Instruction Manual

PARAMETER LOADER FOR PAPERLESS RECORDER

TYPE: PHR/PHW

Fuji Electric Co., Ltd.

INP-TN513551h-E

WARNING

- If an error or improper operation occurs in our product, or customer-made programs should be found defective, protection and safety circuits, etc should be provided for safety of the system to be used. In addition, safety measures should be taken against personal injury or fatal accident to the system.
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- This manual is subject to change without previous notice.
- Although we always keep track of the information contained herein to assure accuracy, Fuji will not be responsible for any damage to the system due to mistakes, skip or misuse in writing
- Be sure to read the Readme.text file included in CD-ROM.
- Depending on the environment to be used and the usage, it may not operate normally.
- Please note that operation except the Personal Computer which made by maker, such as self-assembled PC and so on, cannot be guaranteed.

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Request

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Description in this manual will be changed without prior notice for further improvement.

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1. OUTLINE

1.1 Foreword

This instruction manual describes installation and operation for the parameter loader of the paperless recorder. Read it carefully before use.

1.2 Parameter loader for paperless recorder

Connect the parameter loader (hereafter referred to as loader) to the paperless recorder using commercially available USB cable or LAN cable, and referencing (uploading), editing, and setting (downloading) of each parameter of the paperless recorder can be made. Connect USB miniB type male connector to the paperless recorder.

Note: Optionally available dedicated cable is required to use the loader for program versions V01A to V22A of the paperless recorder PHR main unit.

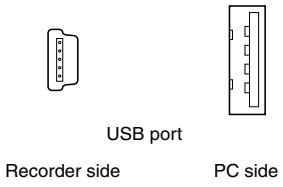
1.3 Contents of package

The following items are packaged with the product.

- CD-ROM for installation: 1
- Instruction manual which is installed to above CD-ROM

1.4 Recommended operating environment

- Microsoft Windows 2000 or XP or Windows 7 (Home Premium, Professional (Not applicable for 64 bit version)). (Operation by Windows 95/98/Me/NT is not secured.)
- Hard disk with a free capacity of 30MB or more
- RAM with 64MB or more
- USB port
- USB cable [USB(A) male–USB(miniB) male, or Type PHZP1801]
- LAN port (when provided with Ethernet option)
- LAN cable (when provided with Ethernet option)



Note: Hardware requirements of the loader are as follows when it is used for program versions V01A to V22A of the paperless recorder PHR.

- RS-232C serial port (D-sub 9 pin)
- Communication cable dedicated to parameter loader (Option: PHZP0201)

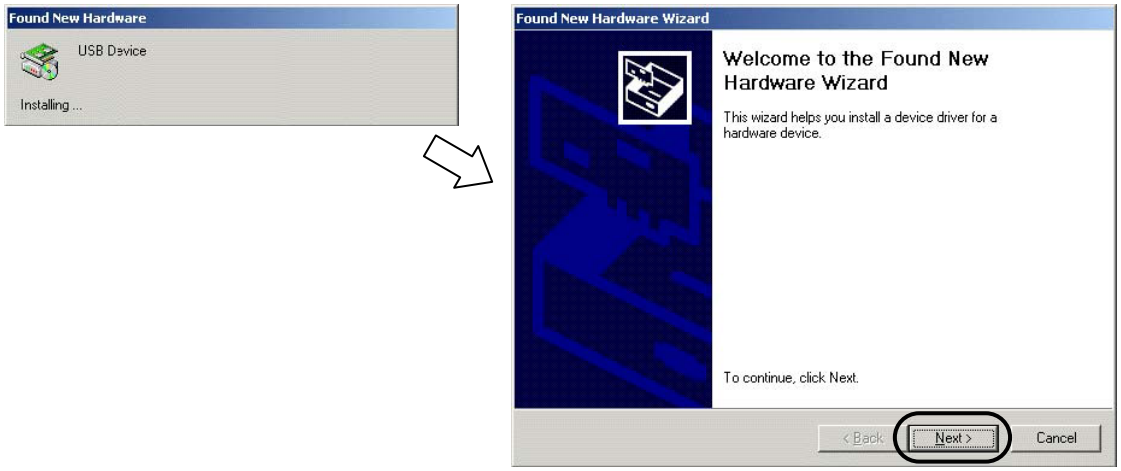
1.5 Installing the parameter loader for paperless recorder

1) If other application software programs are open, terminate all of them.
2) If the programming loader has been already installed, open “Add/Remove Programs” on Control Panel and delete the parameter loader.
3) Set CD-ROM in the personal computer drive.
4) Start “Setup. exe” in the CD-ROM.
5) Follow the prompts displayed on the screen.
6) Please install the main body of the parameter loader.
   A message is displayed, prompting you to verify that “Parameter loader setup is complete”.
   Now, the Parameter Loader installation is completed.

1.6 Installing USB communication driver

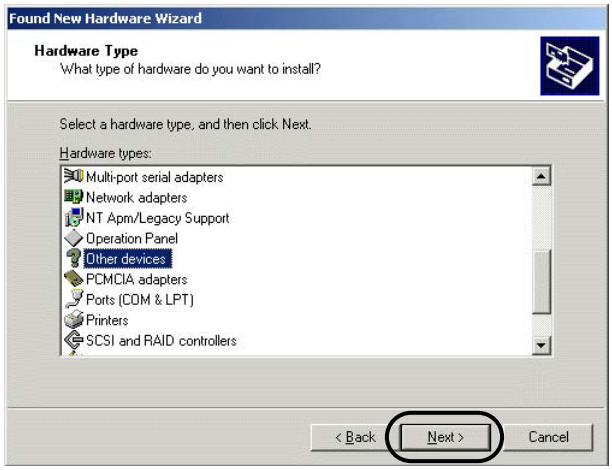
The driver can be installed on Windows XP as follows for example.

1) Connect the USB port of the paperless recorder whose power has been turned on and a running PC with a USB cable.
2) The message “Found New Hardware” and then the driver installation wizard appear on the computer. Click the [Next] button.

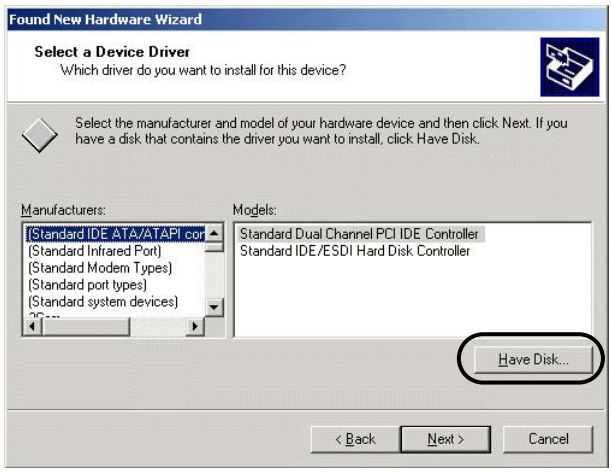


3) When the dialog box below is displayed, select [Display a list of the known drivers for this device so that I can choose a specific driver] and click the [Next] button.

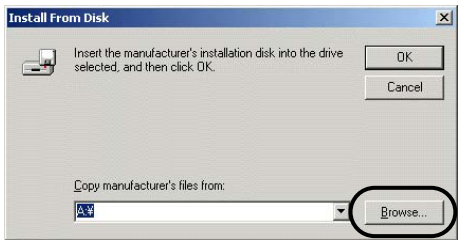
4) The dialog box below is displayed. Select [Other Devices] and click the [Next] button.



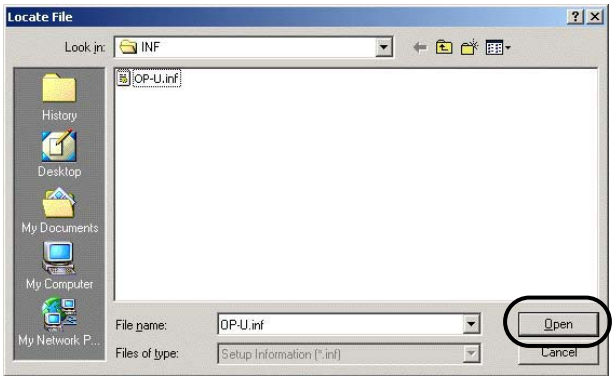
5) The dialog box below is displayed. Click [Have Disk].



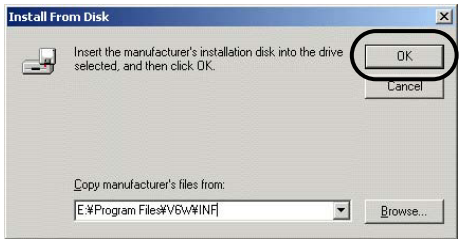
6) The [Install From Disk] dialog box is displayed. Click the [Browse] button.



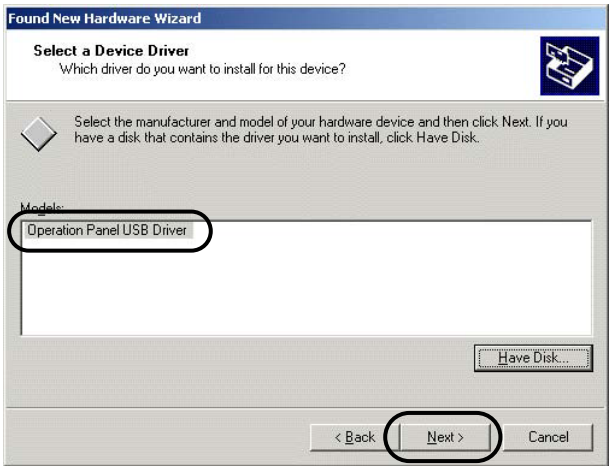
7) The USB driver "OP-U.inf" is automatically stored in the "inf" folder within the install folder ("C: ¥ Program Files ¥ ParameterLoader" usually) of the parameter loader.
Select the "OP-U.inf" file and then click "Open."



