each function.

## ★ Chart display★




・PV and SV of the currently connected units are indicated under the chart display.

## 《 Chart display Usage 》

**1** X axis setting

① Select the time range from “Short” or “Long”

② Set the recording cycle (1-60sec.)
e.g.) ”Short” × 1sec. ＝ 600sec. (10min. plotting)
The chart for 8hr./day is…
“Short” × 48sec.＝ 28800sec.＝ 480min.＝ 8hr.

**2** Y axis setting

① Set the “High” and “Low” temperature by using △▽ or “ Set value change display”.
(Adjusted by 10 degree intervals)

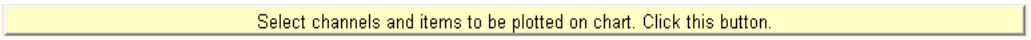
② Select the “Division” from 2 to 10 equal intervals.

3 Select channels / item(SV or PV) / chart color to be plotted on chart.

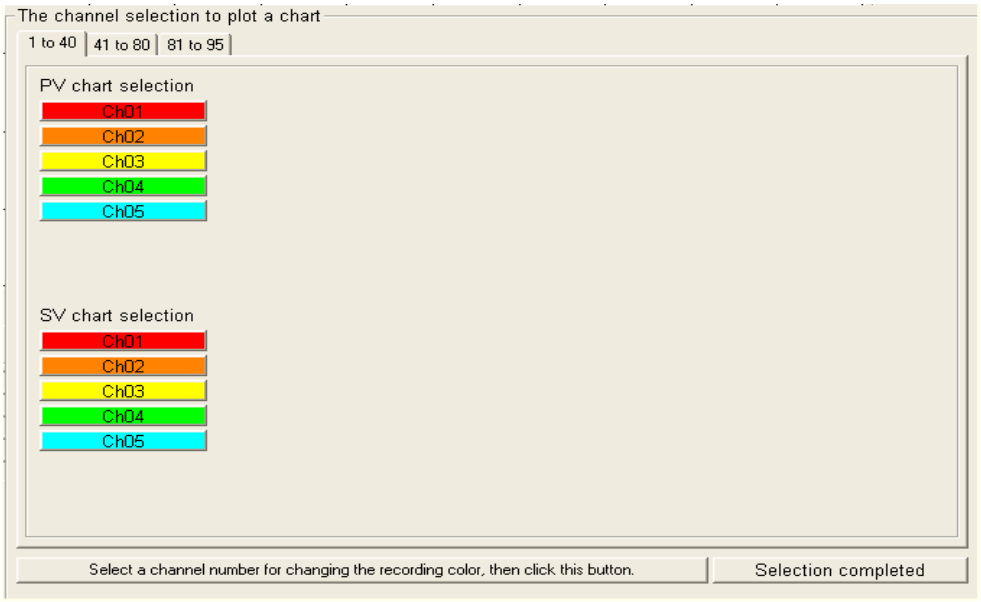
* PV and SV for up to 95 points can be plotted on chart. (Channels excluded from settings on the "Highest number of instrument for logging" window, do not appear.)

* The chart color can be changed.

①Click "Select channels and items to …" button. (at the bottom of Chart display)




Then, the chart plotting selection display will appear.




② Select a channel by clicking the channel number you want to plot.

ex) Click Ch01

↓

Ch01 The chart color for recording will appear

※ If you want to change the chart color go to ③. If not, go to ④.

③ To change the chart color, click “Select a channel number for…” button.

Then, select the color from “Color” window.

④ After select the color, click the [OK] button.

## 4 Start plotting

①Click [Start] to start plotting. ②Click [Stop] to stop the plotting.

(The chart currently indicated will be cleared when the next plotting starts.)

＊ During the plotting, the message "Power to the instrument is currently disconnected." will appear for the channels to which powers are not connected. When power to the controllers are connected, the message will automatically disappear.

### 《 Chart auto-start when starting the monitoring software 》

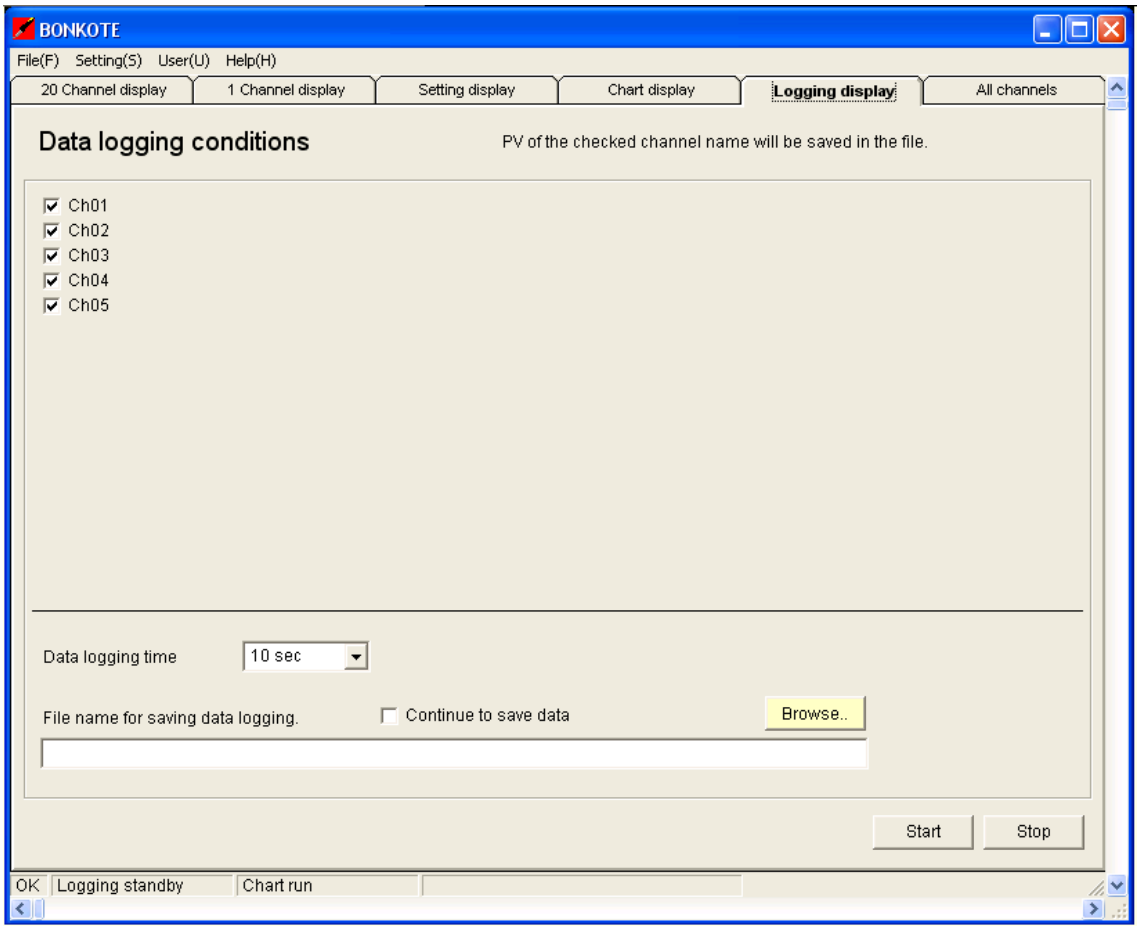
- If the monitoring software is closed while chart is plotting: Chart plotting initiates automatically under the same conditions as the previous session upon software closure when the next time the software starts.

- If the monitoring software is closed while chart plotting is stopped: Chart plotting is stopped the next time the software starts.

## ★ Logging display ★

Time and save file name for logging can be set on this window.

* The channels excluded from settings on the "Highest number of instrument for logging" window, do not appear.
* During the logging, the message "Power to the instrument is currently disconnected" will appear for the channel to which power is not connected. When the power to the controllers are connected, the message will automatically disappear.




・PV data of the designated channel can be saved in a file.

・The saved data can be read on spreadsheet applications like Microsoft Excel.

Start : Starts data logging.

Stop : Stops data logging.

Browse.. : The data save destination can be selected,

or a file name for saving data can be entered manually.

