mt エムティティ株式会社

Instruction Manual
Control Software for Serial Communication
of
Programmable Temperature Signal Conditioner

Ver.1.0.1

mt エムティティ株式会社

Contents

1 General Description

This paper is the instruction manual of control program Set3x7x to perform the necessary configuration for isolated programmable signal conditioners, MS3900 series and MS3700 series through AT-compatible PC.

2 Operating Environment

This program runs on an AT-compatible PC with Windows XP or Windows 7(32bit version).

The AT-compatible PC needs to be provided with a serial port for the communication with the programmable Signal Conditioners.

The communication cable should be the dedicated one, type MS-CBL01.

Serial Port (COM)

Dedicated Serial Cable

MS3xxx

AT-Compatible PC

Programmable Signal Conditioner
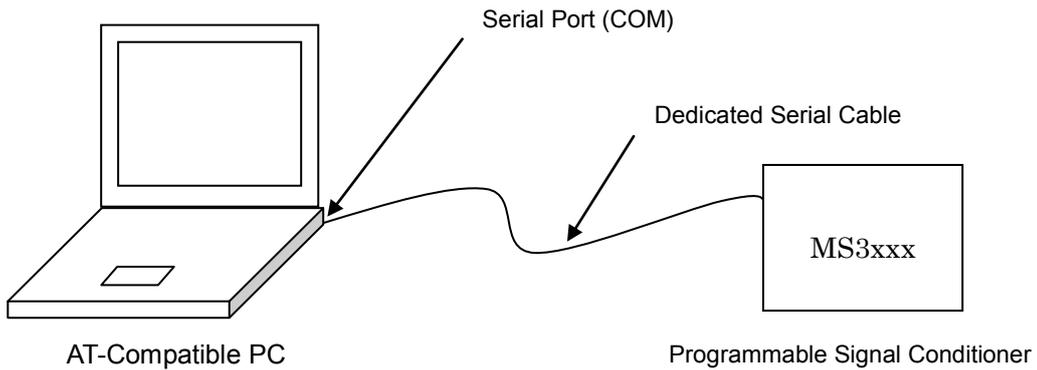
[Using USB]

When a USB is used, both the dedicated serial cable(MS-CBL01) and USB conversion adapter(REX-USB60F) are required.

USB Port

Dedicated Serial Cable

MS3xxx

AT-Compatible PC

Programmable Signal Conditioner

Conversion Adapter
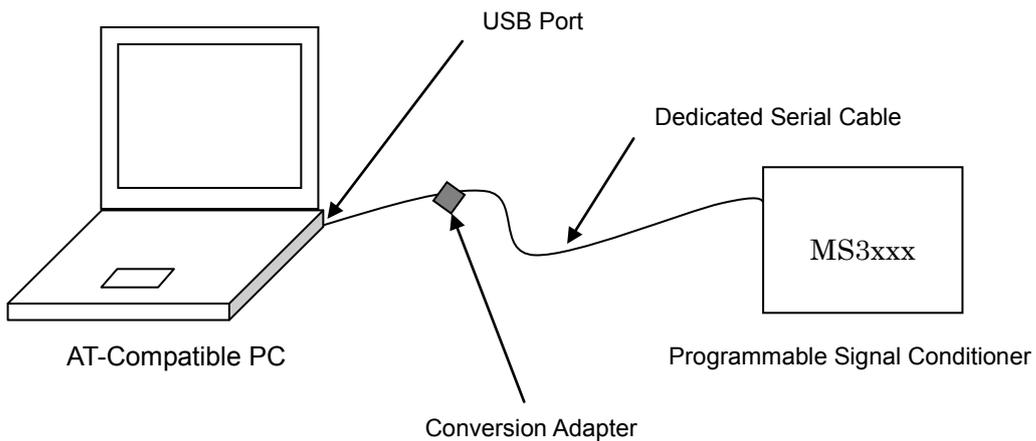
3 Installation of Configuration Software

The Installation Media is a single CD-ROM.

① Insertion of the Control Program CD-ROM into the CD-ROM Drive automatically starts up the Installer. If it turned out unsuccessful, select from the "Start Menu" and execute "CD-ROM Drive:/setup.exe", then the Installer will start up.
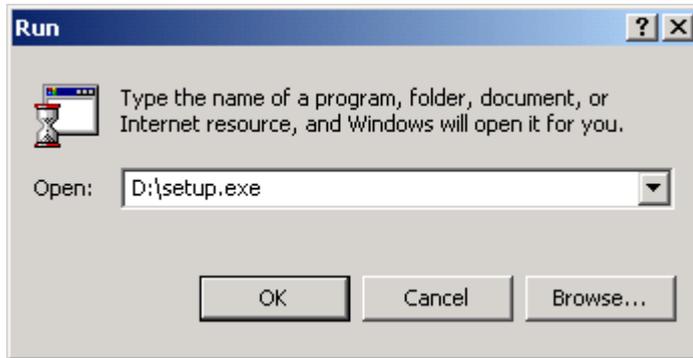
② Installation of Set3x7x Control Program will be introduced.
Proceed to next stage by [Next].
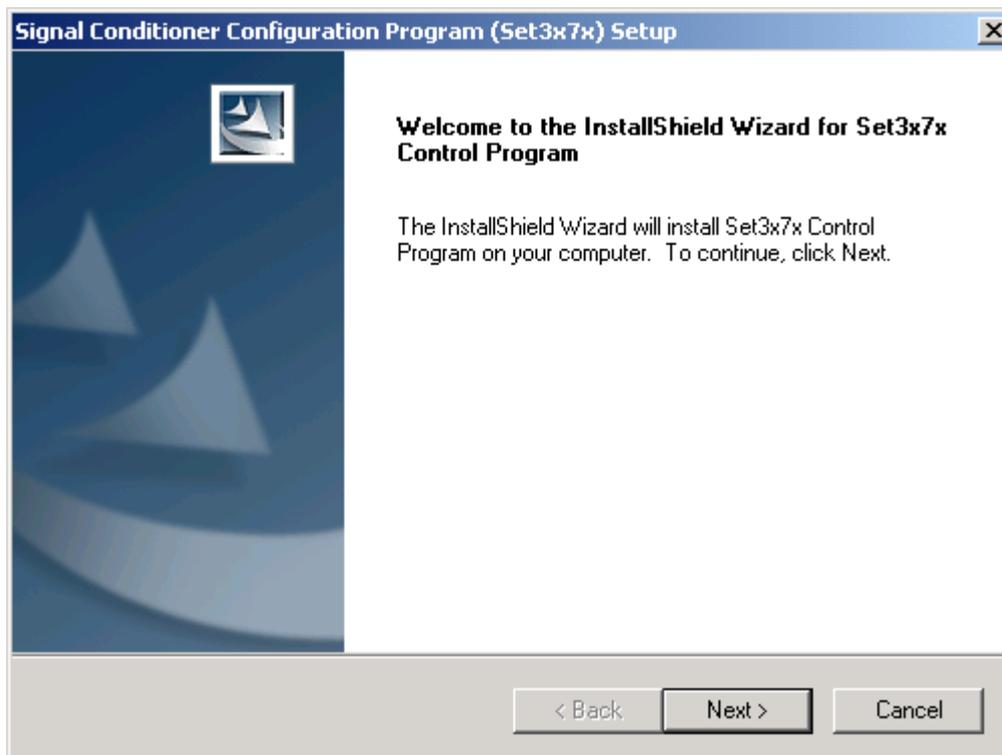
③   Set up the install destination of this Control Program.

In typical specifications, the install destination directory is "C:/MTT_MS3x".

Clicking "Browse" button here can change the install destination directory.
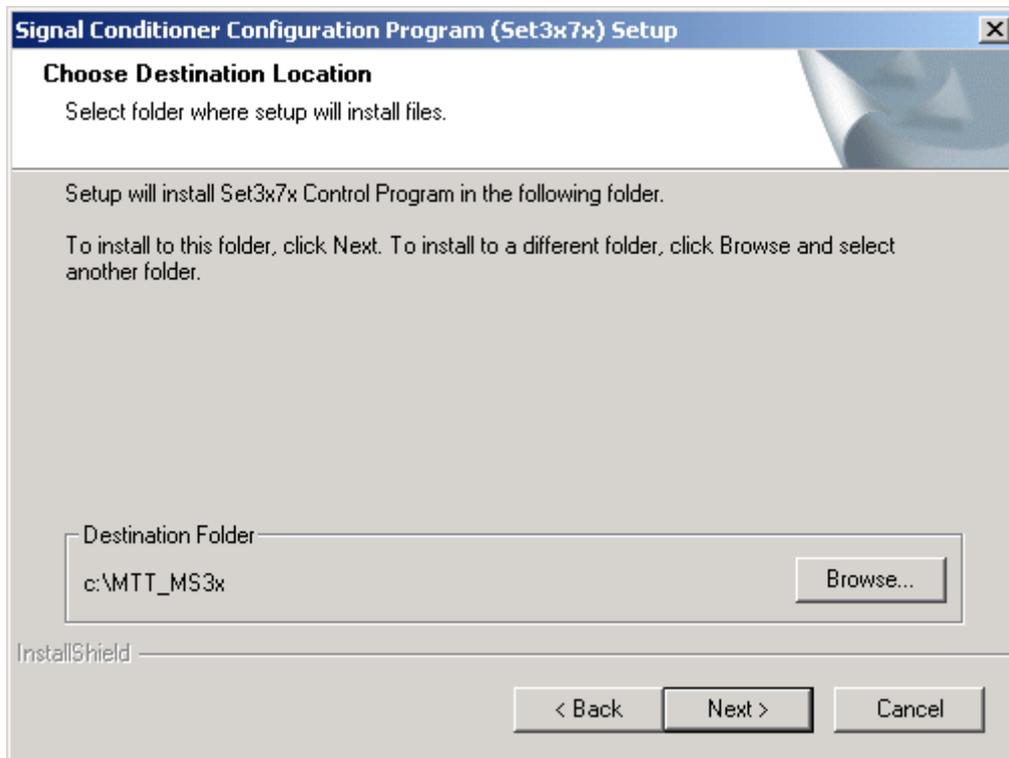
After confirming the install destination, proceed to the next stage.

④   Select Items to be installed.

The item checked here will be installed.

Typically, all items are to be installed.