8) The previous dialog box is displayed again. Check the path shown under [Copy Manufacturer's Files From:] and click the [OK] button.



9) The dialog box below is displayed. Check that [Operation Panel USB Driver] is shown under [Models:]. Click the [Next] button.

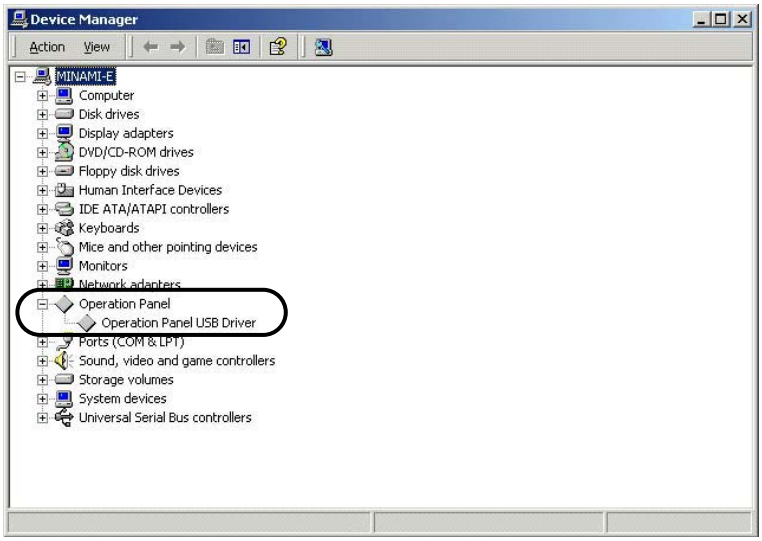


10) The driver installation starts.

11) The dialog box below is displayed on completion of installation. Click the [Finish] button.

Recognition of USB Driver

When the driver has been installed successfully and the paperless recorder and the computer are connected with a USB cable, the [Device Manager] window shows “Operation Panel - Operation Panel USB Driver.”



This will disappear when the paperless recorder and the computer are disconnected.

If [Other Device] or [?] is shown even while their connection via USB is maintained, the USB driver may not be recognized. If this happens, uninstall the USB driver once and reinstall it.

1.7 Uninstalling the parameter loader software for paperless recorder

For un-installation of the parameter loader for the paperless recorder, proceed from Start of Windows → Setting → Control Panel → Add or delete application. And select Recorder Parameter Loader and follow Windows' instructions and cautions to delete it.
When you install a different version, be sure to un-install the software, which is currently installed, in advance in the above procedures. If not un-installed, it might result in malfunctions such as not starting.

1.8 Cautions

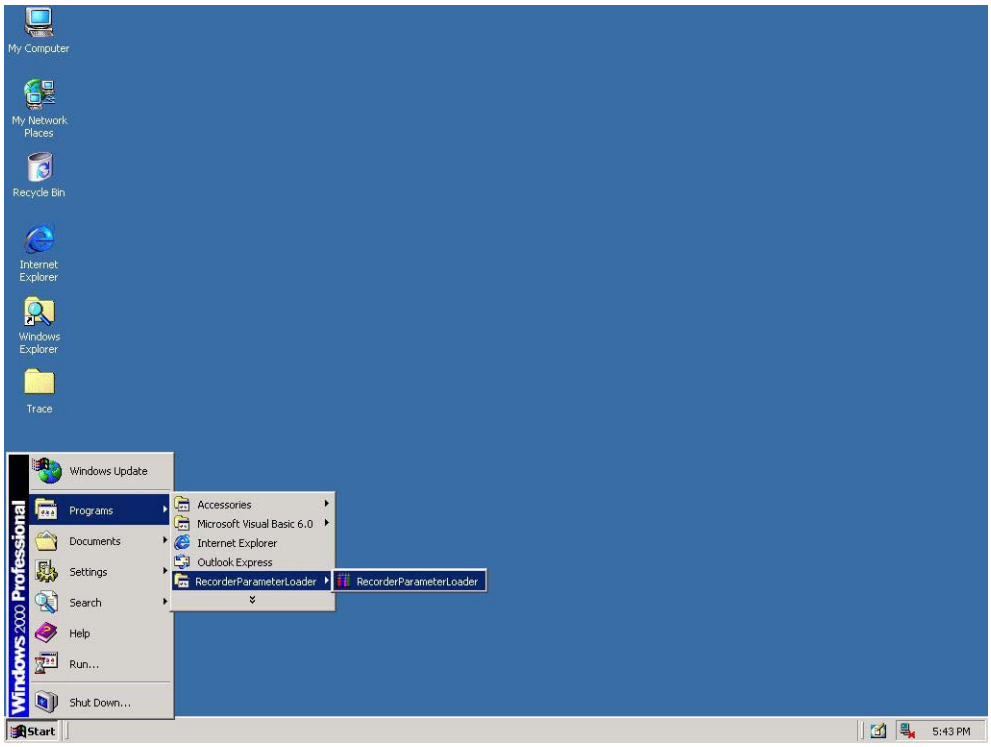
When operating the Loader, be careful of the following items:

1) The Loader is used for the paperless recorder only.
2) Initial values on each Loader screen may be different from those of the paperless recorder main unit.
3) For the communication setting for the paperless recorder ("Main Unit Set" → "Communication Setting"), the Front communication function should be set to ON. (After the Front communication function has been switched from OFF to ON, turn OFF the power once, and then turn it ON.)
4) Before starting the paperless recorder, be sure to assure that the Loader setting is reflected to the paperless recorder.
5) The Loader cannot use more than 1 window at the same time.
   If more than 1 window is open, leave only a single window open and close all of other windows (this can be checked on the Window menu).
6) Whenever you want to write the setting data on parameter loader into paperless recorder, please return the display of paperless recorder to Display Mode such as Real Time Trend Screen. Don't display Parameter Setting Screen, or this loader software may miss to write into the paperless recorder.
7) When you use this loader to write into the paperless recorder PHR which the program version is V01A to V05A, and you change the input type to 0 to 5Vdc, paperless recorder receives the input type as 1 to 5Vdc instead of 0 to 5Vdc. And then, this loader's setting is also changed to 1 to 5Vdc. (This is because the main unit does not support 1 to 5Vdc input function.)
8) At this loader, some parameters which do not exist on paperless recorder may be displayed. But the parameter which doesn't exist in paperless recorder isn't written.
9) **During the paperless recorder is recording or totalizing, it is impossible to write into the equipment from this parameter loader.**

2. BASIC OPERATION

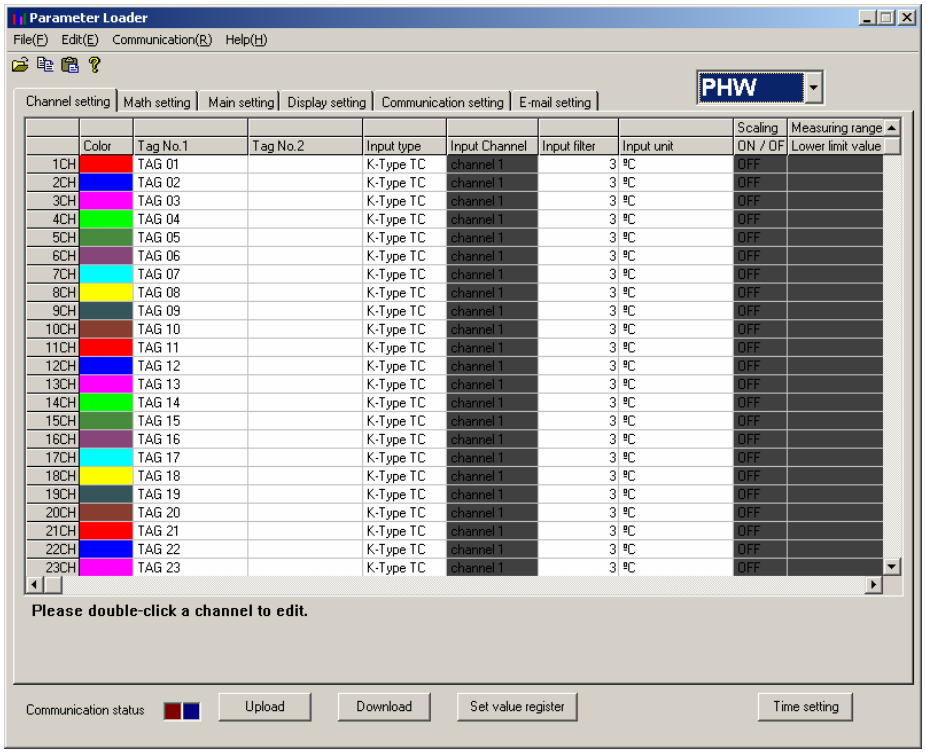
2.1 Start

Click “Programs” ⇒ “Recorder Parameter Loader” ⇒ “Recorder Parameter Loader” from the Start menu.



It is displayed such as following screen.