## 《 Logging display Usage 》

### 1 Logging channel and time setting

Select the PV value logging channel and data logging time out of (1-10sec./30sec./1min./5min./10min./15min./30min./1hr.)

*If the data logging time is **1-9sec.** the following messages will appear.

**1sec.** "Logging is impossible because logging point exceeded **11 points.**"

**2sec.** → "Logging is impossible because logging points exceeded **21 points.**"

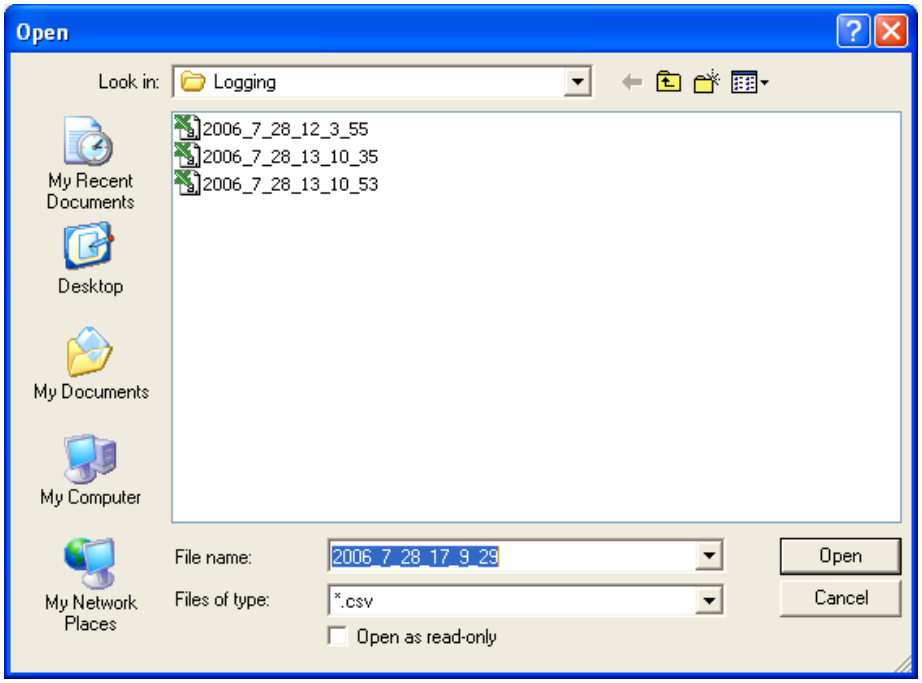
.
.

**8sec.** →" Logging is impossible because logging points exceeded **81 points.**"

**9sec.** →" Logging is impossible because logging points exceeded **91 points.**"

### 2 Select the data save destination

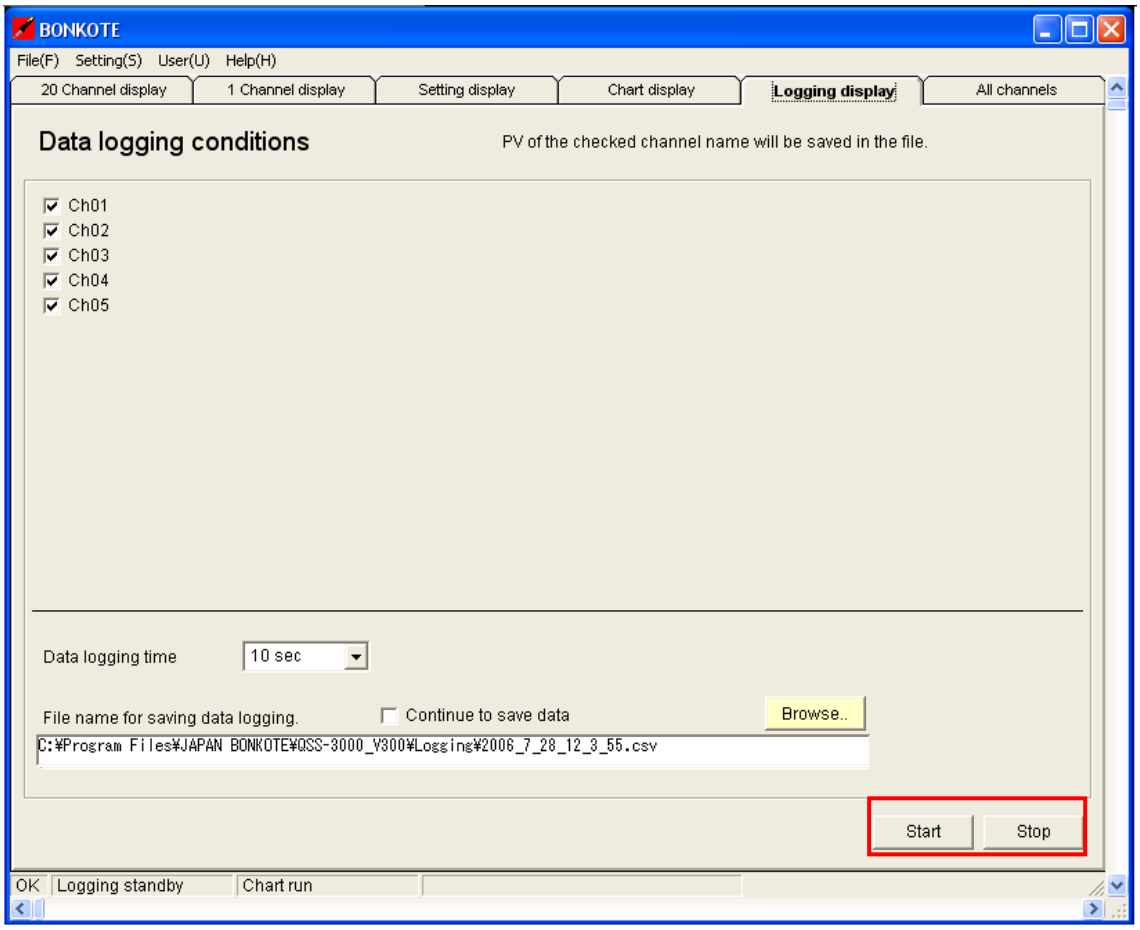
①Click Browse.. →Select a file name for saving data logging. →Click Open




*The original file name is based on the date and the time that the logging has been done. It can be changed manually.

② Click Start to start data logging. The data is saved into the file simultaneously.

To change the channel for logging, click the [Stop] button and select other channels.