Items without checking will not be installed.
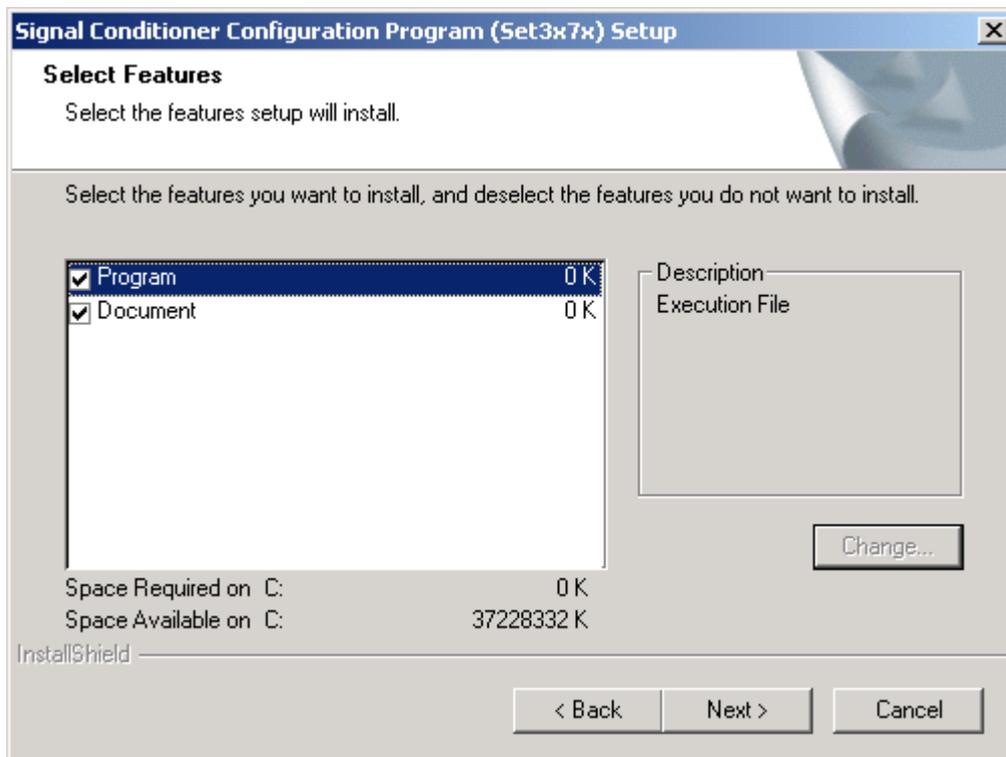
Items to be selected are as shown below:

*Program   To install the execute program necessary for Set3x7x.

*Document   To install the instruction manual (PDF format) for Set3x7x.

(When PDF file is not opened, install Acrobat Reader by executing

AdbeRdr910_en_US_Std.exe.)

After selection of items to be installed, the installation will start with "Next".

*Adobe Systems, Inc. 345 Park Ave. San Jose, CA 95110 USA

Adobe Acrobat and Acrobat Reader are the registered trademark of Adobe Systems Incorporated.

⑤   Installation of this Control Program will be completed.
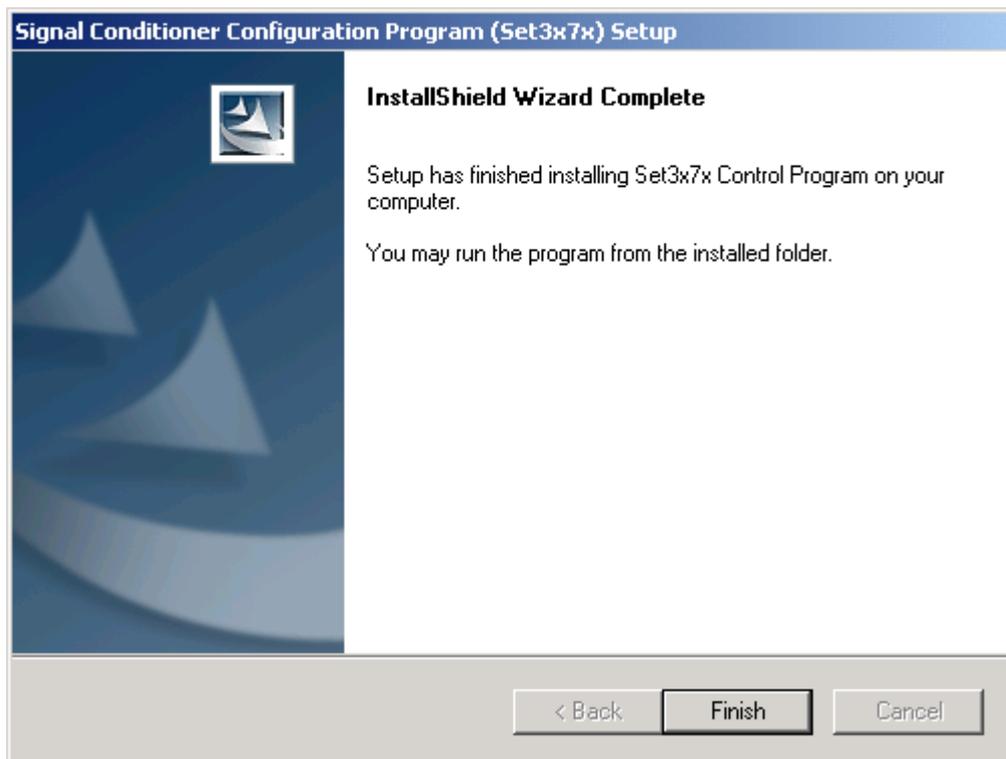
"Finish" button finishes the installation.

Run the program referring to the instruction manual placed in the installed folder, /manual.

4 Registration of USB Driver

For use of the USB Cable, USB service must be registered in the operating system.

The procedure of registration is as follows;

① Insert USB Conversion Cable (REX-USB60F) into the USB port on the PC.

Then, insert CD-ROM of Conditioner Configuration Program into the CD-ROM drive.

② The insertion will automatically boot up the Hardware Wizard.

Click [Next] to proceed to the next stage.

③ Check "Search for a suitable driver for my device [recommended]" of the search device selection and proceed to the next stage.

④ Check [CD-ROM drives] only out of optional search locations, then proceed to [Next].

Found New Hardware Wizard

Locate Driver Files
Where do you want Windows to search for driver files?

Search for driver files for the following hardware device:

USB Device

The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.

To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.

Optional search locations:
☐ Floppy disk drives
☑ CD-ROM drives
☐ Specify a location
☐ Microsoft Windows Update

[< Back] [Next >] [Cancel]

⑤ Confirm the searched and found device is [USB Device], then proceed to [Next].

Found New Hardware Wizard

Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.

USB Device

Windows found a driver for this device. To install the driver Windows found, click Next.

d:\win2com.inf

[< Back] [Next >] [Cancel]
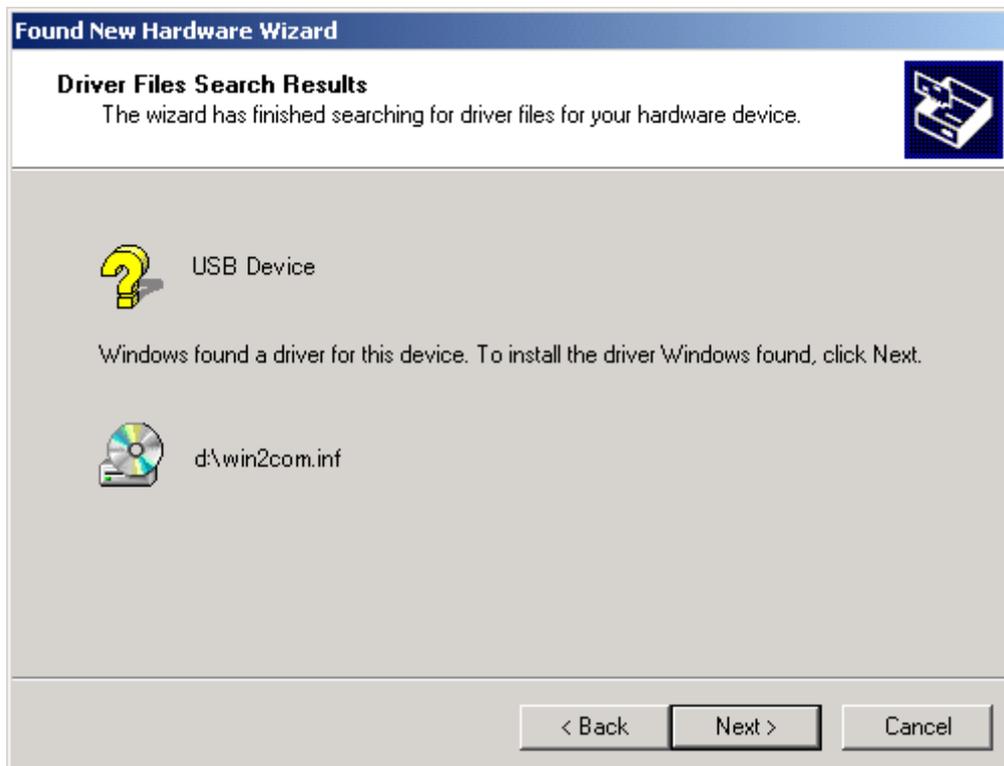
⑥   Confirm the installed device is [USB COM Port], and select [Finish] to finish the Wizard.

⑦   Open Property of My Computer and display [SYSTEM PROPERTY], Select [DEEVICE MANAGER] of [HARDWARE] tag.

Display of [USB COMPORT(COMx)] (x is number) in [COM&LPTI] means that the registration has properly been completed.
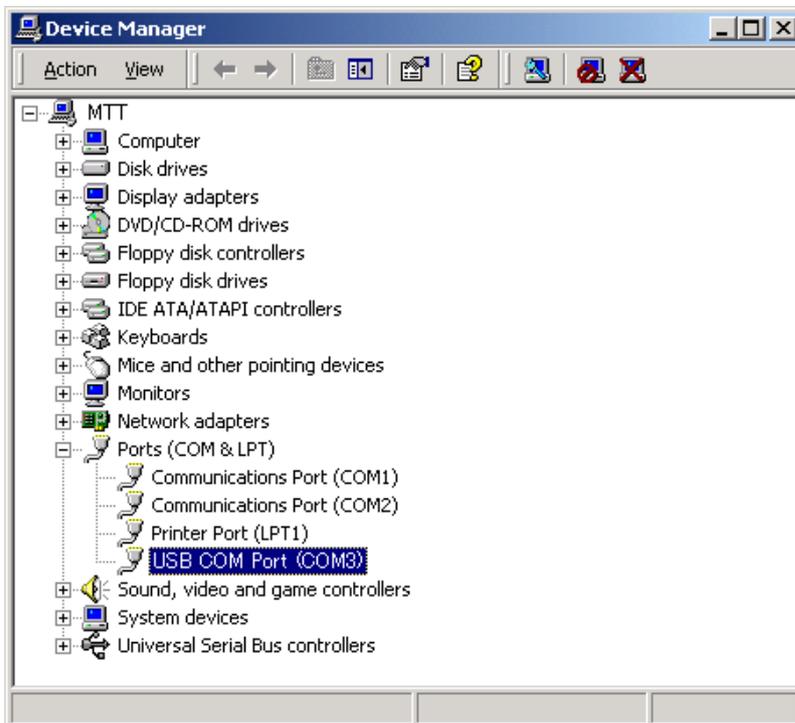
⑧   After the registration, configuration of signal conditioners can be performed by means of dedicated serial cable.

5 Start-up of Program

To start up the Program, double click "Set3x7x_eng.exe" in the folder in which Set3x7x is installed.

Set3x7x_eng

Execution of Set3x7x will display the TOP screen (refer to the following item).

Note: During starting up operation, COM Port of PC will be in use.

During operation of Set3x7x, the same COM Port cannot be used for other software.

6 TOP Dialog

Execution of the configuration program Set3x7x_eng.exe will display the following dialog.