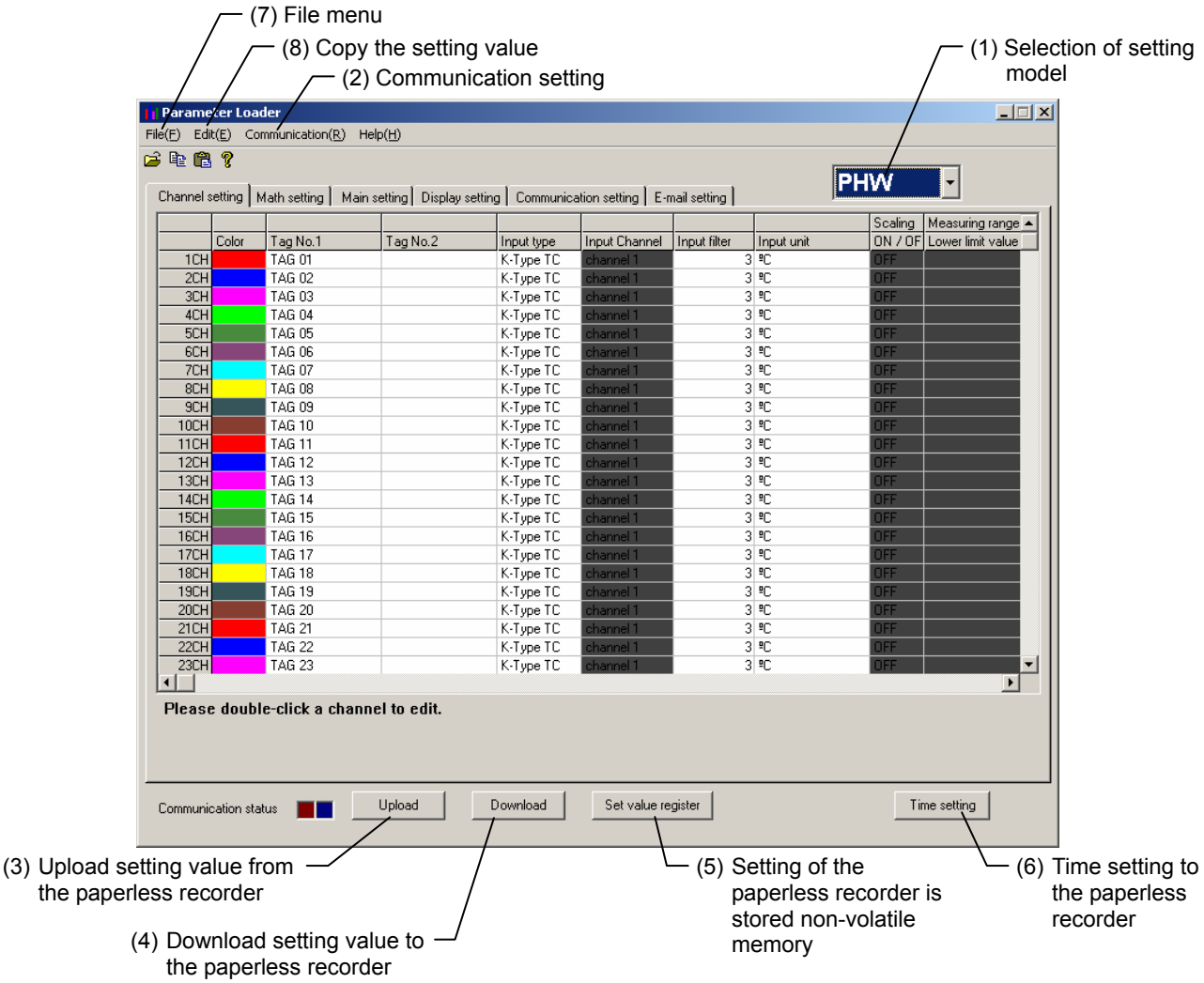
Note) The screen for maximum channels is displayed, regardless of the number of channels of the paperless recorder.



	Color	Tag No.1	Tag No.2	Input type	Input Channel	Input filter	Input unit	Scaling ON / OF	Measuring range Lower limit value
1CH		TAG 01		K-Type TC	channel 1	3	℃	OFF	
2CH		TAG 02		K-Type TC	channel 1	3	℃	OFF	
3CH		TAG 03		K-Type TC	channel 1	3	℃	OFF	
4CH		TAG 04		K-Type TC	channel 1	3	℃	OFF	
5CH		TAG 05		K-Type TC	channel 1	3	℃	OFF	
6CH		TAG 06		K-Type TC	channel 1	3	℃	OFF	
7CH		TAG 07		K-Type TC	channel 1	3	℃	OFF	
8CH		TAG 08		K-Type TC	channel 1	3	℃	OFF	
9CH		TAG 09		K-Type TC	channel 1	3	℃	OFF	
10CH		TAG 10		K-Type TC	channel 1	3	℃	OFF	
11CH		TAG 11		K-Type TC	channel 1	3	℃	OFF	
12CH		TAG 12		K-Type TC	channel 1	3	℃	OFF	
13CH		TAG 13		K-Type TC	channel 1	3	℃	OFF	
14CH		TAG 14		K-Type TC	channel 1	3	℃	OFF	
15CH		TAG 15		K-Type TC	channel 1	3	℃	OFF	
16CH		TAG 16		K-Type TC	channel 1	3	℃	OFF	
17CH		TAG 17		K-Type TC	channel 1	3	℃	OFF	
18CH		TAG 18		K-Type TC	channel 1	3	℃	OFF	
19CH		TAG 19		K-Type TC	channel 1	3	℃	OFF	
20CH		TAG 20		K-Type TC	channel 1	3	℃	OFF	
21CH		TAG 21		K-Type TC	channel 1	3	℃	OFF	
22CH		TAG 22		K-Type TC	channel 1	3	℃	OFF	
23CH		TAG 23		K-Type TC	channel 1	3	℃	OFF	

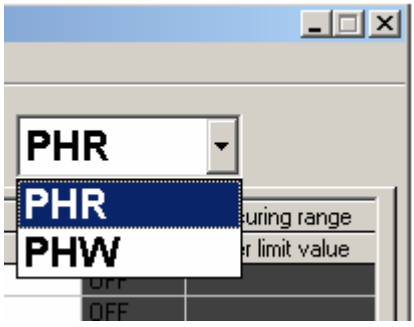
Table of setting channel display

2.2 Table of setting channel display



(1) Selection of setting model

Setting model can be selected by the parameter loader.



Display contents or setting range on the setting screen varies with each model.

	PHR	PHW
Channel setting	18 channels (ch1 to 18)	36 channels (ch1 to 36)
Calculation channel setting	12 channels (ch19 to 30)	36 channels (ch37 to 72)
DI setting	10	16
DO setting	28	36
Screen group setting	4 groups	8 groups

(2) Communication setting

The setting on the communication with the paperless recorder can be made.

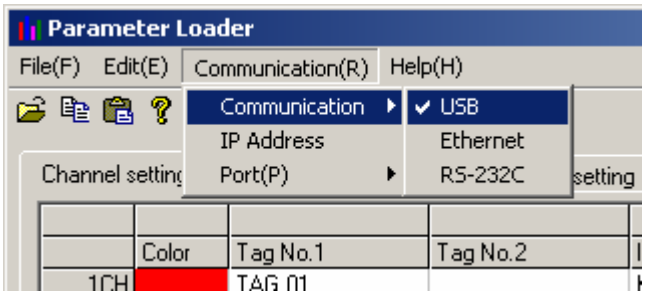
a) Communication

The communication method with the paperless recorder can be selected from USB, Ethernet, and RS-232C.

Note:

1) USB or Ethernet communications cannot be conducted if the program version of the paperless recorder PHR is V01A to V22A. Make sure to set the station No. of the parameter loader to 1.

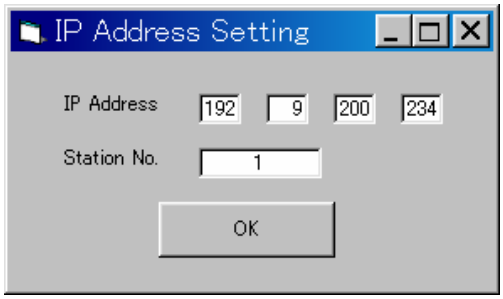
2) RS-232C communications cannot be conducted if the program version of the paperless recorder PHW or PHR is V27A or later. Note that to conduct Ethernet communications, optional Ethernet communication board is necessary. To conduct USB communications, make sure to set the station No. of the parameter loader to 1.



b) IP Address, Station No.

Setting is necessary to conduct Ethernet communications with the paperless recorder.

IP Address and Station No. of the paperless recorder can be set.



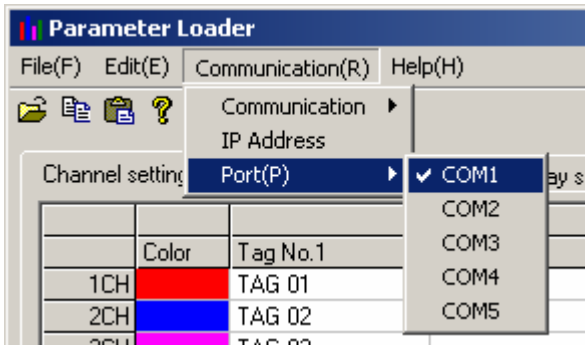
c) Port

Setting is necessary to conduct RS-232C communications with the paperless recorder.

The communication port of the PC used to communicate with the paperless recorder can be set.

This function can change communication port of PC which communicates with paperless recorder. At starting of this loader, COM1 is selected as communication port. Set the port number that you want to use at first.

At the executing screen, click [Com(R)] → [Port(P)] and select using port. Normally, COM1 is selected. (Normally COM1 is selected.)



(3) Upload setting value from the paperless recorder

It is available to upload all the setting such as channel setting, math channel setting, main setting, display setting and so on from the paperless recorder.

(4) Download setting value to the paperless recorder

It is available to download all the setting such as channel setting, math channel setting, main setting, display setting and so on to the paperless recorder.

Note: 1) Download prohibit during recording or totalizing.

2) After the data has been downloaded to the paperless recorder, store non-volatile memory, or the setting value will return to the former value when power is turned OFF.