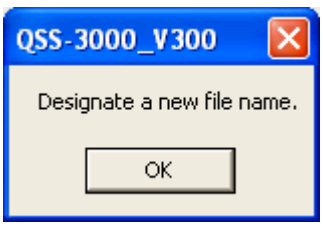



## 《Notes for logging》

### 【 Data save destination setting 】

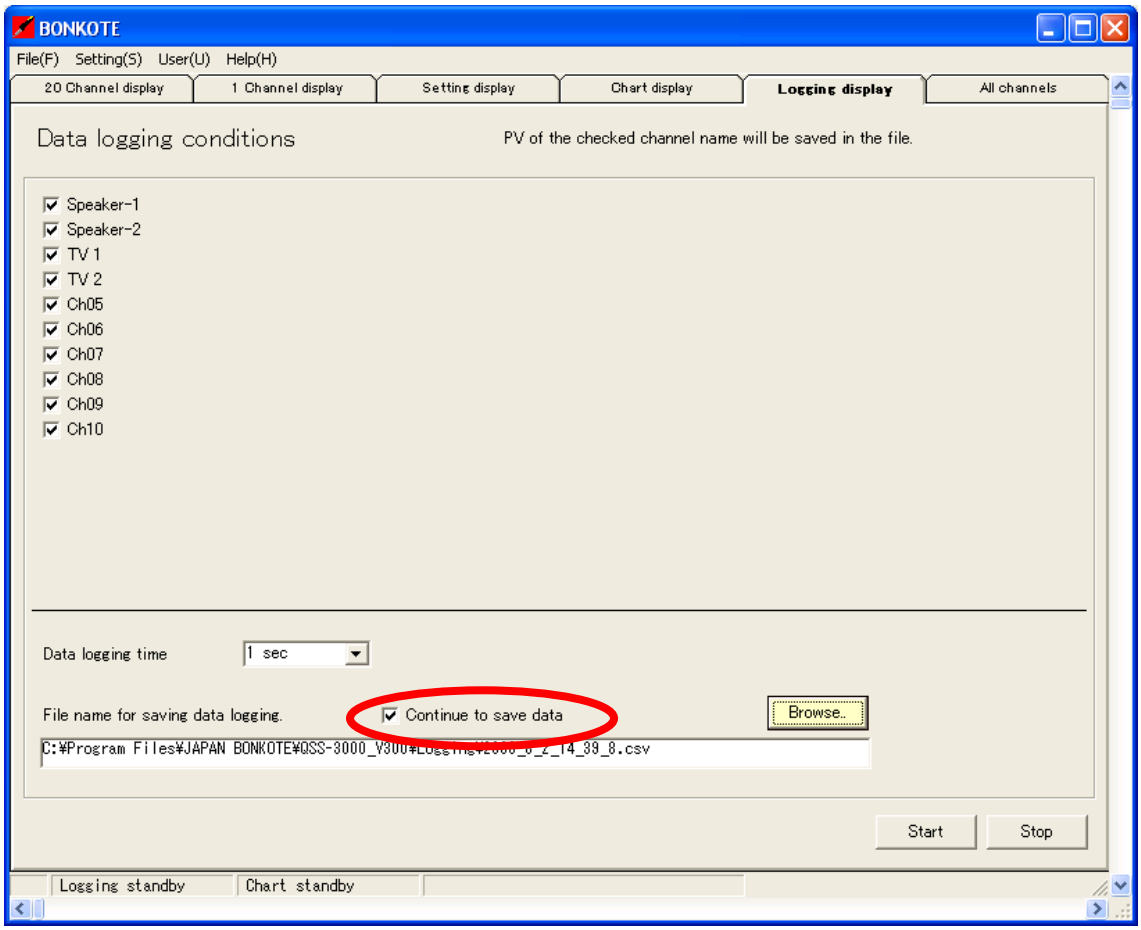
Be sure to designate a file name for saving the logging data before start logging.

If the file name has not been designated, following message will appear.



【 Continue to save data 】function

When this function is checked, the file name of the save destination will be designated with the same name as previously used, and the data will be saved continuously in the same file.



【 Logging-Auto-Start function 】

When the monitoring software is restart, logging begins automatically under the same conditions as when the software was closed if the logging was not stopped at the last time the software was closed.

＊However, if the monitoring software is closed while logging is cancelled, the Logging-Auto-Start will not activate the next time the software starts.

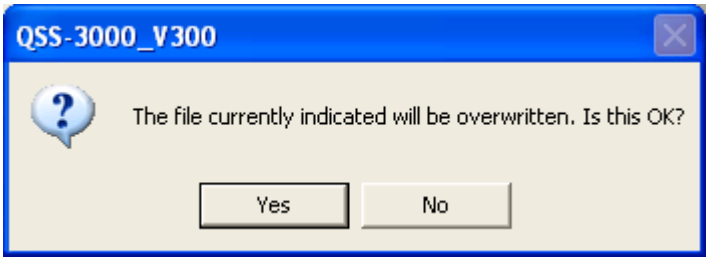
★ If the “Continue to save data” function is checked and logging has been activated when the software is closed…

When the software starts again, the Logging-Auto-Start function is activated and logging begins automatically.

The file name of the save destination is designated with the same name as previously used, and the data is saved continuously in the same file.

★ If the “Continue to save data” function is not checked and logging has been activated when the software is closed…

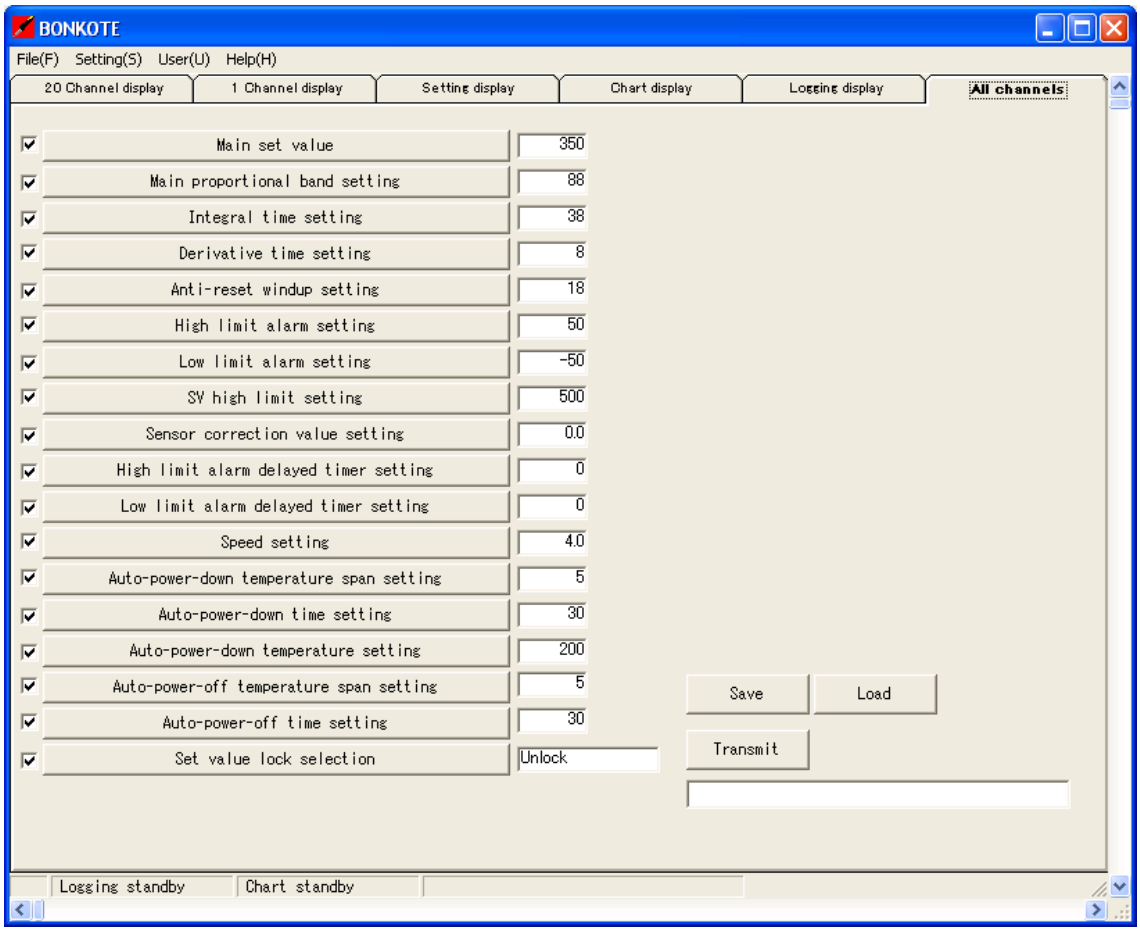
When the software starts again, the Logging-Auto-Start function is activated and following message will appear.




Yes →The file currently indicated will be overwritten with the new logging data.

No →Open a new file or designate a file within which to save the data.

## ★All channels display★

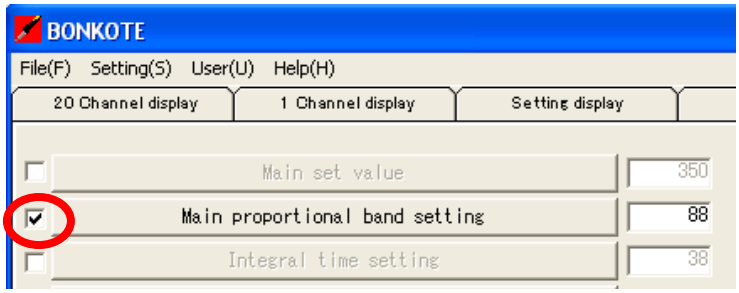



・The data on the “All channels display” can be transmitted to all channels and the previous data of all channels will be replaced.