Version Information

Port Selection List Box

Set3x7x Version
Copyright (C) MTT Corporation 2007-2009

COM   COM1   ← START

TRANSFER   ← TRANSFER

PREVIOUS

EXIT   ← EXIT
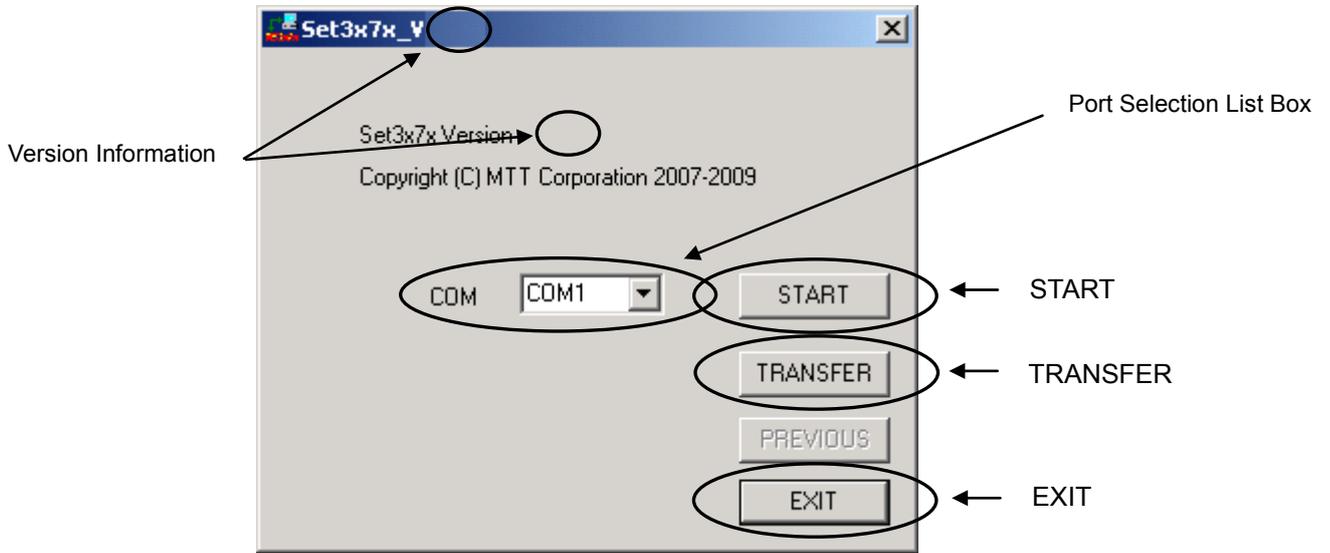
Note: More than one Set3x7x cannot run simultaneously.

If that is tried, the following message will be displayed, so click "OK".

Set3x7x

ALREADY RUNNING

OK
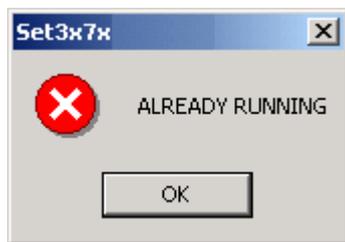
● Version Information

The version Information of this software will be displayed.

● COM Port Selection List Box

Select COM Port out of COM Selection List Box.

The maximum value of COM number is 9.

Note: For USB, the number is the one displayed by Device Manager.

● [START] Button

For configuring signal conditioners, first off, connect them with the PC via the dedicated cable, then, click this button to start the configuration.

During the configuring operation, the conditioner modules are put into PAUSE status. After completion of configuration, make sure to confirm, closing the configuration screen, that the modules are not in PAUSE before removing the cable.

Note: On PAUSE status

The communication between signal conditioner modules and the PC is feasible only in this status. During this status, the modules are in WAIT condition and they cannot function properly unless, after completion of the configuration, the PAUSE status is cancelled to put modules back into functioning condition.

● [TRANSFER] Button

The configuration saved in a file previously can be installed in the same type of conditioners.

(Ref. p28 "11 File Transfer")

● [PREVIOUS] Button

The configuration of conditioners same as the previous one can be transferred as it is.

(Ref. p34"12 transfer of previous setting")

7 Process of Configuration

The following is the process of Configuration by Set3x7x:

① Connect the PC and the Signal Conditioner Modules by means of connecting cable.
(Ref.→2 Operating Environment)

② Run Set3x7x_eng.exe and click [Start] on the right hand side of the screen.
→The Screen for configuration starts and the conditioners are set to PAUSE status.
(Ref.→8 Start Configuration)

③ Make configuration for such items as Sensor Type, Output Range Burn-out Protection.
(Ref. →9 Configuration Screen)

④ Click "CONFIG" button. (Ref.→9 Configuration Screen)

⑤ Make adjustment of ZERO and SPAN, if necessary. (Ref.→9 Setting Screen)

⑥ Click "EXIT" at the lower right of the screen to return to the TOP screen.
→Set3x7x Configuration Screen is closed and the conditioners are set to RUN.
→Set3x7x TOP screen returns. (Ref.→9 Configuration Screen)

⑦ Confirm that the conditioners are in RUN status and remove the cable.

8　Start of Configuration

①　Start of Configuration for every type of conditioners

Before starting configuration, connect conditioner module unit and PC via dedicated serial cable.

②　Click "START" button to acquire such information as type of conditioner modules and their configuration by communicating with the modules. (*Note 1)

If the configuration starts successfully, the configuration screen corresponding to the type of conditioners connected to the serial cable is displayed, and the conditioners turn into PAUSE status (Blue LED blinking). (*Note 2)

*Note1

If the communication with the conditioners failed, the following message will be displayed. So, check the cable connection, etc, after clicking [OK] button.

*Note 2

*On PAUSE status

The communication between signal conditioner modules and the PC is feasible only in this status. During this status, the modules are in WAIT condition and they cannot function properly unless, after completion of the configuration, the PAUSE status is cancelled to put modules back into functioning condition.

9 Configuration Screen for every different type

Clicking [START], button in the TOP screen displays the configuration screen corresponding to the type of conditioner modules.

The name in the screen and the corresponding type No. are as listed below:

```
MS3x71  :  MS3971,  MS3771
MS3x72  :  MS3972,  MS3772
MS3x73  :  MS3973,  MS3773
MS3x74  :  MS3974,  MS3774
MS3768  :  MS3768
```

9.1 MS3x71 Configuration

Starting the configuration with MS3971 and MS3771 being connected will display the following windows.

<u>Do not remove the cable from the conditioner unit before closing the window by clicking [EXIT] button.</u>

① Sensor Type

To select the type of thermocouple to be employed.

② Temperature Range

To input the temperature range. The valid figures are up to 7 digits.

Selection from the list is feasible by clicking [REF] button.

(The items of list differ from type by type of thermocouple.)

③ Output Range

To select the Output range.

When the output range is changed, user ZERO/SPAN adjustment must be done again.

When the fixed voltage type is connected, the output range selection is not available.

The output range for current output type conditioner is 4~20mA.

④　Burnout

To set the output at the time of sensor burnout

OFF	:	Burnout Detecting Function
UP	:	Detection Current ON, Upscale at Burnout
DOWN	:	Detection Current ON, Downscale at Burnout

⑤　PAUSE

To set the output at PAUSE status and the transient time span (0~60 sec.) necessary for conditioners to shift to PAUSE.

⑥　User ZERO/SPAN Adjustment

To set Zero/Span adjustment for output scaling.

The "+" and "-" button can shift the displayed value by the step of "1". The value thus shifted is immediately reflected to conditioners.

Or, the value can be directly input and set by pressing the return key on the key board.

The value to be set shall be between -2047 and 2047.

⑦　Configuration

Configure conditioners for the type of sensor, Input range, Output range, Temperature range, Output at burnout, Output at PAUSE, Transient time to PAUSE.

In addition, do not configure Zero/Span adjustment.

⑧　Configuration Upload

The present configuration of conditioners being connected is read out and displayed.

The displayed value can be saved in file. (Ref. P26 10 Configuration Upload)

⑨　Log information

The version number and 16 items of Log information of conditioners are displayed.

Refer to the description of "Log information" for the details of display.

⑩　End of Configuration

Cancel PAUSE status and close the configuration window.

Menu Bar

● 　[FILE] － [OPEN]

The saved conditioner configuration is read and displayed in each column.

Click [CONFIG] button to set in conditioners. (Ref.p37 [OPEN FILE])

● 　[FILE] － [SAVE]

To save Conditioner configuration in file. (Ref. p35 [SAVE FILE])

● 　[TOOL] － [RETURN TO DEFAULT]

To return the conditioner configuration to original factory setting.

9.2 MS3x72 Configuration

Starting the configuration with MS3972 and MS3772 being connected will display the following windows.

Do not remove the cable from the conditioner unit before closing the window by pressing "EXIT" button.
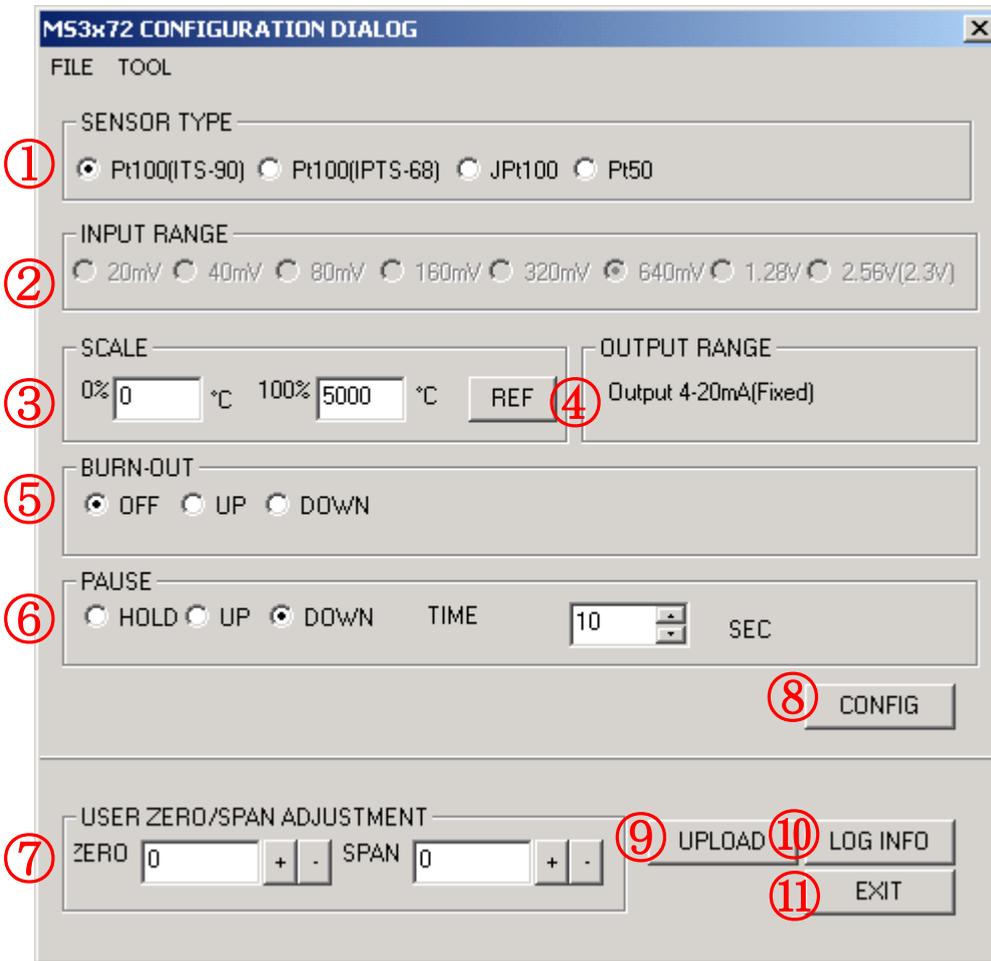
①   Sensor Type

Select the type of RTD.