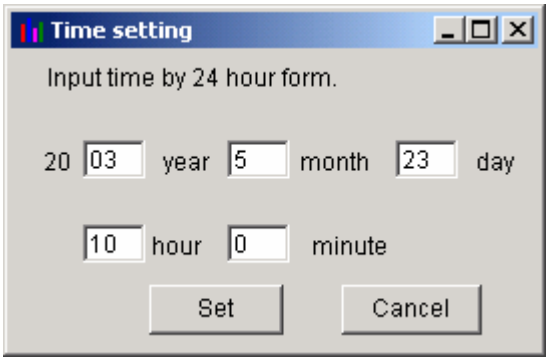
(5) The data downloaded to the paperless recorder can be stored non-volatile memory.

(6) Time setting to the paperless recorder

It is available to change time setting of the paperless recorder. Press [Time setting] button, and screen as shown below appears. Set the time that you want to change. And then press [Change] button.

Note: 1) This setting prohibit during recording or totalizing.

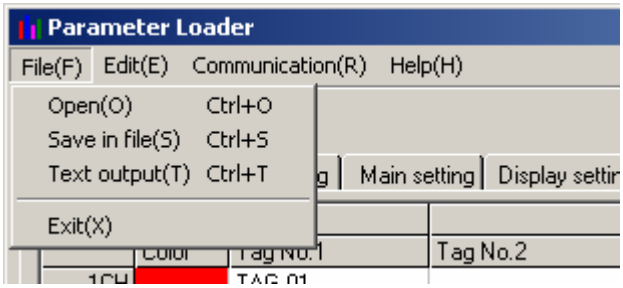
2) This setting is not necessary to be stored non-volatile memory.



Screen of time setting

(7) File menu

This menu, you can use functions as shown below.



a) [Open(O)]

Paperless recorder parameter setting files stored in your PC can be opened.

Parameter setting files stored in the paperless recorder can also be opened.

b) [Save in file(S)]

Parameters currently being set can be stored in your PC. For parameter setting file to be created, extensions vary depending on setting model.

In case of PHR: ******PHR

In case of PHW: ******PHW

Parameter setting file to be created: *****.PHR

Substitute ***** with an arbitrary name. Select a file name consisting of alphanumeric characters with 7 uppercase characters or less when a parameter setting file is to be read from a compact flash card to the paperless recorder.

Example:

OK: PARA00.PHR, P123456.PHR NG: Para00.PHR, P1234567.PHR

Note) To write the setting file in the compact flash card, which was created by the parameter loader, to a older version of the paperless recorder (V39A or older), be sure to perform the following settings:

(1) Set “0” for the password for starting/stopping the recording. If a value other than “0” is set, a password setting screen appears when the recording starts/stops.

(2) Select “Display only” for all the recording operation settings of the Math channel. If an item other than “Display only” is selected, a measured value of the Math channel is recorded when recording.

However, if you write a setting value via communication, the above problems do not occur.

If a password setting screen appears when the recording starts/stops or a measured value of the Math channel is recorded due to the reasons mentioned above, initialize the setting values and perform the settings again.

c) [Text output(T)]

Output setting value as text data.

Please refer to attached “Appendix. 1: Example of setting parameters to be printed out.”

d) [Exit(X)]

Exit this menu.

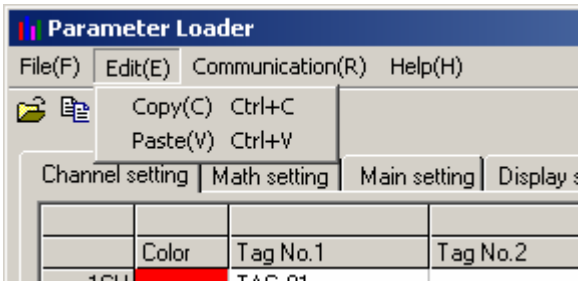
Note: 1) If you change setting value of the paperless recorder, register the setting value before exit this software.

2) If you want to use setting value on another day, it is recommended to save the setting value file of the paperless recorder before exit this software.

(8) Copy the setting value

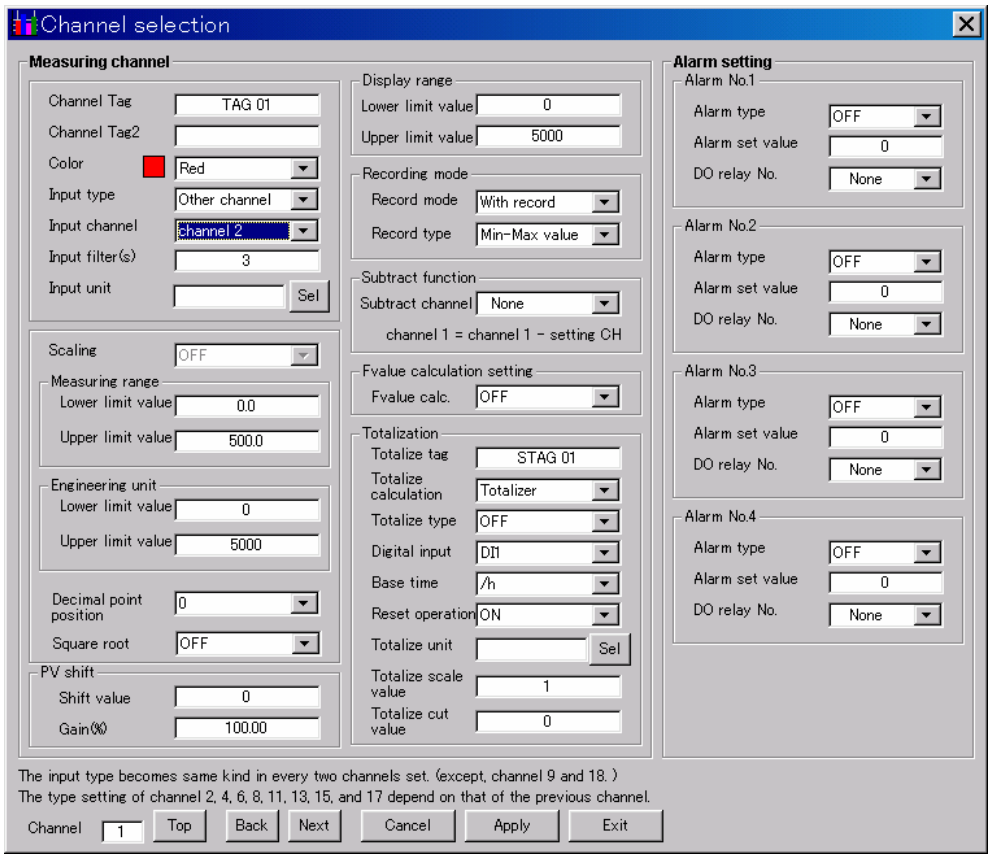
Copy the setting value such as channel setting, main setting, display setting and so on.

Click in line of original data and press [Copy]. Click in line that you want to copy, and then press [Paste].



2.3 Setting channels

Set the parameter regarding to input, calculation, alarm, display and record of each channel.
On “Table of setting channel display”, double-click the channel you want to change.



And then channel setting display appears.

* Settable number of channels depends on setting model.
In case of PHR, it is available to set till 18ch regardless of number of channels.
In case of PHW, it is available to set till 36ch regardless of number of channels.

* There are some screens to be able to display up to 7 characters as channel tag in spite of setting is available up to 8 characters. So don’t set 8 characters as channel tag.

* When you set out of the range, message as shown below appears.

Message in recording range

* Press [Apply] after changing channel setting, or your setting isn’t registered, so when you turn off and on the paperless recorder, setting value returns before you change.

* The input type becomes same kind in every two channels set.

(1) When input type of each channel is changed, setting is subjected to limitations.

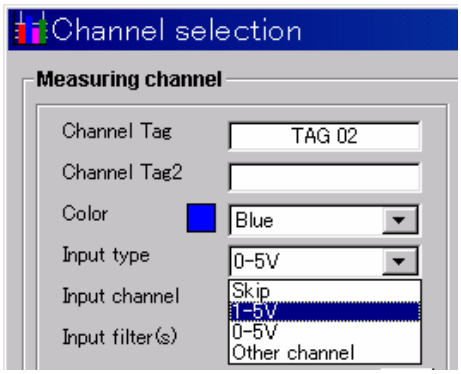
In case of PHR: The type setting of channel 2, 4, 6, 8, 11, 13, 15 and 17 is available only with the same input category of previous channel. Note that, channel 9 and 18 can select the input type regardless of other channels.

In case of PHW: The type setting of channel 2, 4, 6, 8, 11, 13, 15, 17, 20, 22, 24, 26, 29, 31, 33 and 35 is available only with the same input category of previous channel. Note that, channel 9, 18, 27 and 36 can select the input type regardless of other channels.

Input type is shown as follows.

Input category	Input type
Thermocouple, 50mV	K-Type TC, E-Type TC, J-Type TC, T-Type TC, R-Type TC, S-Type TC, B-Type TC, N-Type TC, W-Type TC, L-Type TC, U-Type TC, PN-Type TC, 50mV
Resistance bulb	Pt100Ω, JPt100Ω
500mV	500mV
5V	1 to 5Vdc, 0 to 5Vdc

For example, when channel 1 is set to 1 to 5V, channel 2 is available to set only 1-5V, 0-5V, or Skip as shown below.