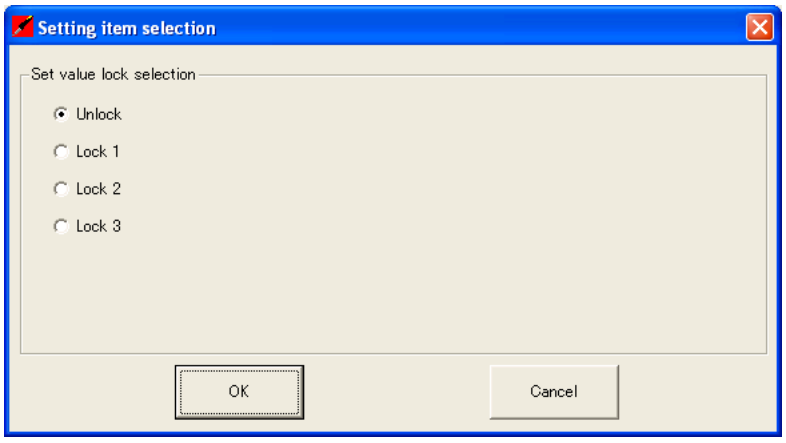
・The data on the “All channels display” can be saved or loaded.

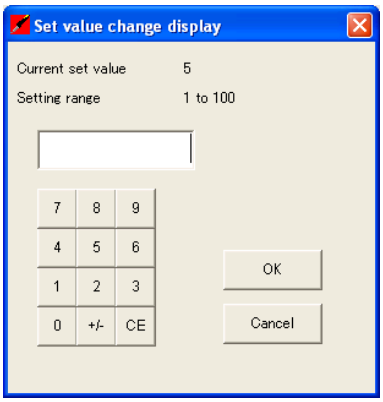
## ★All channels display usage★

① Select the setting functions and check the left-side checkbox




② Click the setting function key that you checked. Then, "Setting item selection" window or "set value change display" window will appear.



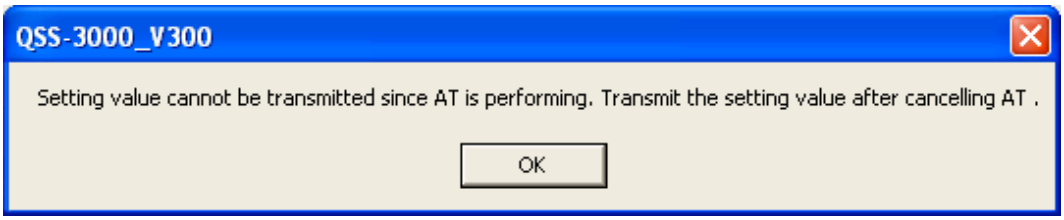

③ When the setting is completed, click [Save].

The data is saved in "Set data" of C:¥BONKOTE¥Program Files¥QSS-3000_V300

④ The data on the "All channels display" can be transmitted to all channels.

＊However, the functions that have not been checked are not being transmitted.

＊The channels that have been performed Auto-turning are also not available for data transmission.




⑤ Data can be loaded from a file you select and transmitted to the All channels window.

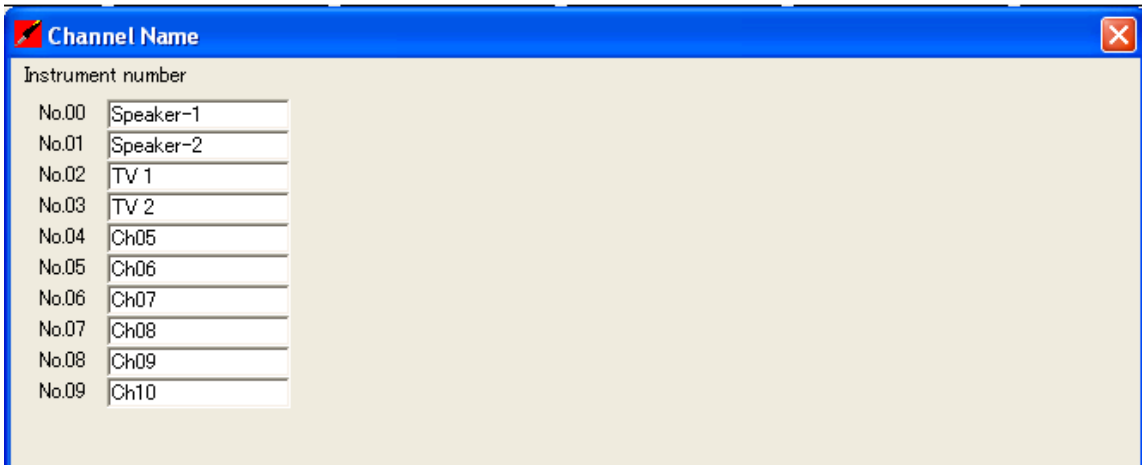
## Function

### ★Channel name registration★

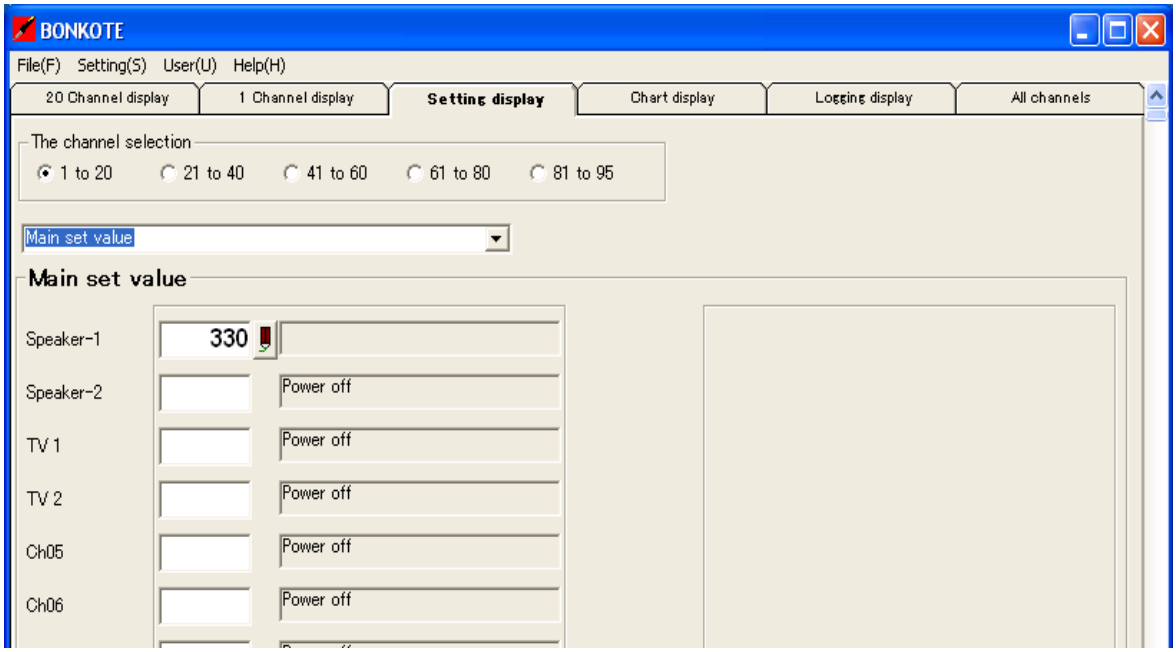
1 Select[Setting(S)] →[Channel name (C)] and click.

Channel name display will appear.

2 Enter a channel name (ex. products name / operator's name) within 12 characters. And click OK



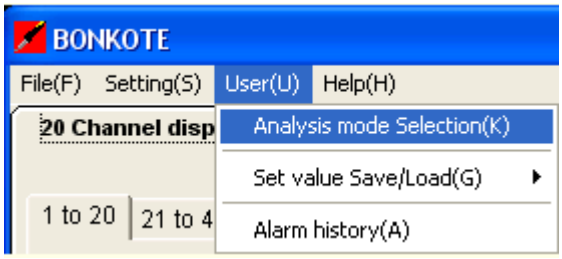

＊The channel name registered here is used for indications on the monitoring software and in the list boxes for selection.