②   Input Range

Select Input Range

③   Temperature Range

Input the temperature range. Valid figure is up to 7 digits.

Selection from the list is feasible by clicking [REF] button.

(The items of list differ from type by type of RTD)

④   Output Range

Select the Output Range.

When the output range is changed, user Zero/Span conversion adjustment must be done again.

When fixed voltage type is connected, the output range selection is not available.

For fixed voltage type and Current output type, the Output Selection buttons will not be displayed.

⑤   Burnout

To set the output at the time of sensor burnout.

OFF   :   Burnout Detecting Function

UP   :   Detection Current ON, Upscale at Burnout

DOWN   :   Detection Current ON, Downscale at Burnout

⑥   Set the output at PAUSE status and the transient time span(0~60sec.) necessary for conditioners to shift to PAUSE.

⑦   Zero/Span Adjustment.

Set Zero/Span adjustment for output scaling.

The "+" and "-" buttons can shift the displayed value by step of "1". The value thus shifted is immediately reflected to conditioners.

Or, the value can be directly input and set by Return key.

The value to be set shall be between -2047 and 2047.

⑧   Configuration

Configure conditioner for the type of sensor, Input range, Output range, Temperature range, Output at burnout, Output at PAUSE, Transient time to PAUSE.

In addition, do not configure Zero/Span adjustment.

⑨   Configuration Upload

The present configuration of conditioners being connected is read out and displayed.

The displayed values can be saved in file. (Ref. P26 10 Configuration Upload)

⑩   Log Information

The version number and 16 items of Log information of conditioners are displayed.

Refer to the description of "Log information" for the details of display

⑪   End of Configuration

Cancel PAUSE status and close the configuration window.

Menu Bar

● [FILE] － [OPEN]

The saved conditioner configuration is read and displayed in each column.

Click "CONFIG" button to set in conditioners. (Ref.p37 [OPEN FILE])

● [FILE] － [SAVE]

To Save Conditioner Configuration in file. (Ref. p35 [SAVE FILE])

● [TOOL] － [RETERN TO DEFAULT]

To return the conditioner setting to original factory setting.

9.3 MS3x73 Configuration

Starting configuration with MS3973 and MS3773 being connected will display the following windows.

Do not remove the cable from the conditioner unit before closing the window by clicking "EXIT" button.
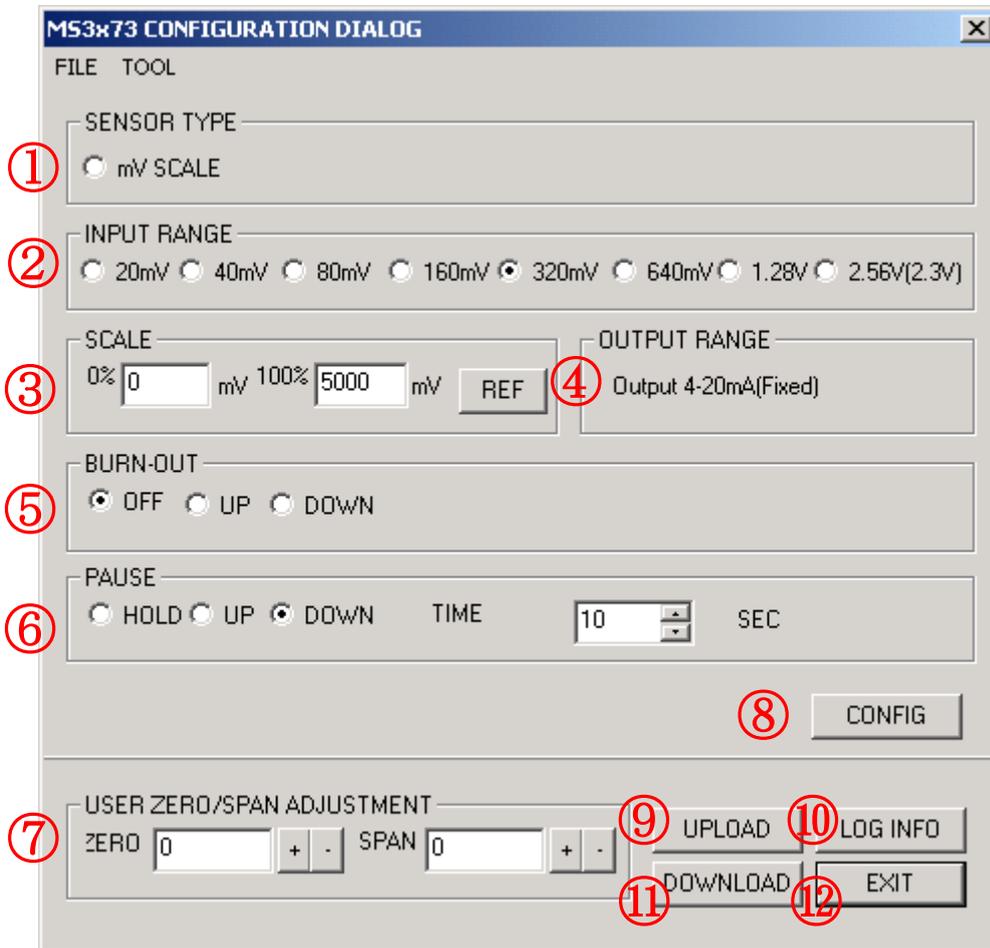
① Sensor Type

For 3793 and 3773, the input should be specified in the unit of mV scale.

② Input Range

Select Input Range.

③ Input Range Value

Input the Input Range. The valid figures are up to 7 digits.

Selection from the list is feasible by clicking "REF" button.

(The items of list differ from each other selected Input range.)

④ Output Range

Select the Output range.

When the output range is changed, user Zero/Span adjustment must be done again.

When fixed voltage type conditioner is connected, the output range selection is not available.

The output range for Current Output type conditioner is 4~20mA.

For Fixed Voltage type and Current Output type, the Output Selection buttons will not be displayed.

⑤　Burnout

To set the output at the time of sensor burnout.

  OFF   : Burnout Detecting Function

  UP   : Detection Current ON, Upscale at Burnout

  DOWN   : Detection Current ON, Downscale at Burnout

⑥　PAUSE

Set the output at PAUSE status and the time span(0~60sec.) necessary for conditioners to shift to PAUSE.

⑦　Conversion Adjustment

To make Zero/Span adjustment for output scaling.

The "+" and "-" buttons can shift the displayed value by step of "1". The value thus shifted is immediately reflected to conditioners.

Or, the value can be directly input and set by return key.

The value to be set shall be between -2047 and 2047.

⑧　Configuration

Configure conditioners for the type of sensor, ADC range, output range, temperature range, output at burnout, output at PAUSE, transient time to PAUSE.

In addition, do not configure Zero/Span adjustment.

⑨　Configuration Upload

The present setting of conditioners connected is read out and displayed.

The displayed set value can be saved it file. P26 (Ref. 10 Configuration Upload)

⑩　Log Information

The version number and 16 items of Log Information of conditioners are displayed.

Refer to the description of "Log Information" for the details of display.

⑪　Coefficient Setting

The user coefficient to be used can be loaded from the file if the type of input is selected by coefficient button.

The coefficient file can be generated by coefficient compilation software.

⑫　End of Configuration

Cancel PAUSE status and close the setting window.

Menu Bar

● [FILE] － [OPEN]

The saved conditioner configuration is read and displayed in each column.

Click "CONFIG" button to set in conditioners. (Ref.p37 [OPEN FILE])

● [FILE] － [SAVE]

To Save Conditioner Program Setting in file. (Ref. p35 [SAVE FILE])

● [TOOL] － [RETERN TO DEFAULT]

To return the conditioner configuration to original factory setting.

9.4 MS3x74 Configuration

Starting the configuration with MS3974 being and MS3774 being connected will display the following windows.

Do not remove the cable from the conditioner unit before closing the window by clicking "EXIT" button.
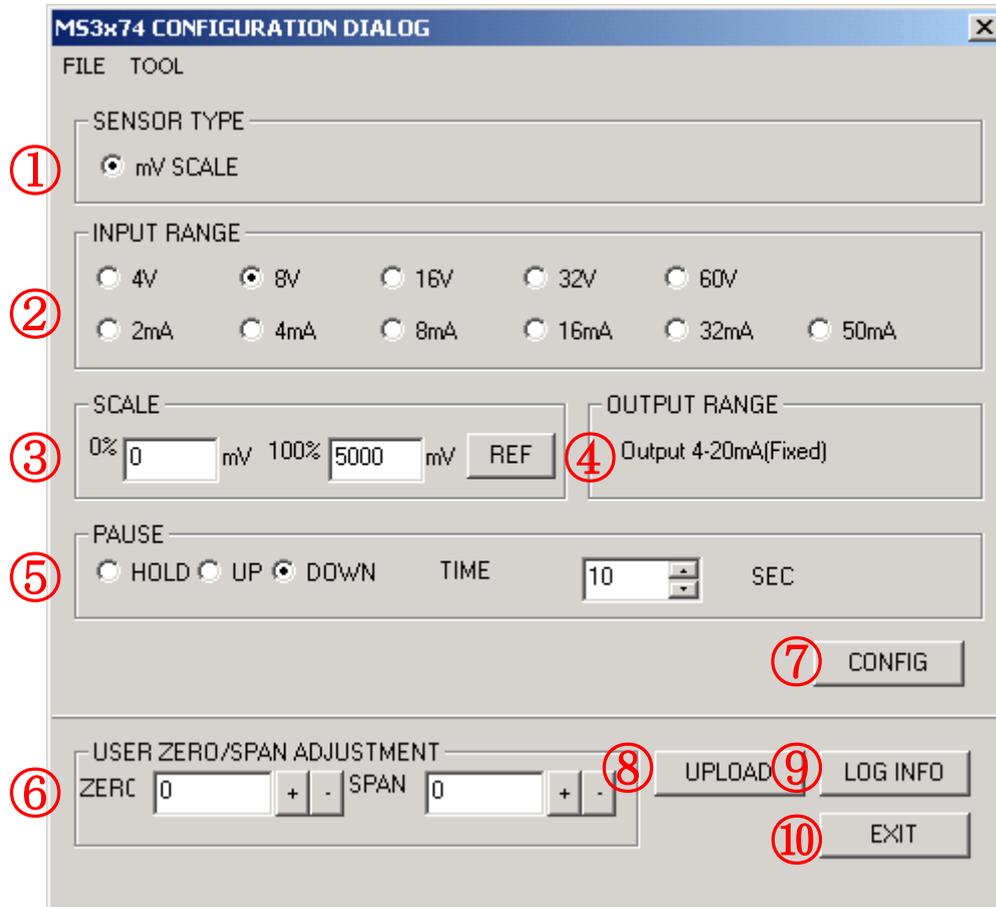
①   Sensor Type

For MS3974 and MS3774, the input should be specified in mV scale.

②   Input Range

To select Input range

③   Input Range Value

Valid figure for Input is up to 7 digits.

For Voltage input, setting shall be in mV and for current input in mA.

Selection from the list is feasible by clicking "REF" button.

(The items of list differ from each other selected Input range.)

④　Output Range

Select the Output range.

When the output range is changed, user Zero/Span adjustment must be done again.