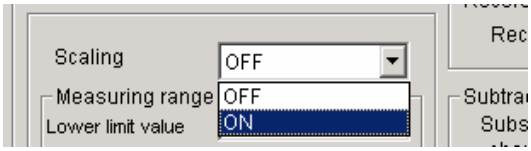
Example: Setting input type of each channel

	Input type	Input type	Explanation
Channel 1	K-Type TC	Thermocouple, 50mV	It is available to set any type of TC to each channel.
Channel 2	T-Type TC		
Channel 3	1 to 5V	5V	
Channel 4	0 to 5V		
Channel 5	Pt100	Resistance bulb	It is available to set any type of resistance bulb to each channel.
Channel 6	JPt100		
Channel 7	500mV	500mV	
Channel 8	500mV		
Channel 9	J-Type TC	Thermocouple, 50mV	It is available to set any input type to channel 9.
Channel 10	K-Type TC	Thermocouple, 50mV	The same input type is basically allocated to 2 channels.
Channel 11	50mV		
Channel 12	Skip	5V	It is available to set skip under any input type.
Channel 13	1 to 5V		
Channel 14	Pt100	Resistance bulb	
Channel 15	Skip		
Channel 16	Skip	500mV	
Channel 17	500mV		
Channel 18	50mV	Thermocouple, 50mV	It is available to set any input type to channel 18.

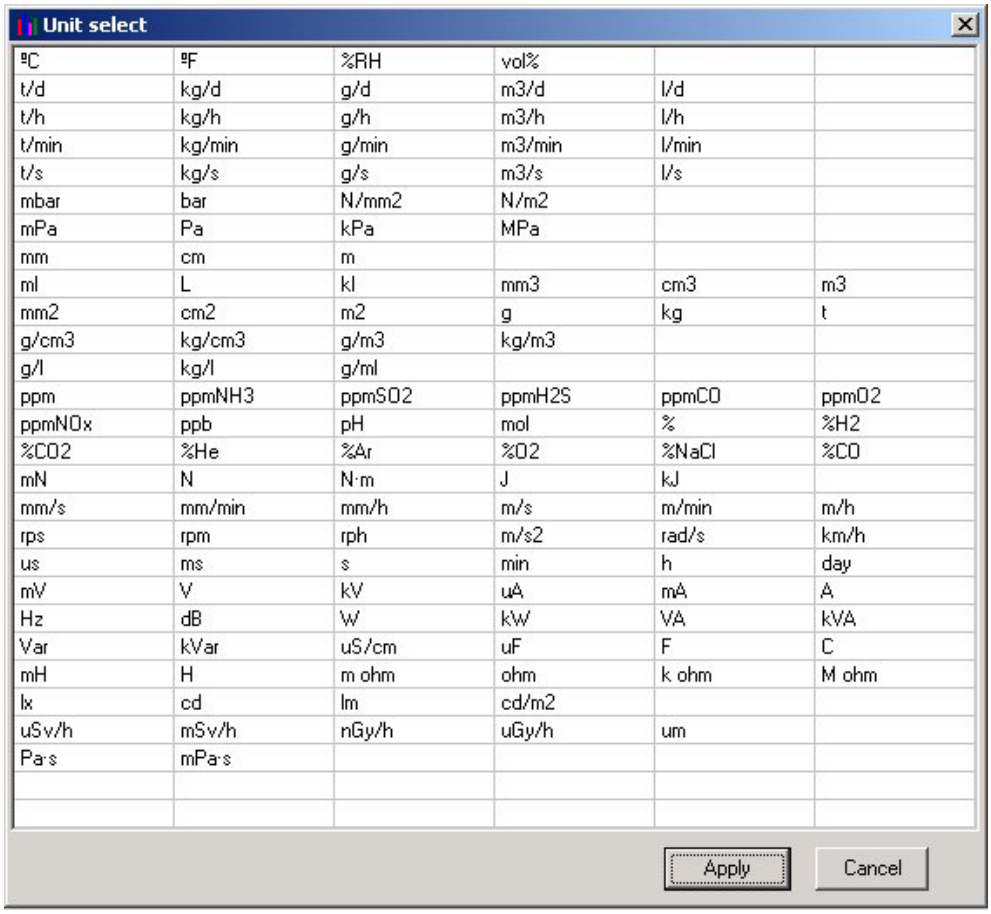
(2) When the input type of the channel is changed, the initialization of the input type of next channel might be required.
In case of PHR:
When the input type for channels 1, 3, 5, 7, 10, 12, 14 and 16 is changed, the initialization of the next channel might be required.
In case of PHW:
When the input type for channels 1, 3, 5, 7, 10, 12, 14, 16, 19, 21, 23, 25, 27, 30, 32 and 34 is changed, the initialization of the next channel might be required. When the initialization of the next channel is required, when the “Application” button is pressed, the following message screen appears.

At this screen, if you press [OK] button, the input type of next channel is initialized to the same input type of current displayed channel. In case of 50mV, the next channel becomes K-type TC. In case of resistance bulb, the next becomes Pt100Ω.

* When you set input unit, set ON the “Scaling” at first. And then press “SELECT” key.
In case of Thermocouple or Resistance bulb input, it is available to select either Celsius or Fahrenheit. And the others unit are not displayed.



The Unit Select screen appears. On the screen that is displayed, click a unit and press the [Apply] button. Note that the unit cannot be selected without pressing the [Apply] button.



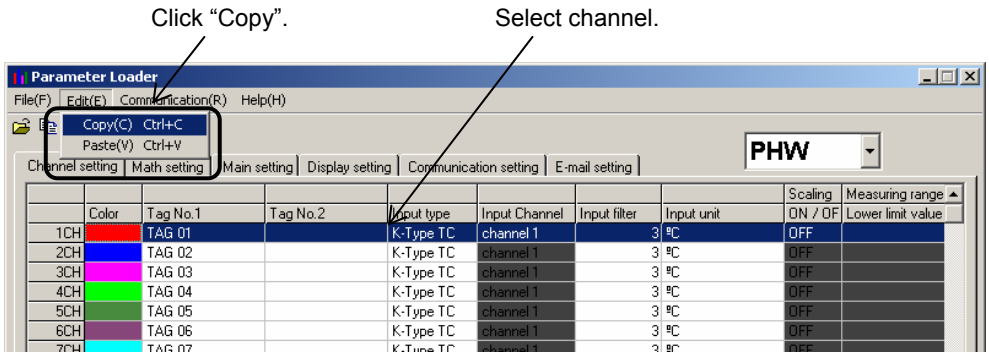
Example: At voltage input and scaling ON

2.3.1 Copying the channel set

This screen allows you to copy one or more set values from one channel to another.

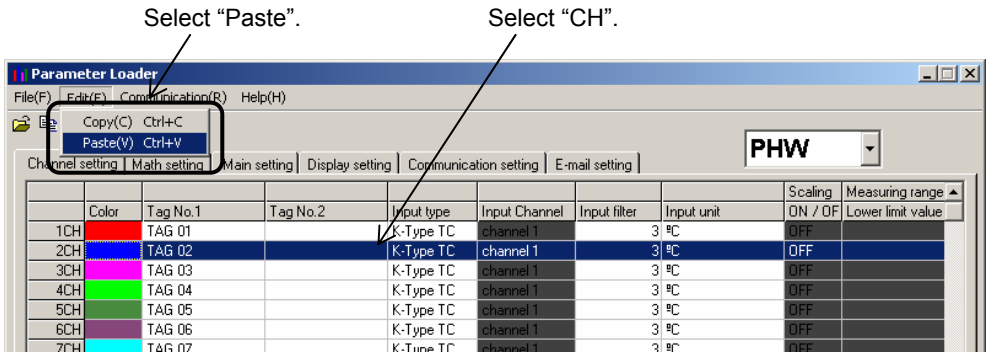
Move the cursor to CH on the Table of Setting Channel display, and click it (channel selection).

Click [Edit] → [Copy].



Move the cursor to CH where you want to paste channel settings and click it (Channel selection).

Click [Edit] → [Paste].



Next, the following message appears, prompting you to select the option.
Click [OK] when you want to copy the channel setting.
If the input type is different between current type and new one, the paperless recorder works such as below.

(1) Copying of Channel Setting in PHR

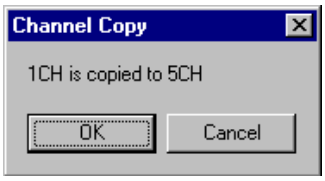
1) When the copy destination is cannels 1 to 8, and 10 to 17:
The same input types (*2) are used for their paired channels (*1).
(*1: The paired channels are 1ch and 2ch, 3ch and 4ch, 5ch and 6ch, 7ch and 8ch, 10ch and 11ch, 12ch and 13ch, 14ch and 15ch, and 16ch and 17ch.)
(*2: The K thermocouple input is used for the thermocouple, and the Pt100Ω input for the resistance thermometer.)

2) When the copy destination is 9ch and 18ch:
No channel changes other than 9ch and 18ch.