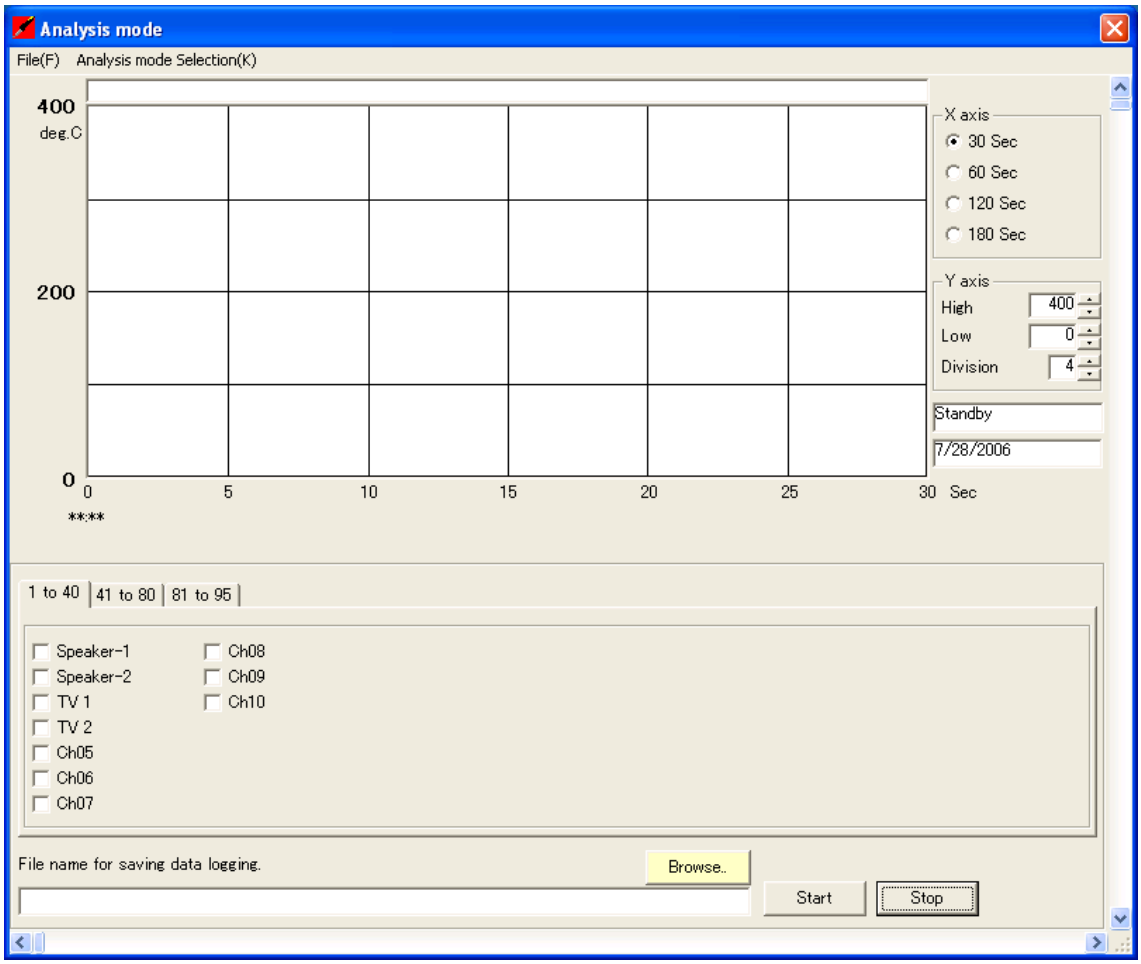
## ★ Analysis mode★

・PV data of the selected channels (max.5 channels) is saved every 0.3 seconds, and is plotted on chart.

1 Select [User(U)]→[Analysis mode Selection(K)] and click.




2 Analysis mode display will appear.




＊ Be sure to cancel the logging or chart function before going to the analysis mode. Otherwise, it is unable to elect the analysis mode.

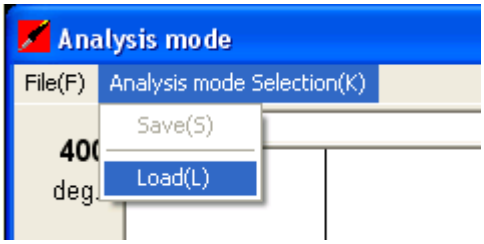
## 《 Analysis mode Usage 》

### Save mode / Load mode function

Analysis mode includes **Save mode(Current PV data can be saved)** and **Load mode(Past PV data can be indicated)**.

When Analysis mode window is indicated, the software is running in Save mode automatically.

To change the mode, Select[Analysis mode Selection(K)]→[Load] or [Save]



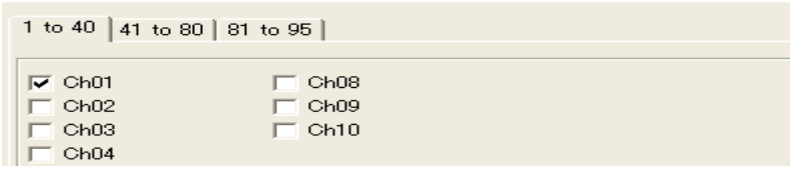

【 **Save mode** 】Current PV data can be saved

1 X axis Select a chart plotting time from 30sec./60sec./120sec./180sec.

2 Y axis Select high and low temperature range with △(up) and ▽(down) keys.

(Y-axis can be divided from 2 to 10 equal intervals.)

3 Select channels (Max. 5channels) to be analysis and check the checkboxes.




4 Select the data save destination

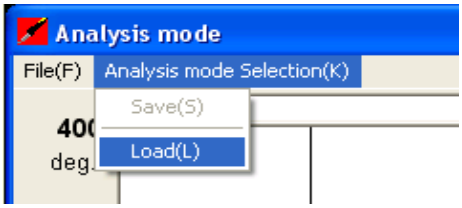
Click Browse.. →Select a file name for saving data logging. → Open

＊The files in which the logging data is saved are stored in “Logging 2” folder as the initial setting.

5 Click [Start]→ Data logging and plotting of the chart start simultaneously.

【 **Load mode** 】Past PV data can be indicated

1 To change the mode from [Save] to [Load], select [Analysis mode selection(K)]→[Load]




2 Click Browse.. →Select a file name of the past data→ Open

3 Click Load → Stop

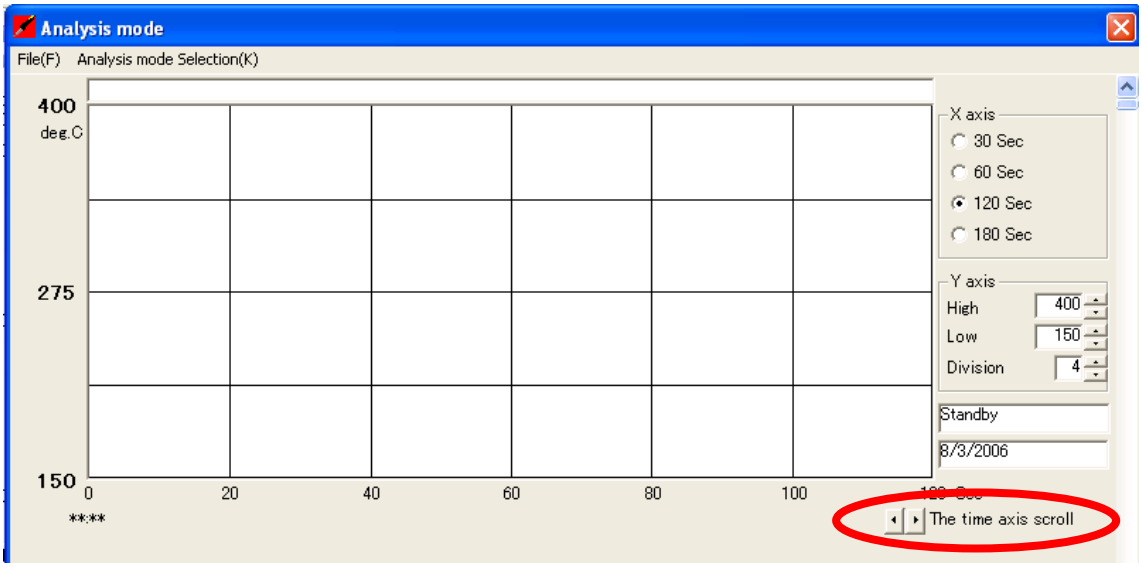
The selected data will be indicated on the chart display.