When Fixed Voltage type conditioner is connected, the output range selection is not available.

The output range for Current Output type conditioner is 4~20mA.

For Fixed Voltage type and Current output type, the Output Selection buttons will not be displayed.

⑤　PAUSE

To set the output at PAUSE status and the time transient span(0~60sec.) necessary for conditioners to shift to PAUSE.

⑥　Zero/Span Adjustment

To make Zero/Span adjustment for output scaling.

The "+" and "-" buttons can shift the displayed value by step of "1".

The value thus shifted is immediately reflected to conditioners.

Or, the value can be directly input and set by Return key.

The set value shall be between -2047 and 2047.

⑦　Configuration

Configure conditioners for the type of sensor, Input range, Output range, Temperature range, Output at burnout, Output at PAUSE, Transient time to PAUSE.

In addition, do not configure Zero/Span adjustment.

⑧　Configuration Upload

The present configuration of conditioners being connected is read out and displayed.

The displayed value can be saved in file. (P26 Ref. 10 Configuration Upload)

⑨　Log Information

The version number and 16 items of Log Information of conditioners are displayed.

Refer to the description of "Log Information" for the details of display.

⑩　End of Configuration

Cancel PAUSE status and close the configuration window.

Menu Bar

● 　[FILE] － [OPEN]

The saved conditioner configuration is read and displayed in each column.

Click "CONFIG" button to set in conditioners.(Ref.p37 [OPEN FILE])

● 　[FILE] － [SAVE]

To Save the Configuration Program in file. (Ref. p35 [SAVE FILE])

● 　[TOOL] － [RETERN TO DEFAULT]

To return the conditioner configuration to original factory setting.

9.5 MS3768 Configuration

Starting the configuration with MS3768 being connected will display the following windows.

Do not remove the cable from the conditioner unit before closing the window by clicking "EXIT" button.
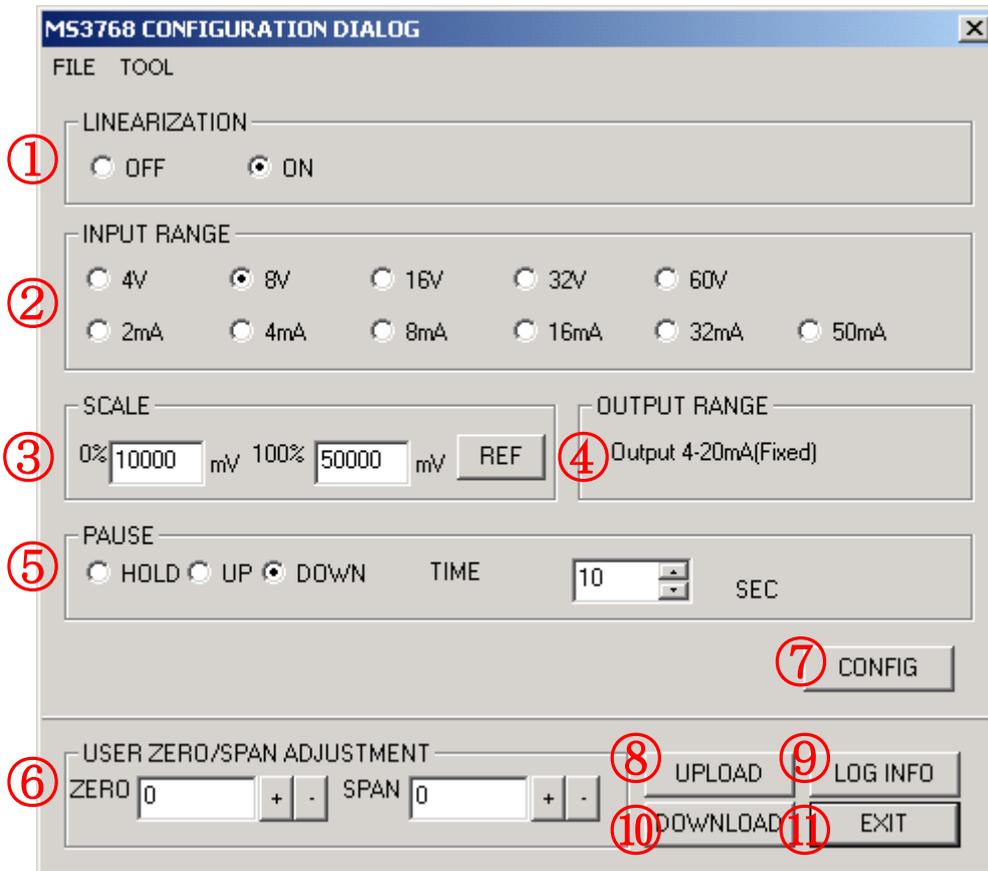
① **Linearization**

Select ON/OFF of the linearizer.

When ON is selected, make setting of coefficient file of the linearizer.

② **Input Range**

To select the Input range.

③ **Input Range Value**

Valid figure for Input is up to 7 digits.

For Voltage input, setting shall be in mV and for Current input in mA.

Selection from the list is feasible by clicking "REF" button.

(The items of list differ from each other selected Input range.)

④ **Output Range**

To select the Output range.

When the output range is changed, user Zero/Span adjustment must be done again.

When Fixed voltage type conditioner is connected, the output range selection is not available.

The output range for Current output type conditioner is 4~20mA.

For Fixed Voltage type and Current output type, the Output Selection buttons will not be displayed.

⑤   PAUSE

To set the output at PAUSE status and the transient time span (0~60sec.) necessary for conditioners to shift to PAUSE.

⑥   Zero/Span Adjustment

To set Zero/Span adjustment for output scaling.

The "+" and "-" buttons can shift the displayed value by step of "1".

The value thus shifted is immediately reflected to conditioners.

Or, the value can be directly input and set by return key.

The set value shall be between -2047 and 2047.

⑦   Configuration

Configure conditioners for the linearizer, Input range, Output range, Temperature range, Output at burnout, Output at PAUSE, transient time to PAUSE.

In addition, do not configure Zero/Span adjustment.

⑧   Configuration Upload

The present configuration of conditioners being connected is read out and displayed.

The displayed configured value can be saved in file. (P26 Ref. 10 configuration upload.)

⑨   Log Information

The version number and 16 items of Log Information of conditioners are displayed.

Refer to the description of "Log Information" for the details of display.

⑩   Coefficient configuration

The coefficient file can be generated by coefficient compilation software.

⑪   End of configuration

Cancel PAUSE status and close the configuration window.

Menu Bar

●   [FILE] ― [OPEN]

The saved conditioner configuration is read and displayed in each column.

Click "CONFIG" button to set in conditioners. (Ref.p37 [OPEN FILE])

●   [FILE] ― [SAVE]

To save Configuration Program in file. (Ref. p35 [SAVE FILE])

●   [TOOL] ― [RETERN TO DEFAULT]

To return the conditioner configuration to original factory setting.

10 Configuration Upload

Clicking the [Upload] button in the configuration menu of each conditioner will display the present configuration of conditioner below:

Conditioner Configuration

at present

User coefficient configured

in conditioner at present

(for MS3768 only)

```
CONFIGURATION INFOMATION                    ×
Model : 3768 C000
Hardware version : 000
Software version : 100
Serial Number : 205001

LINEARIZER: ON
INPUT RANGE: 8V
OUTPUT RANGE: 4 - 20mA(Fixed)
INPUT 0      0%: +0000000
INPUT SPAN 100%: +0005000
@PAUSE, KEEP OUTPUT: DOWN
@PAUSE, OUTPUT TRANSIENT TIME: 10
USER ZERO: +0000
USER SPAN: +0000

         X           Y
01: +01000      +01000
02: +05000      +05000
03: +10000      +10000
04: +10000      +10000
05: +10000      +10000
06: +10000      +10000
07: +10000      +10000
08: +10000      +10000
09: +10000      +10000
10: +10000      +10000
11: +10000      +10000
12: +10000      +10000
13: +10000      +10000
14: +10000      +10000
15: +10000      +10000
16: +10000      +10000
17: +10000      +10000
18: +10000      +10000
19: +10000      +10000
20: +10000 ①    +10000        ②
21: +10000      +10000

        SAVE              EXIT
```

① File Saving

To save the present conditioner configuration in a file.

1. The file Saving Menu will be displayed as shown below:
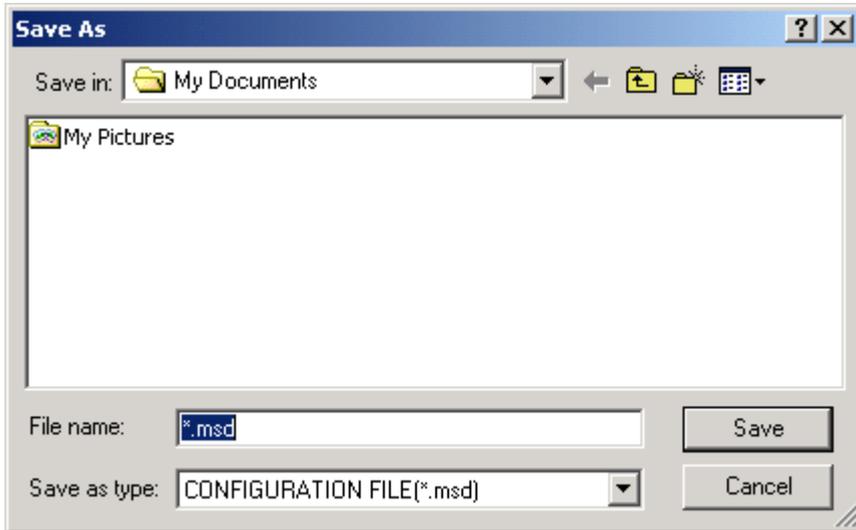
2. For MS3768 only, the format of saving file can be selected.

For saving the configured value only without the user coefficient, msd file shall be selected, and for the configured value including the user coefficient, msf file shall be selected. For those conditioners other than MS3768, msd file format shall be applied to.
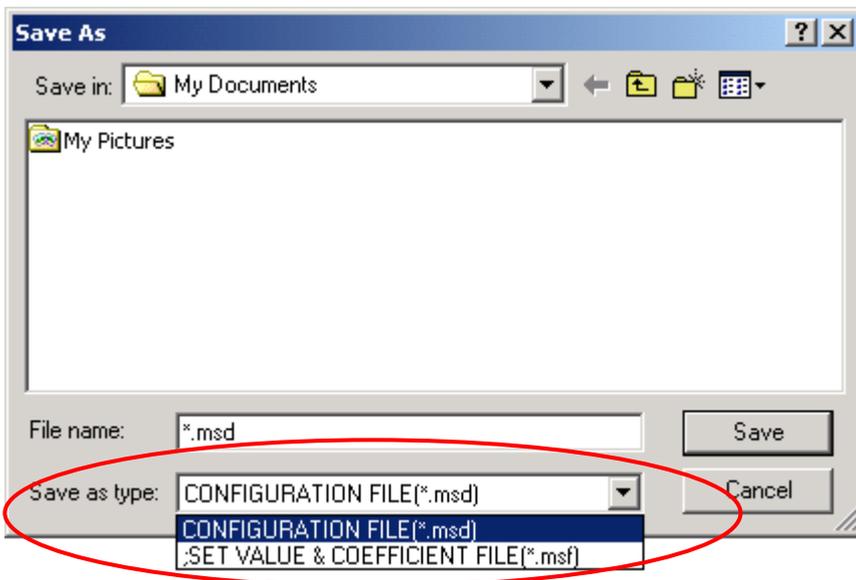
3. Save the file with proper naming.