(2) Copy of Channel Setting in PHW

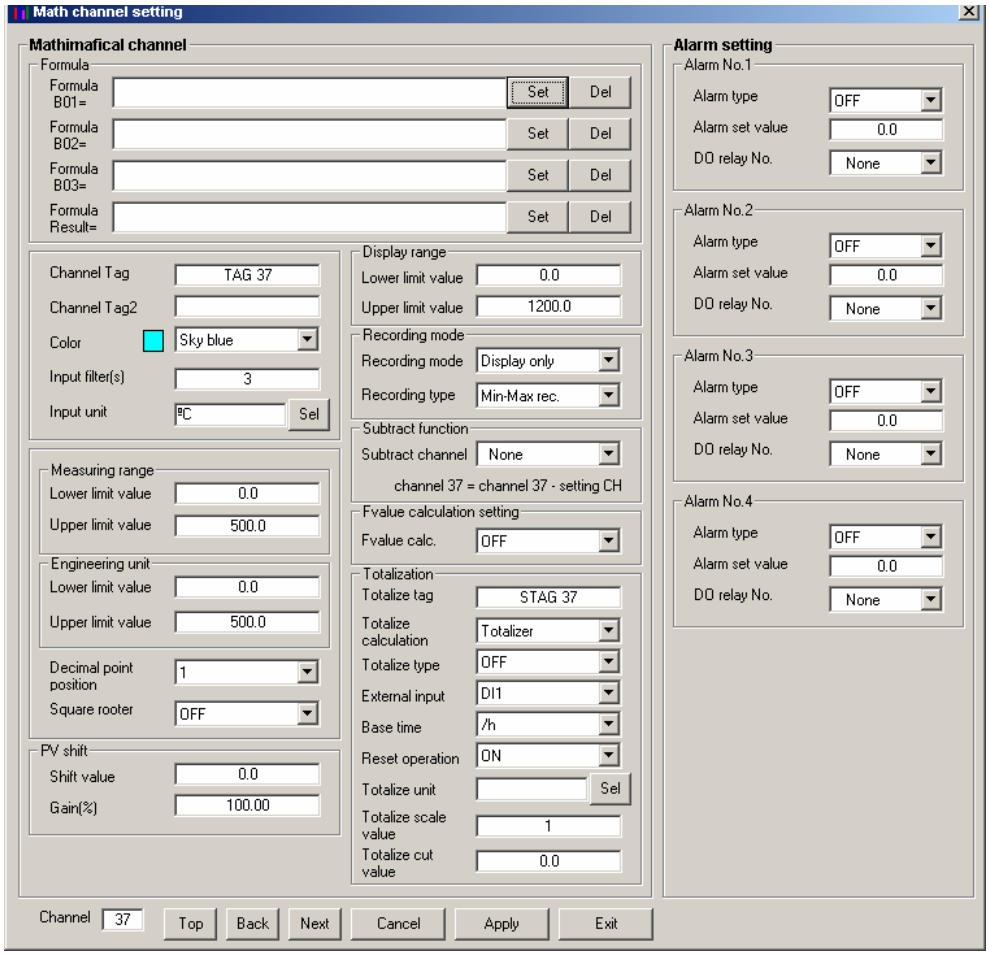
1) When the copy destination is channels 1 to 8, 10 to 17,19 to 26, and 28 to 35:
The same input types (*2) are used for their paired channels (*1).
(*1: The paired channels are 1ch and 2ch, 3ch and 4ch. 5ch and 6ch, 7ch and 8ch, 10ch and 11ch, 12ch and 13ch, 14ch and 15ch, 16ch and 17ch, 19ch and 20ch, 21ch and 22ch, 23ch and 24ch, 25ch and 26ch, 28ch and 29ch, 30ch and 31ch, 32ch and 33ch, and 34ch and 35ch.)
(*2: The K thermocouple input is used for the thermocouple, and the Pt100Ω input for the resistance thermometer.)

2) When the copy destination is 9ch, 18ch, 27ch and 36ch:
No channel changes other than 9ch, 18ch, 27ch and 36ch.



2.4 Setting math channels

Set the parameter regarding to formula, input, totalize, alarm, display and record of each math channel. On “Table of setting math channel display”, double click the channel you want to change.



And then math channel setting display appears.

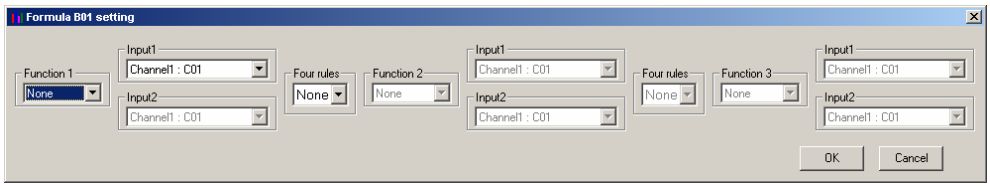
* Number of math channels differs according to model setting.
  When PHR is selected : It is available to set till 12 channels between ch19 and ch30.
  When PHW is selected : It is available to set till 36 channels between ch37 and ch72.
* There are some screen to be able to display up to 7 characters as channel tag in spite of setting is available up to 8 characters. So don’t set 8 characters as channel tag.
* When you set out of the range, message as shown below appears.

Message in recording range

* Press [Apply] after changing channel setting, or your setting isn’t registered, so when you turn off and on the recorder, setting value returns before you change.

2.4.1 Setting of arithmetic expression

Click the “Setting” button in the computing channel setting screen.



The arithmetic expression setting screen appears.

Select an arithmetic function and an input value and click “OK”.

〈 List of functions usable for arithmetic expression 〉

Display	Function	Description
No display	No arithmetic operation	No arithmetic operation is performed. The input value is used as it is.
ABS(A)	Absolute value	The absolute value of the value in the input A is found.
POW(A,B)	Exponentiation	The “input B” power of the value in the input A is calculated.
SQR(A)	Square root	The square root of the value in the input A is calculated.
LOG(A)	Log	The common logarithm in the input A is calculated.
LN(A)	LN	The natural logarithm in the input A is calculated.
EXP(A)	EXP	“e exponentiation” of the value in the input A is calculated.
RH(A,B)	Humidity	The relative humidity is calculated when the input A is dry-bulb temperature and the input B is wet-bulb temperature.
MAX(A,B)	Maximum value (between channels)	The inputs A and B are compared to find the bigger value.
MIN(A,B)	Minimum value (between channels)	The inputs A and B are compared to find the smaller value.
H-P(A)	Maximum value (time)	The maximum value in the input A during a specified time is found.
L-P(A)	Minimum value (time)	The minimum value in the input A during a specified time is found.
AVG(A)	Average value	The average value in the input A during a specified time is calculated
SUM(A,B)	Cumulative value	The cumulative value in the input (A/B) during a specified time is calculated. Cumulating calculation is performed every minute.

〈 List of inputs usable for arithmetic expression 〉

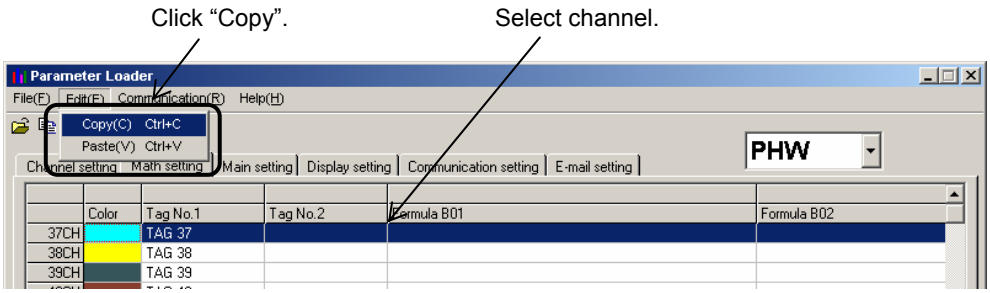
Display	Content	Display example
Channel	Channel input	C01
Cumulating calculation	Channel cumulative value	T01
DI	DI input	D01
Communication	Communication input	M01
Constant	Constant	K01
Temporary data	Result of the last expression	B01

2.4.2 Copying of math channel

A setting value is copied to other computing channel.

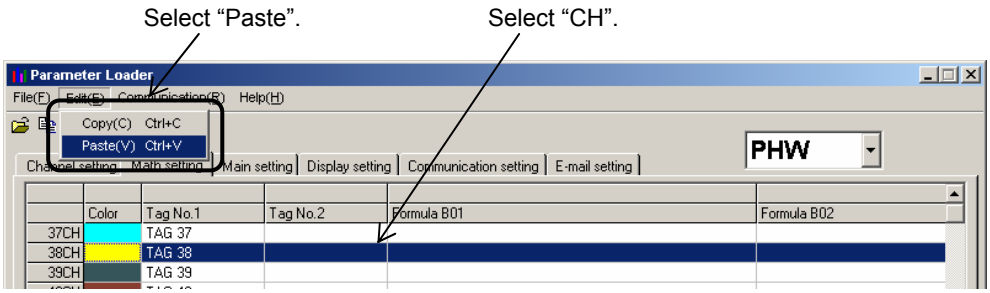
Put the cursor on the channel to be copied in the math channel setting list screen, and click it (channel selection).

Click the “Edit” menu and select “Copy”.



Put the cursor on the copy destination and click it (channel selection).

Click the “Edit” menu and select “Paste”.

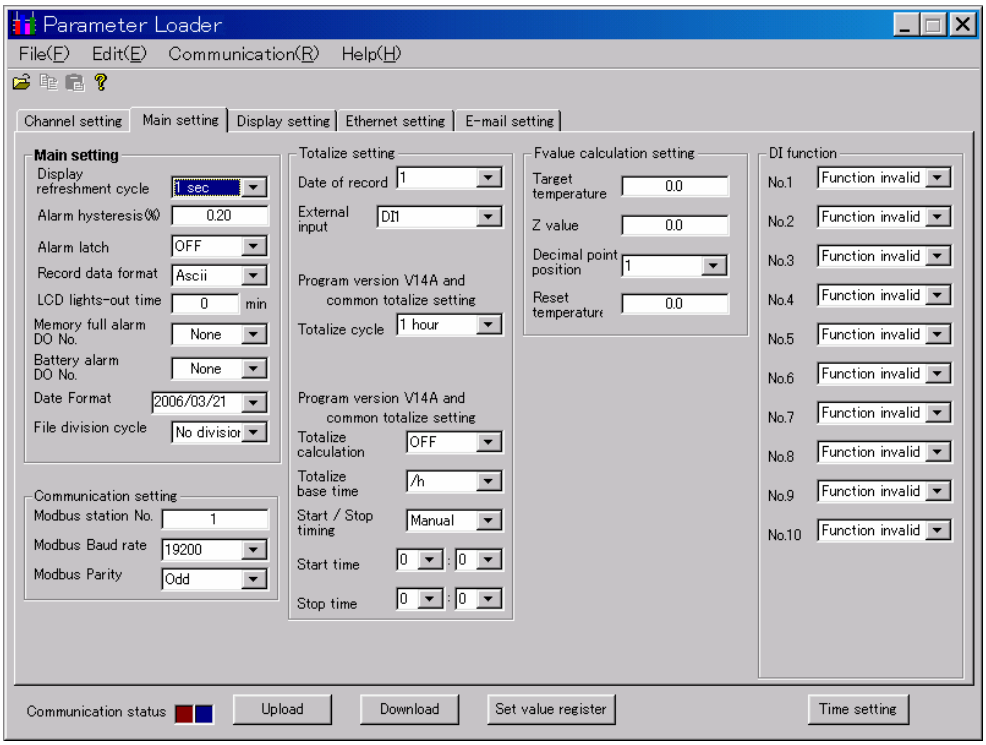


Then the confirmation message appears.