＊To examine more detail of the data, adjust **X axis** and **Y axis**.

**X axis** ① Select a shorter time scale than the time it was saved.

ex) Saved(60sec.)→Select 30sec.

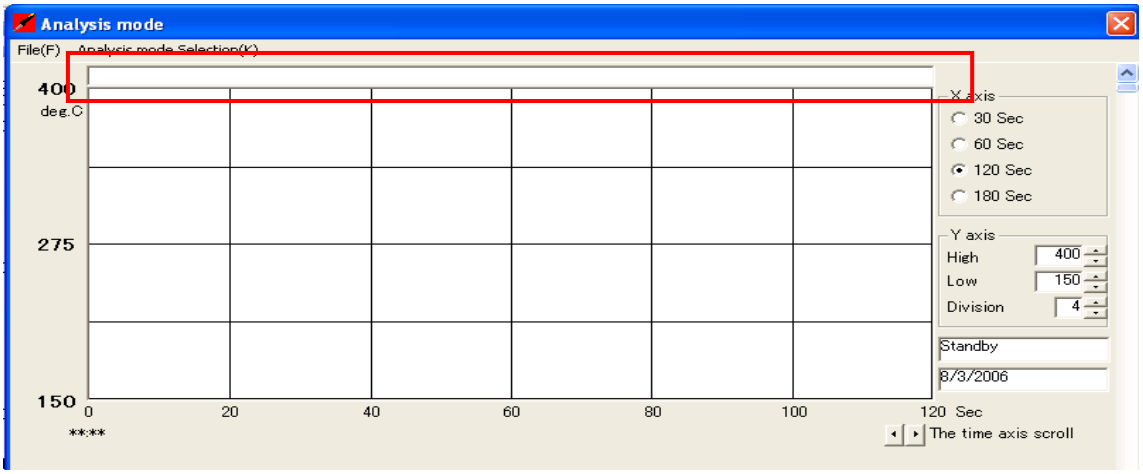
② And use scroll key to examine the data.



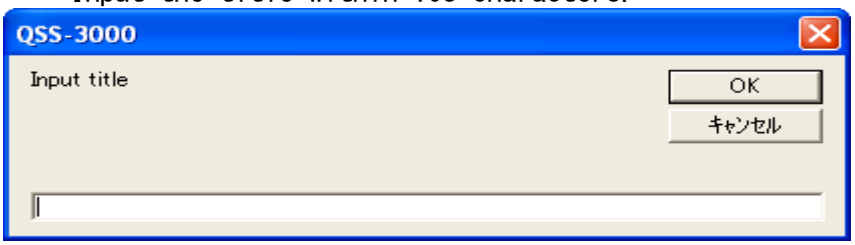

**Y axis** Adjust high and low temperature to the range appropriate for the analysis.

## ★ Printing function ★

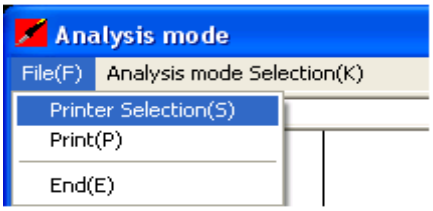
1 Click the blank space on the top of the chart.



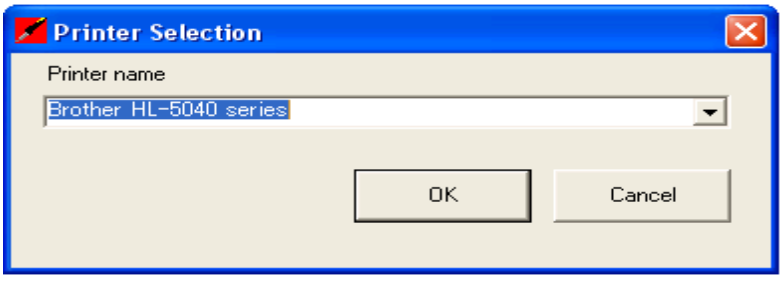

Input the title within 108 characters.




2 Select [File(F)]→[Printer selection(S)] and click.




The printer selection display will appear → Set the currently selected printer




3 Select [File(F)] → [Print(P)] and click.

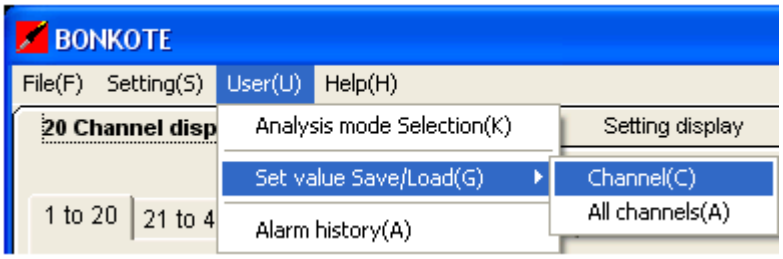
Analysis mode data can be printed.

## ★Set value SAVE/LOAD function★

〔**Per channel**〕 Setting data can be saved to one file per each channel. In addition, it can be loaded from saved files to each channel.

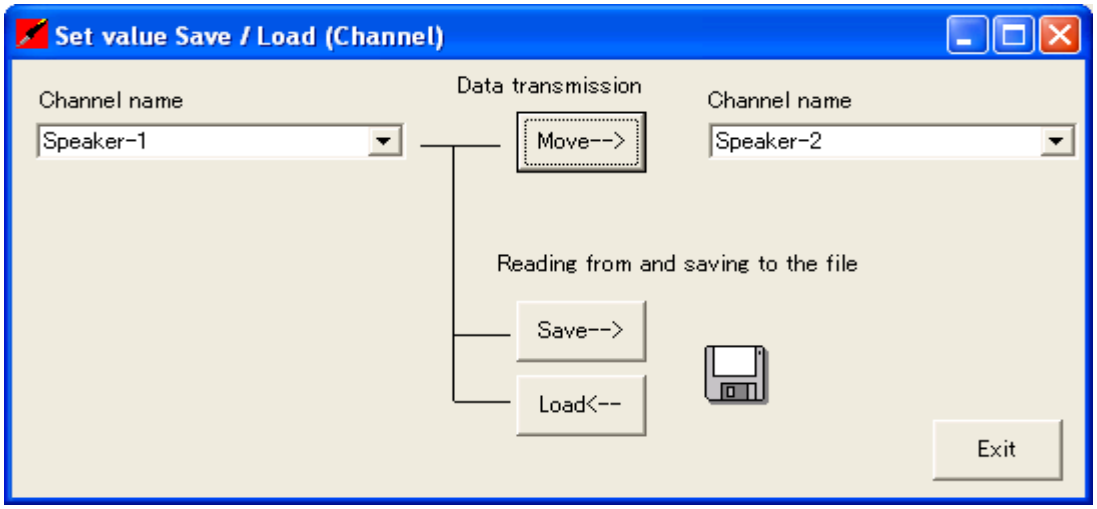
Data transmission between channels is also possible.

Select [User(U)]→[Set value SAVE/LOAD(G)]→[Channel(C)] and click.

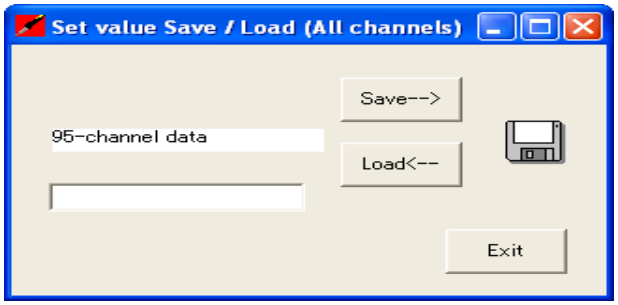



The figure below is an example of the data transmission.