② Close

Return to the configuration screen by closing the Configuration Download screen.

11 File Transfer

The configuration can be achieved by reading its contents from already saved file and transfer same to conditioners.

This feature is useful to make similar configuration common to more than one piece of conditioner.

The procedure of transfer will be described below. For MS3768 only, coefficient file (coef file), and configuration value & coefficient file (msf file) can be transferred (Refer to [11.2 Transfer of other files].)

11.1 Transfer of configured value (msd file)

① Select [TRANSFER] after starting.

②   The following file transfer screen will be displayed.
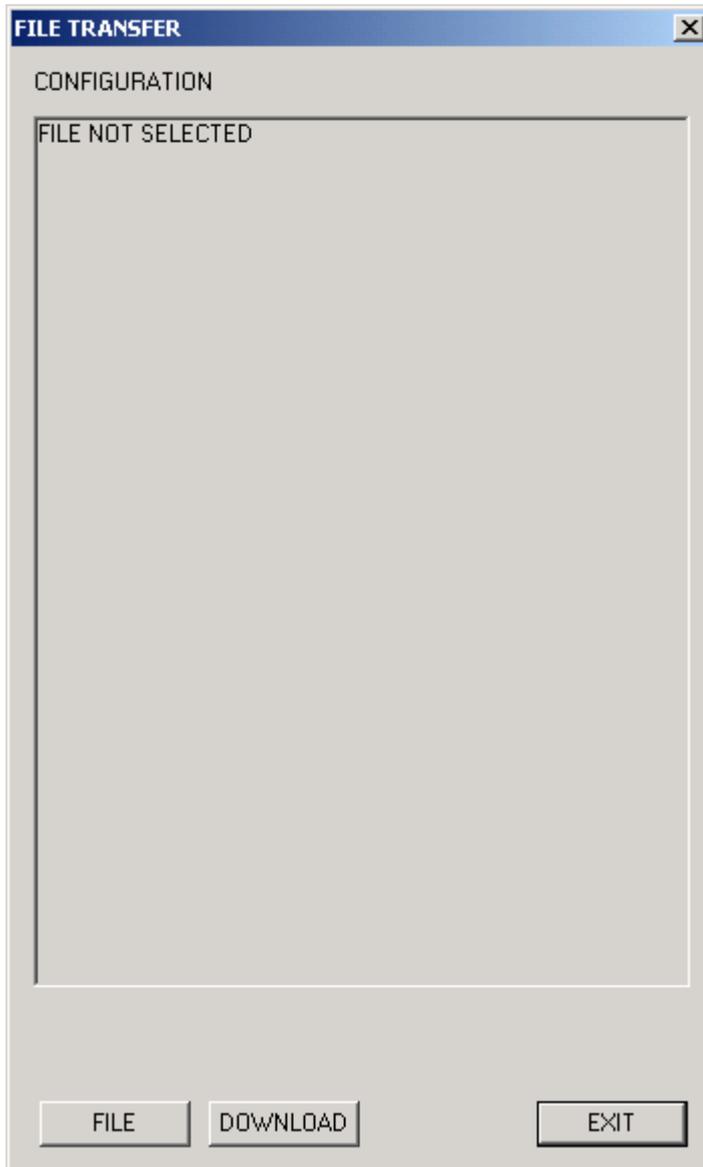
③ Click "FILE" button to select the file to be transferred to conditioners.

The contents of file will be displayed as follows:

```
┌─────────────────────────────────────────────────┐
│ FILE TRANSFER                               [×]   │
├─────────────────────────────────────────────────┤
│  CONFIGURATION                                    │
│  ┌───────────────────────────────────────────┐   │
│  │ CONDITIONE TYPE : MS3771                   │   │
│  │ T.C. : K                                   │   │
│  │ ADC INPUT RANGE : 80mV                     │   │
│  │ TEMPERATURE RANGE : 0 - 200                │   │
│  │ OUTPUT RANGE : 4 - 20mA                    │   │
│  │ OUTPUTTING @ BURN-OUT : UP                 │   │
│  │ OUTPUTTING @ PAUSE STATUS : HOLD           │   │
│  │ OUTPUT TRANSIENT TIME TO PAUSE STATUS : 3  │   │
│  │ USER CONVERTER ADJUST, ZERO   : 0          │   │
│  │ USER CONVERTER ADJUST, SPAN   : 0          │   │
│  │                                            │   │
│  │                                            │   │
│  └───────────────────────────────────────────┘   │
│   ☐ TRANSFER ZERO SPAN SETTING ADJUST             │
│                                                   │
│   ┌────────┐ ┌──────────┐       ┌────────┐        │
│   │  FILE  │ │ DOWNLOAD │       │  EXIT  │        │
│   └────────┘ └──────────┘       └────────┘        │
└─────────────────────────────────────────────────┘
```
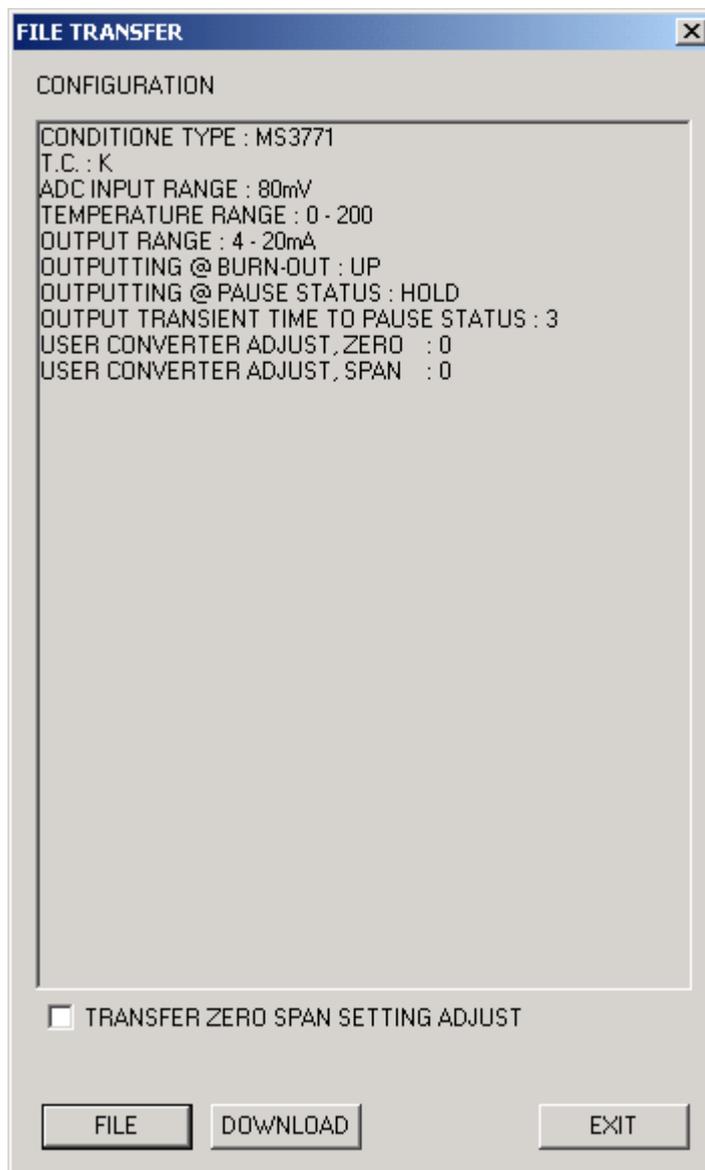
④ Check [TRANSFER ZERO SPAN SETTING ADJUST] and the setting "User Converter Adj. Zero" and "User Converter Adj. Span" will be also transferred to conditioners.

This selection is not necessary unless any change on Zero and Span is required

⑤ Clicking "CONFIG" button will make the contents shown on screen to be set to conditioners.

Do not remove the serial cable before the configuration is completed.

⑥ Return to the Top screen by clicking [EXIT] button.

11.2   Other File Transfer (coef file, msf file)

● **Coefficient File (coef file)**

① When MS3768 configuration file (msd file) is selected, the following items designated by the coefficient file will be additionally displayed.
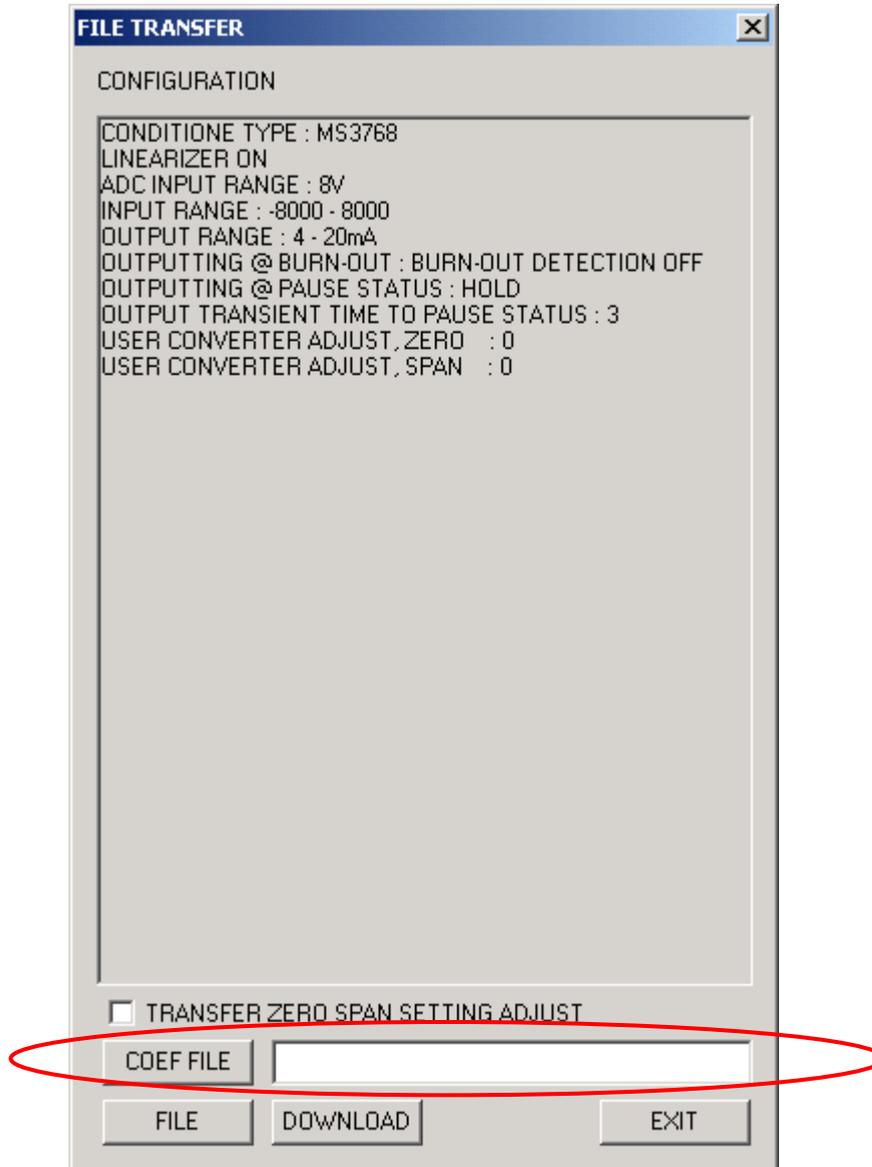
② Check [TRANSFER ZERO SPAN SETTING ADJUST] and the setting "User converter Adj. ZERO" and User converter Adj. Span" will also be transferred to conditioners.