When the “OK” button is pressed, copying is performed.

2.5 Setting the main unit

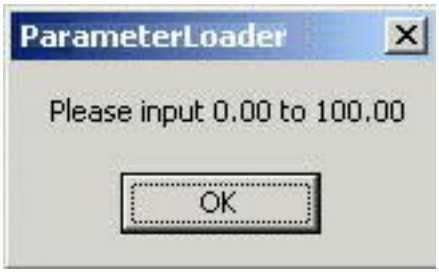
This screen allows you to set the recorder main unit.
Move the cursor to “Main setting” on the Table of Setting Channel display, and click it.



The Main unit Set screen appears.

* Settable items vary depending on setting model.
(The above screen is displayed when the setting model is PHR.)

* If values are entered over the specified range, the following message appears.



Alarm Hysteresis message

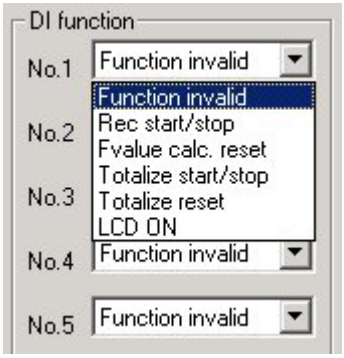
2.5.1 DI function (external control unit) setting (option)

The DI function determines whether ON/OFF input from external devices connected to external terminal is accepted or not.

DI point varies depending on setting model.

PHR: DI1 to DI10 (Max. 10 points)

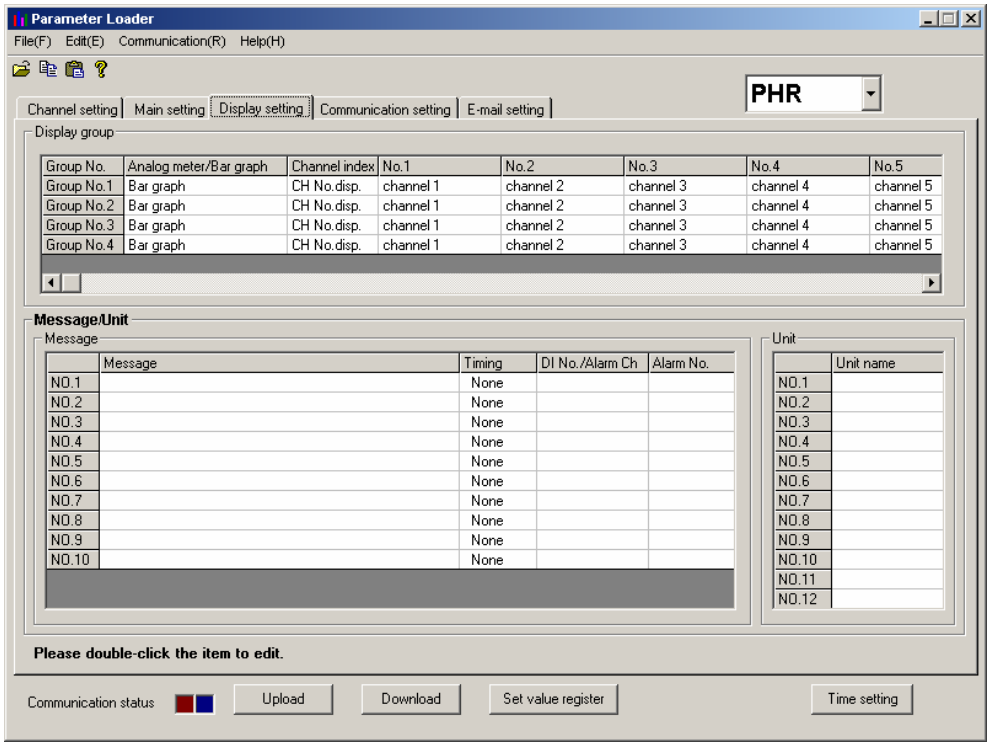
PHW: DI1 to DI16 (Max. 16 points)

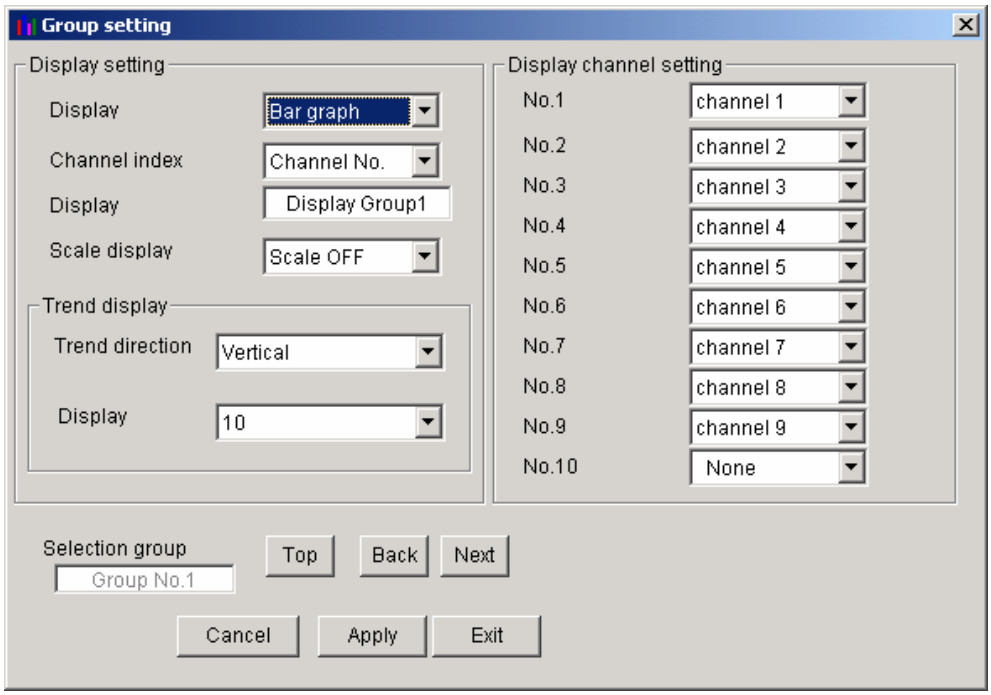


Note: Without the DI option, DI function cannot be used.

2.6 Display setting

At this screen, you can see or set regarding to screen setting such as structure of screen, trend display screen and so on. Click “Display setting” tab of Structure of setting channel display.





Setting screen appears and you can see status about screen setting.

2.6.1 Display setting

At this screen, you can set regarding to screen setting such as structure of screen, trend display screen and so on. Double click the group No. at “Display group” column on Display setting screen.

* Edit the displayed group on “Selected group No.”.
* Screen name (up to 16 characters) can be set to the recorder.
* If scale display is ON, trend screen is divided in accordance with the scale, not the setting of “Display divided”.

2.6.2 Setting channels

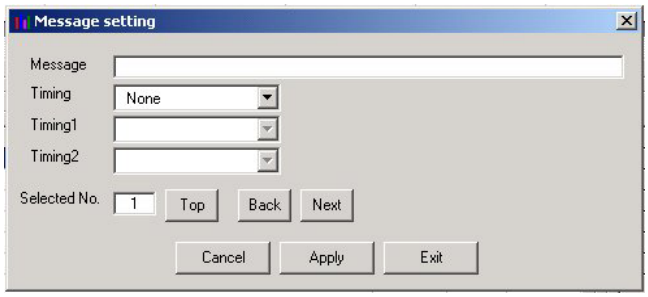
Set the structure of screen.

No.1 at this screen equals to data 1 of “display setting” of the paperless recorder, No.2 equals to data 2. Following is the same as above until No.10.

* In case of the paperless recorder is 9 inputs type, this screen displays until No.10.

2.6.3 Setting message

The screen allows you to set messages to be displayed when an event occurs.
Move the cursor to No. of the Message box on the Main Unit Set screen and double-click it.

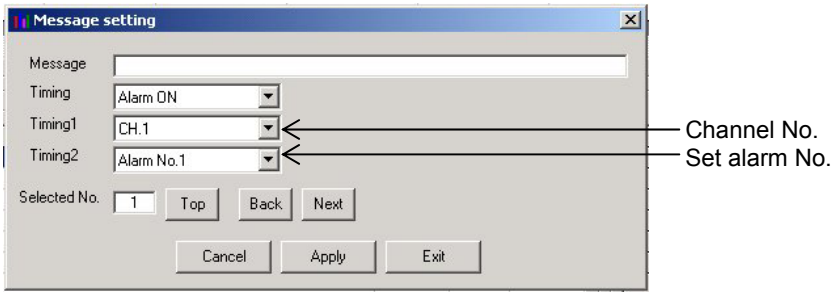


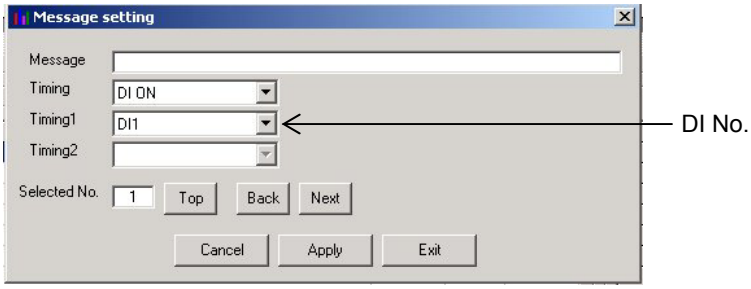
The Message Setting screen appears.