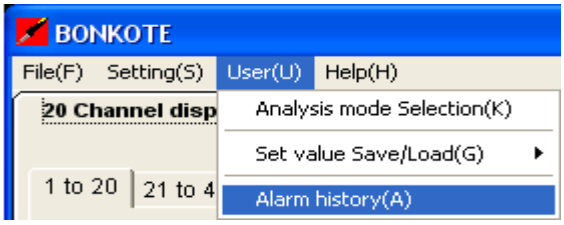
ex) the setting information of Ch1(Speaker-1) is transmitted to Ch2(Speaker-2)



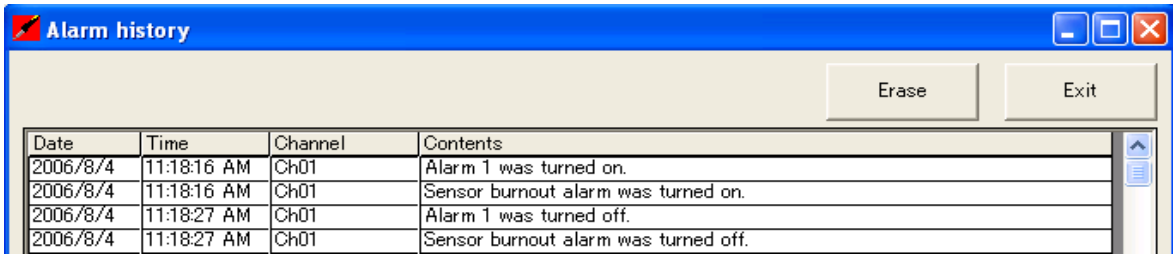

〔**All channels**〕 The setting data on the "All channels display" can be saved or loaded.



★ **Alarm history** ★ Select [User(U)]→[Alarm history(A)]→click.




・While monitoring controllers, if **Alarm 1, Alarm 2** or **over/under scare** (Sensor burnout alarm) has occurred, or if they have been restored, the relevant unit name, date and time are indicated.



(The data currently displayed can be erased)

(The "Alarm history" display can be closed)

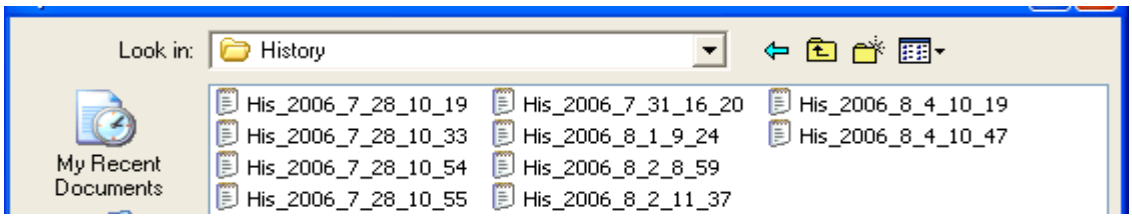
《Example》

**Alarm 1** The temperature of the iron tip exceeds the range of the high limit alarm setting.

**Alarm 2** The temperature of the iron tip exceeds the range of the low limit of alarm setting.

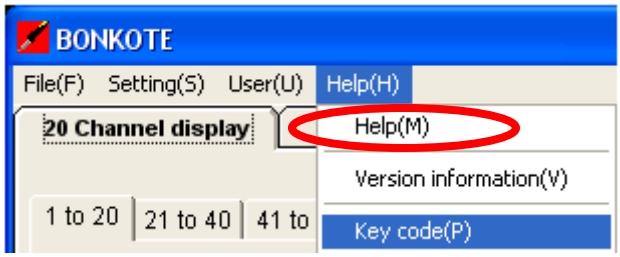
・While collecting the data on the display, the same data is saved in **the history folder** with "txt" extension simultaneously.

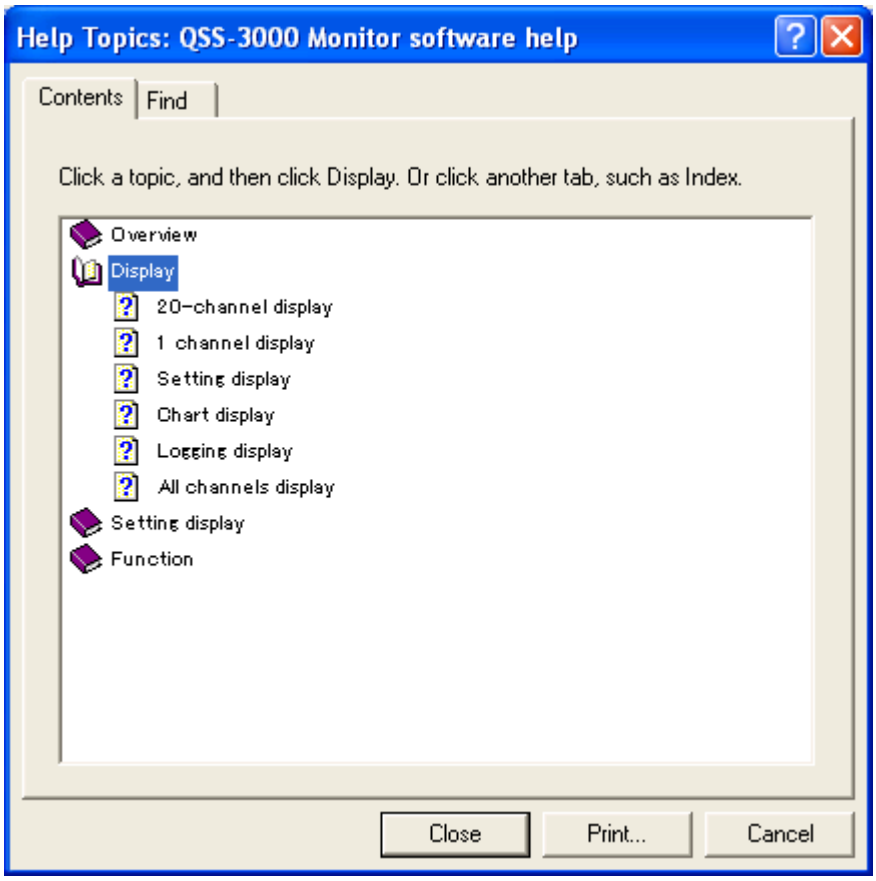
・The file name is automatically determined by the date and time upon starting the monitoring software. (e.g. His_2003_5_12_12_3.txt)



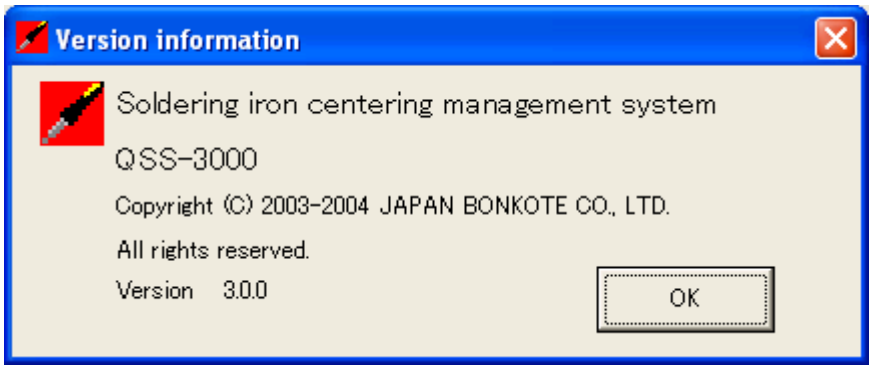
## ★ Help function ★

《 Help Topics 》 Click [Help(H)] → [Help(M)]



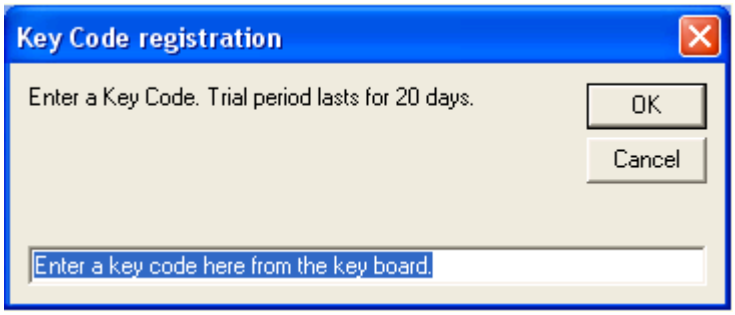




《 Version information 》 Click [Help(H)] → [Version information(V)]



《 **Key Code registration** 》Click [Help(H)] → [Key code(P)]

To register a key code, input the key code written on the CD case and Press [OK].