This selection is not necessary unless any change on Zero/Span is required.

③   [CONFIG] button can set both the value and coefficient.

Note

 The configuration cannot be attained if the coef file is not designated or that file is not found.

● **Configured Value & Coefficient File (msf file)**

1. The msf file saving the configured value and the user coefficient can be transferred to MS3768.

    The msf file can be generated by [DOWNLOAD] – [Save], or File Menu [File] – [Save].

    When msf file is selected, the following screen will be shown.

```
FILE TRANSFER                                      ×

CONFIGURATION

CONDITIONE TYPE : MS3768
LINEARIZER ON
ADC INPUT RANGE : 8V
INPUT RANGE : -8000 - 8000
OUTPUT RANGE : 4 - 20mA
OUTPUTTING @ BURN-OUT : BURN-OUT DETECTION OFF
OUTPUTTING @ PAUSE STATUS : HOLD
OUTPUT TRANSIENT TIME TO PAUSE STATUS : 3
USER CONVERTER ADJUST, ZERO   : 0
USER CONVERTER ADJUST, SPAN   : 0

COEF:    X        Y
1:       +00000   +03000
2:       +02000   +08000
3:       +08000   +08000
4:       +08000   +08000
5:       +08000   +08000
6:       +08000   +08000
7:       +08000   +08000
8:       +08000   +08000
9:       +08000   +08000
10:      +08000   +08000
11:      +08000   +08000
12:      +08000   +08000
13:      +08000   +08000
14:      +08000   +08000
15:      +08000   +08000
16:      +08000   +08000
17:      +08000   +08000
18:      +08000   +08000
19:      +08000   +08000
20:      +08000   +08000
21:      +08000   +08000

□ TRANSFER ZERO SPAN SETTING ADJUST

COEF FILE  [                              ]

  FILE        DOWNLOAD            EXIT
```

2. Check [TRANSFER ZERO/SPAN SETTING ADJUST], and the setting "User Adj. Zero" and "User Adj Span" displayed in the screen will be transferred to conditioners.

    Do not select this operation if Zero/Span of the conditioners are not changed.

3. [CONFIG] button can set both the configured value and coefficient.

12 Transfer the Previous Configuration

After starting Set3x7x, when conditioner configuration is done by the [CONFIG] button in the configuration screen for each type of conditioner, the same contents can be set by [Transfer the previous configuration] in the Top screen.

To make configuration to more than one unit of conditioners by [Transfer the previous configuration] button.

① Start Set3x7x.

② Connect serial cable to the first conditioner, then click [START] button in Top screen.

③ Select each item and make configuration by [CONFIG] button.

④ Return to TOP screen by clicking [EXIT] button.

⑤ Connect serial cable to the second conditioner, and make configuration setting by clicking [TRANSFER] button.

⑥ Repeat ⑤ for the rest of conditioners in the system.

13 File Saving

The selection of configuration screen can be saved in a file by choosing [File]-[Save] from the Menu Bar of configuration screen for each type of conditioners.
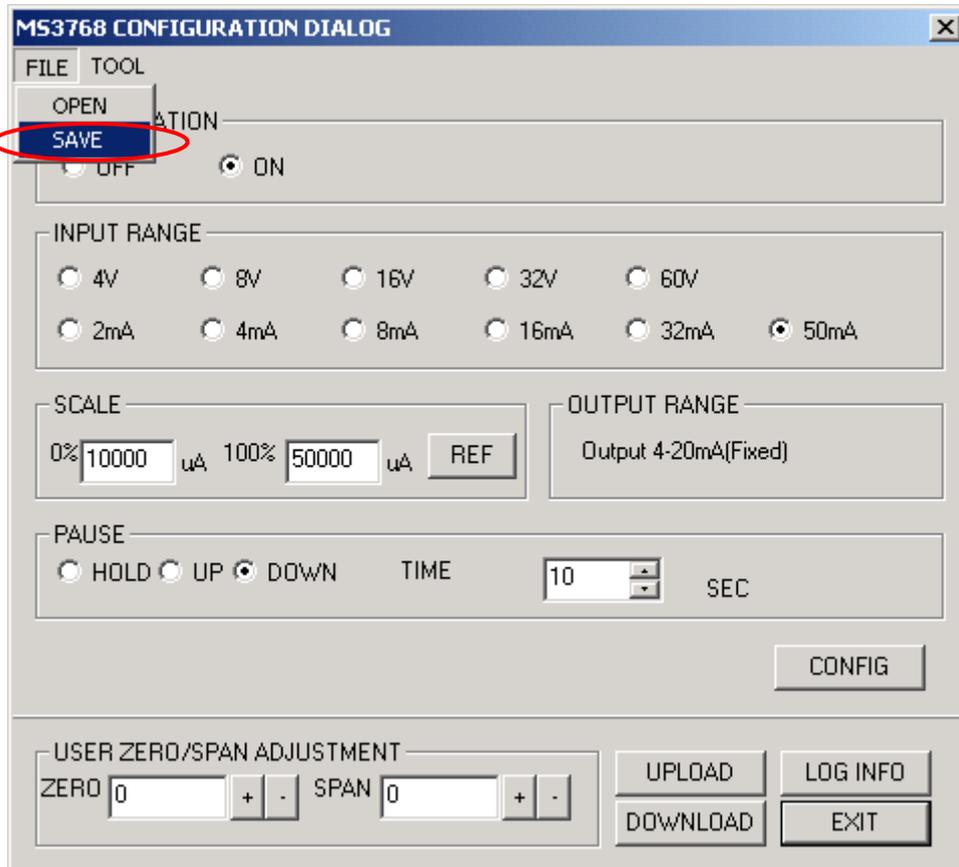
① The File Saving Menu is displayed as shown below:
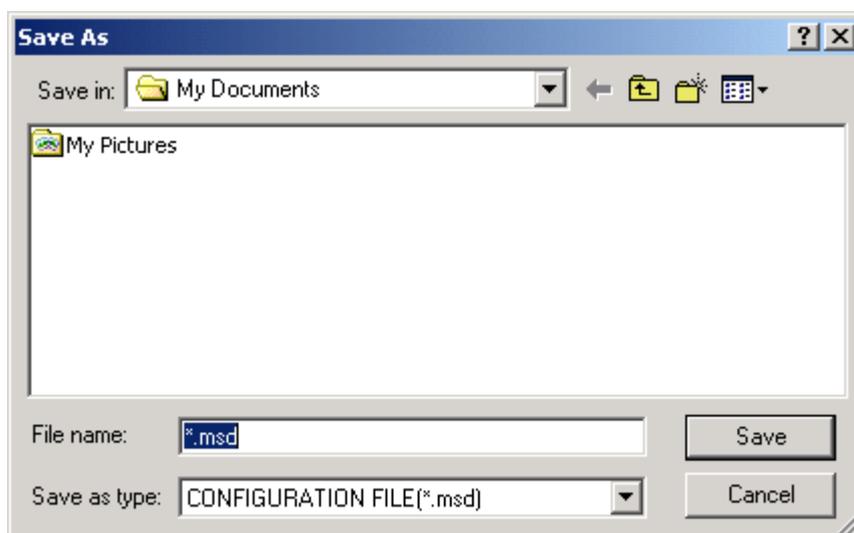
② Format of saving file only for MS3768 can be selected.

Format of msd file shall be selected for saving the configured value without user coefficient, and that of msf file shall be for the configured value including user coefficient.

As for conditioners other than MS3768, msd file shall be selected.
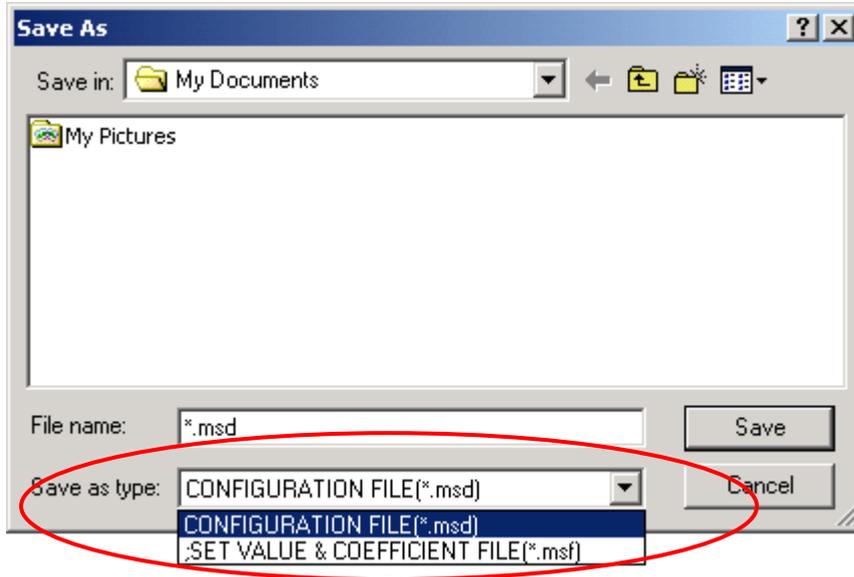
③ Save the file with proper naming.