## To create your own opening display

1 Create the display with DPI setting 495×343 (W×H), File name “open.bmp”

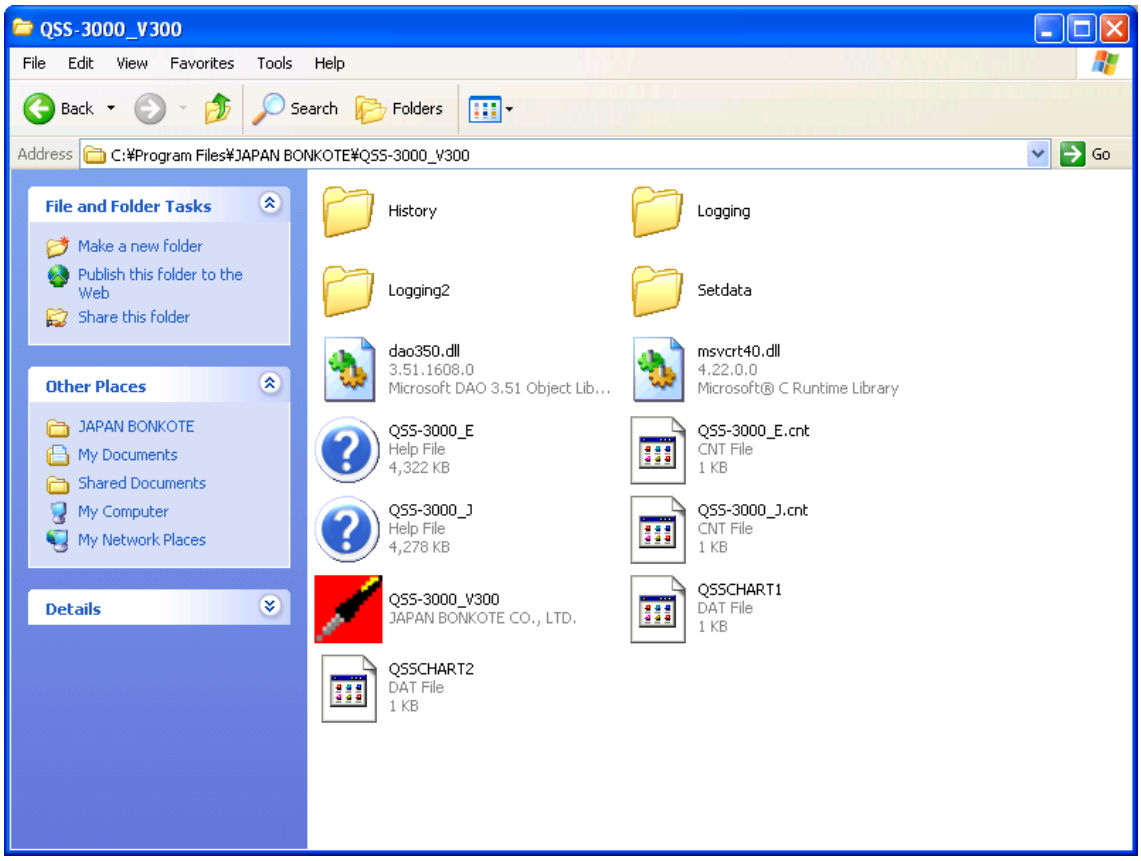
2 Copy the “open.bmp” file to the folder that the software is installed.

Default display

## QSS-3000_V300 Folder

Local Disk(C) ⇨ (Program Files) ⇨ (JAPAN BONKOTE) (QSS-3000_V300)

⇩




History ・ Alarm history data is saved in this folder as history files( His_2006_8_4_15_48 )

・Whenever the software is started, a [history] file is made in the History folder simultaneously.

・The saved data can be read on Notepad or Spreadsheet applications like Microsoft Excel.

Logging The data saved at the "Logging display" are stored in this folder.

Logging2 The data saved at the "Analysis mode" are stored in this folder.

Setdata The data saved at the "All channels display" are stored in this folder.

＊ Be sure not to change those folder names.

# Appendix

## a. Note for the "Highest number of instrument" setting

* To connect the controller more than the number of the "Highest number of instrument" setting, close and restart the software, then enter a new number on the "Highest number of instrument for logging" window, otherwise the software does not recognize the additional controllers.
* If the set number is 9 and 4 controllers are connected, 6 more controllers can be connected during the operation without changing the setting.

## b. Specifications

Soldering iron unit

| Model No. | TB-118 | TB-120J | TB-140JA | TB-140JB | TB-240 | TB-150 | TB-155JA | TB-155JB |
|---|---|---|---|---|---|---|---|---|
| Output | 18W | 20W | 40W | 40W | 40W | 50W | 55W | 55W |
| Input voltage | 100V | 100V | 100V | 100V | 220V | 100V | 100V | 100V |
| Iron tip | BN5 | BJ5 | BJ5 | BJ6 | BN7<br>BN10 | BN7<br>BN10 | BJ7 | BJ8 |

| Model No. | TB-255JA | TB-255JB | TB-165 | TB-265 | TB-195JA | TB-295JB | TB-1100 | TB-2100 |
|---|---|---|---|---|---|---|---|---|
| Output | 55W | 55W | 65W | 65W | 95W | 95W | 100W | 100W |
| Input voltage | 220V | 220V | 100V | 220V | 100V | 220V | 100V | 220V |
| Iron tip | BJ7 | BJ8 | BNP10 | BNP10 | BJ11 | BJ11 | BN12 | BN12 |

Soldering iron

| | |
|---|---|
| Heater | Alumina ceramic |
| Leak voltage | Under2(mV) Initial value |
| Grounding resistance | Under2(Ω) Initial value |
| Code | EP rubber code : 1.3m |

Conversion unit

| | |
|---|---|
| Model No. | USB-485I |
| Data Throughput | 19200bps |
| Number of connectable controller | Max.95 (Needs 1 repeater per 30) |
| Max. length of communication capability | 1.2km |
| Voltage | AC adapter DC9V 450mA |
| Dimensions | 58 (W) ×19 (H) ×83 (D) |
| Weight | Approx. 160g (Conversion unit)<br>Approx. 310g (AC adapter) |

Controller

| | |
|---|---|
| Model No. | M50 |
| Voltage | 100～240V |
| Power consumption | Less than 10VA |
| Fuse | 3A |
| Dimensions | 97 (W) ×73 (H) ×130 (D) |
| Weight | Approx. 800g |
| Control method | PID |
| Indicator LEDs | PV：LED (red)、SV：LED (green) |
| Communication | Based on RS-485 ()<br>Max. Data Throughput：19200bps |

Software

| | |
|---|---|
| Model No. | Qss-3000 Version3.0.0 |
| OS | Windows98／Me／NT4.0／2000／XP |
| CPU | Intel PentiumⅢ compatible (800MHz or more)<br>*Please note that correct operation is not guaranteed when using other processor. |
| PC RAM | The memory capacity that the OS guarantee. |
| Display resolution | 1024×768 256 colors or more Screen font(small) |

## c. Troubleshooting

### [Can' t communicate with soldering controller]

・Be sure the instrument number is set correctly.

・Be sure the conversion unit is connected correctly.

(Use straight through cable for PC communication cable)

・Be sure the conversion unit is plugged in.

・Be sure the communication cables are connected securely.

・Be sire the communication port is set appropriately.

### [For other communication errors]

・Be sure the modular jack is connected correctly.

・Be sure power is on to the controller.

・Be sure the communication cables are connected securely.

## d. Customer support

Please contact our dealer or our service division to learn more about our products and services.

BONKOTE

*"World Class Soldering／Desoldering Systems"*

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