14 OPEN FILE

The saved files, msd and msf (only for MS3768) can be downloaded by [File]-[Open] from Menu Bar in configuration screen.
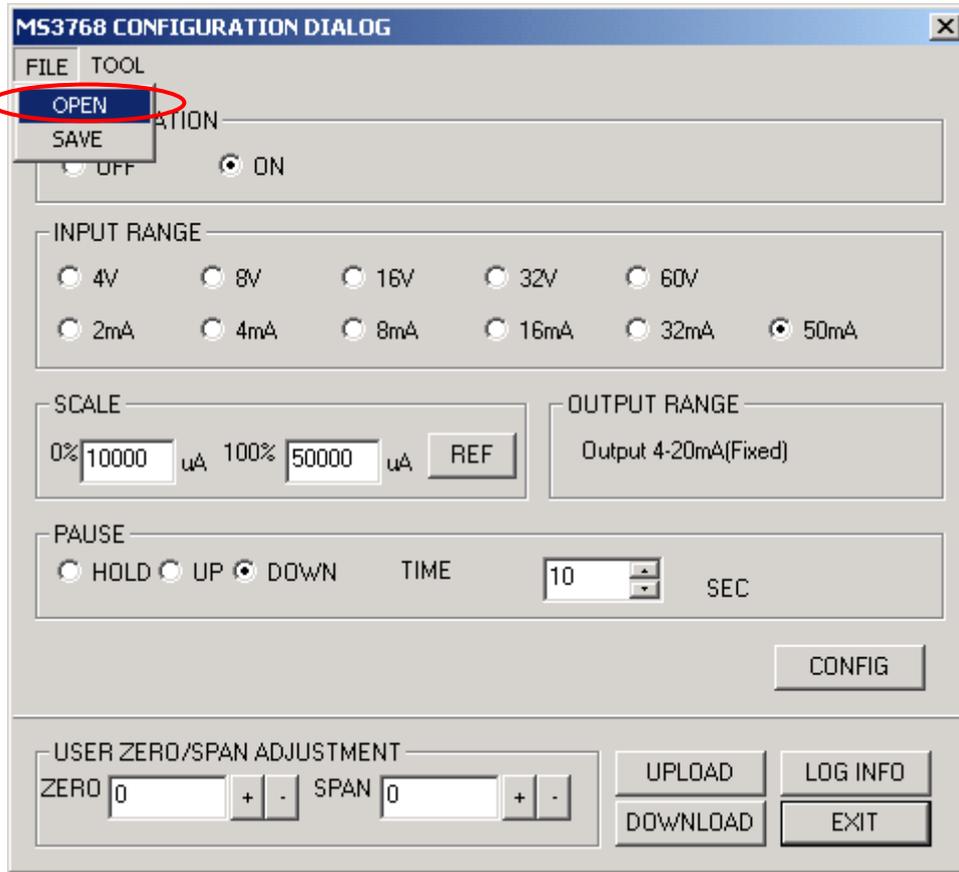
① Menu to open the file will be displayed as shown below:
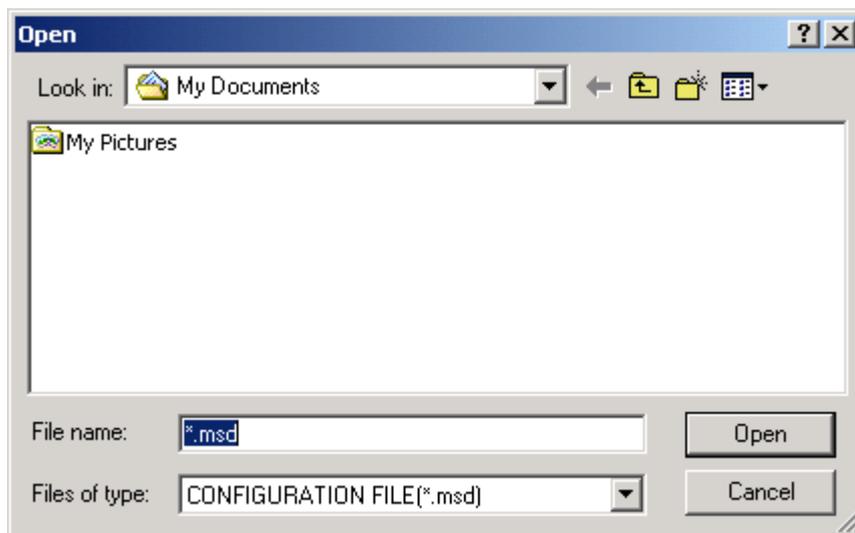
② Format for opening the file (msd file, msf file) only for MS3768 can be selected.
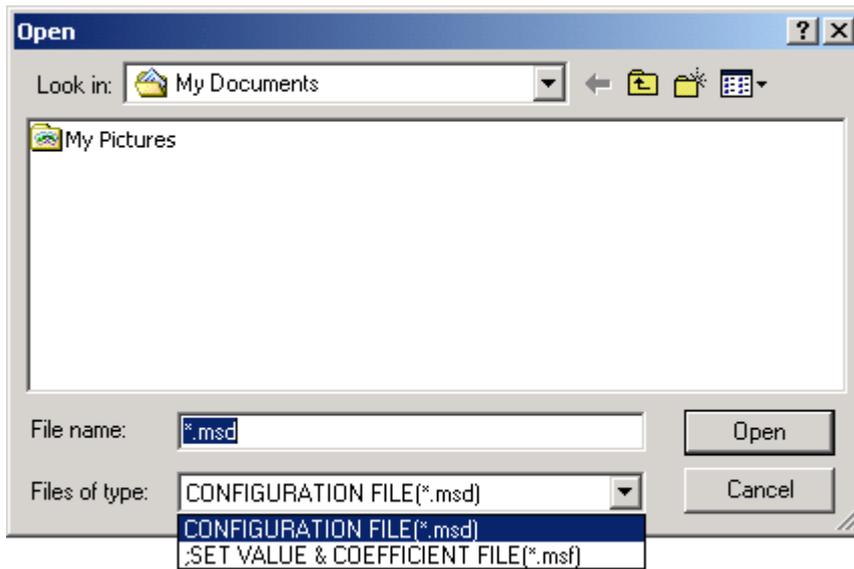
③ The configuration value for the file will be reflected to the screen.
   If msf file is selected, the user coefficient saved in the file shall be set to conditioners.

④ The configured value being displayed by [Configuration Transfer] shall be set to conditioners.

15 Log Information
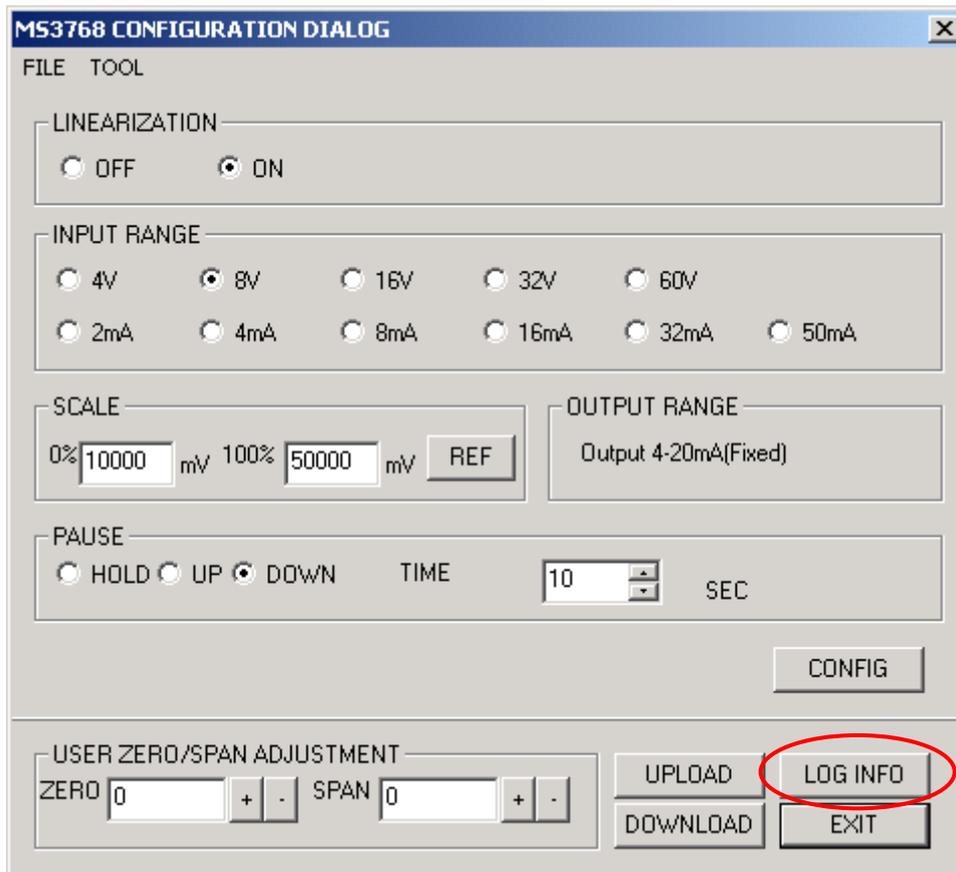
Clicking [Log] button in the configuration screen will display the following Log Information.

The Log Information displayed contains past 16 items including the last one. Refer to the description in the next page.
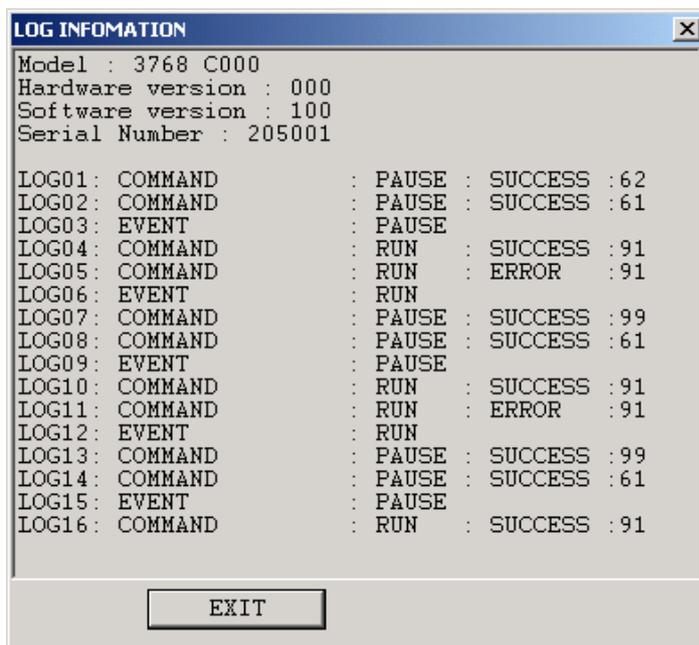
Description of display

   Model : 373000   ←Type information of model

   Hardware version : 306   ←Information of Hardware version

   Software Version : 031   ←Information of Software version

   Serial Number : ?03001   ←Serial Number

Log 01:Command   :PAUSE:SUCCESS:62
Log 02:Command   :PAUSE:SUCCESS:08
Log 03:Command   :PAUSE:SUCCESS:07
Log 04:Command   :PAUSE:SUCCESS:05
Log 05:Command   :PAUSE:SUCCESS:13
Log 06:Command   :PAUSE:SUCCESS:04
Log 07:Command   :PAUSE:SUCCESS:03
Log 08:Command   :PAUSE:SUCCESS:02   Log Information of Module
Log 09:Command   :PAUSE:SUCCESS:01
Log 10:Command   :PAUSE:SUCCESS:60
Log 11:Command   :PAUSE:SUCCESS:62
Log 12:Command   :PAUSE:SUCCESS:61
Log 13:Command   :PAUSE
Log 14:Command   :RUN   :SUCCESS:91
Log 15:Command   :RUN
Log 16:Command   :PAUSE:SUCCESS:99

  (Log No.: Log Type : Status : Status Type : Supplements)

The Log Type contains "Event, Error Occurrence, Error Reset, Command".

Regardless of Log Type, the status of module is displayed as "INIT, RUN, PAUSE, ERROR, HALT".

As for the type of status, when the Log Type is ERROR OCCURRED and ERROR RESET, the type of Error to be displayed will be any of WDT error, Power Trouble, Memory Error, ADC Disorder, DA Disorder, Unusual Internal Temp., or Burnout Error.

When Log Type is a command, command receiving result is displayed as "Success, Error, Busy, then the ID of received command will be displayed.

Command ID	List of Setting Command	How to Transfer
01	Sensor Type Setting	Transfer by Updating
02	Input Range Setting	Transfer by Updating
03	Temp. Range 0% Setting	Transfer by Updating
04	Temp. Range 100% Setting	Transfer by Updating
05	Burnout Output Setting	Transfer by Updating
07	Output at PAUSE Setting	Transfer by Updating
08	Shifting Time to PAUSE Setting	Transfer by Updating
10	User ZERO Setting	At ZERO adjust. Operation in User adjust column
11	User SPAN Setting	At SPAN adjust. Operation in User adjust column
61	Configuration Info. Download	At clicking "Start" button
62	Module Info. Download	At Log Info. Download
29	Factory Setting Resumption	At clicking "Return to default" button.
99	End of PAUSE	At clicking "End of Setting" button