* Up to 32 characters is available for the message. The characters exceeding 32 cannnot be displayed on the recorder main unit.

* After the input of message set data, be sure to press the “Apply” button, or the message cannot be registered.

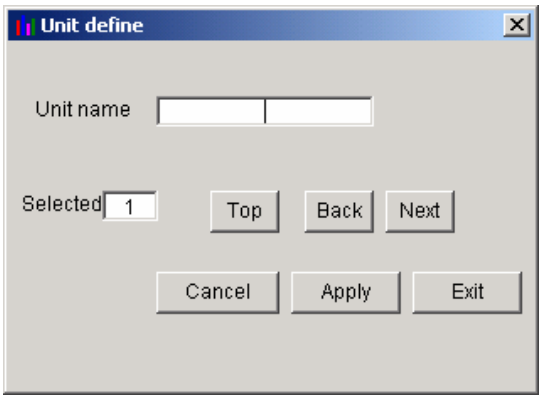
* Message timing is allocated as follows:





2.6.4 Unit coding

Units can be made in alphanumerical characters. This unit can be registered in the input unit when scaling is set to ON on the Channel Setting screen.
Move the cursor to No. of the Unit box on the Main Unit Set screen and double-click it.



The Unit Setting screen appears.

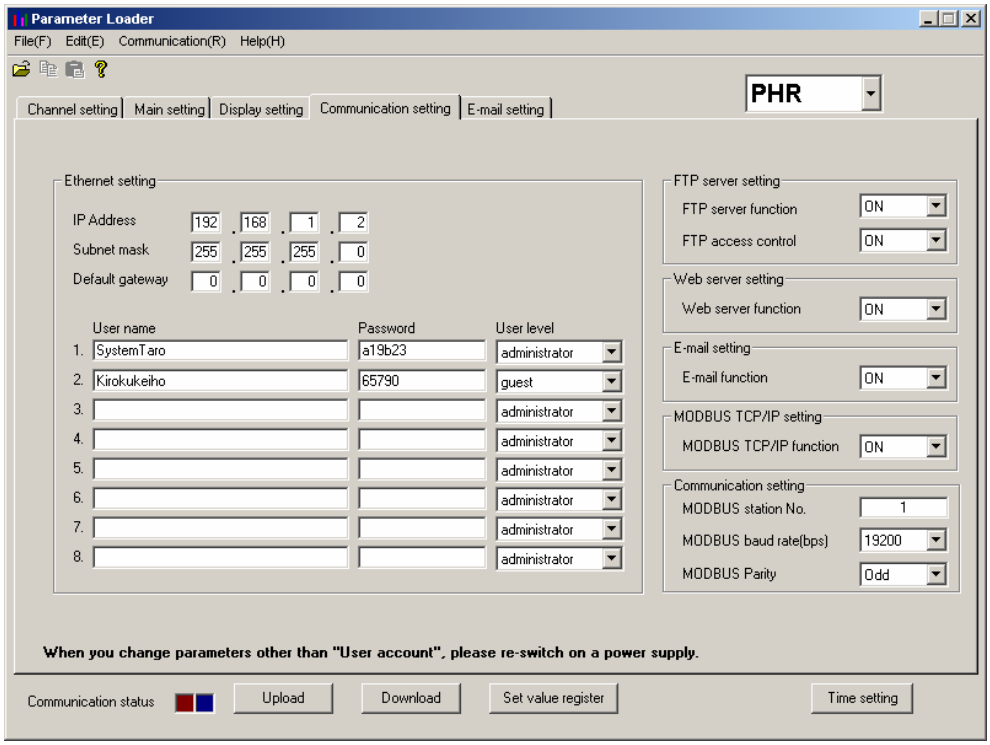
* A message (unit) consisting of up to 7 characters is available for the recording main unit.

* After the input of unit set data, be sure to press the “Apply” button, or the unit cannot be registered.

2.7 Ethernet communication setting

Settings related to Ethernet communications such as IP address, user name, operation setting of each Ethernet communication function of the paperless recorder can be checked or made.

* Ethernet communication function cannot be used unless the paperless recorder main unit is provided with Ethernet communication option.



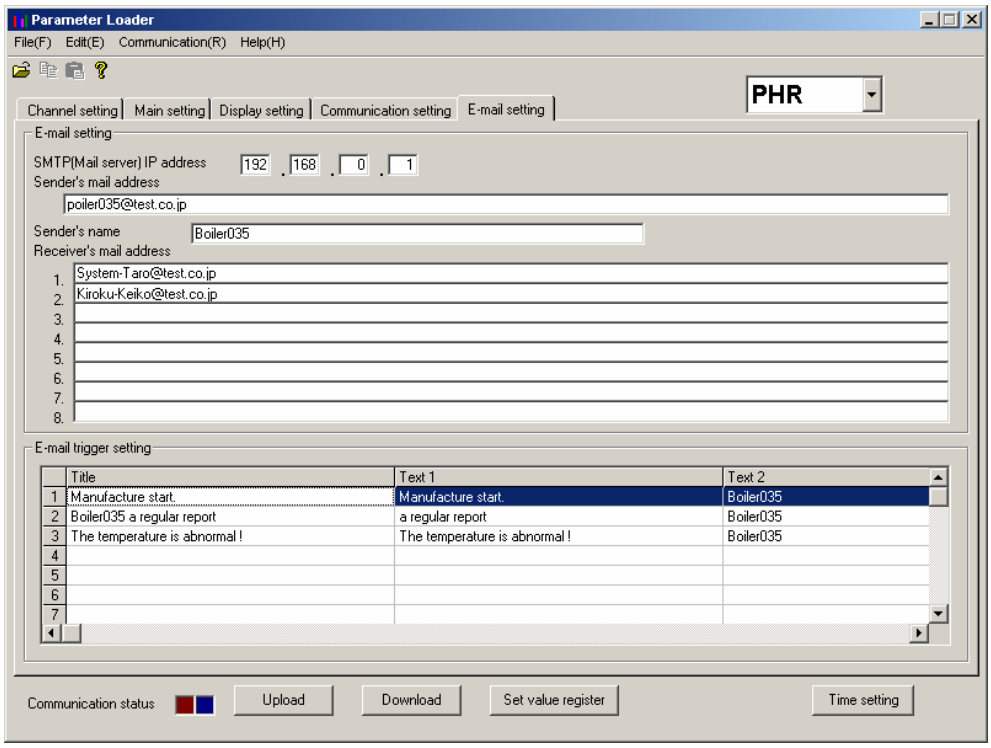
* Up to 16 characters can be entered as user name.

* Up to 8 characters can be entered as password.

2.8 E-mail communication setting

Settings related to E-mail communications such as send/receive address and send trigger can be made.

* E-mail communication function cannot be used unless the paperless recorder main unit is provided with Ethernet communication option.

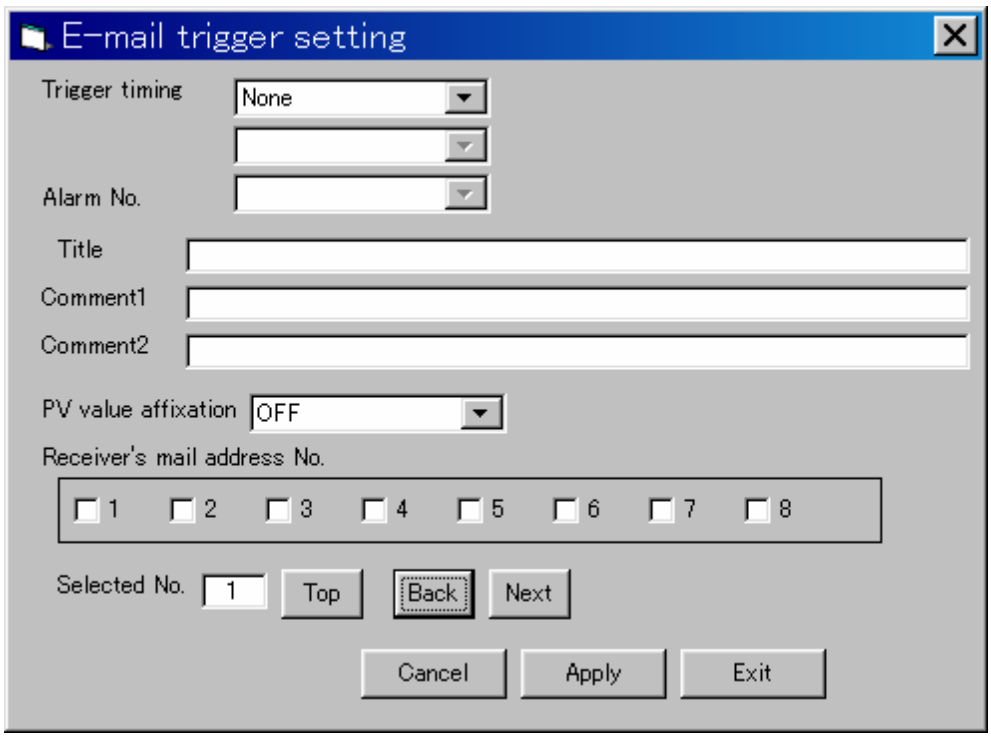


* Up to 64 characters can be entered as send/receive address.
* Up to 32 characters can be entered as sender name.

2.8.1 E-mail trigger setting

Other conditions for E-mail transmission can be selected as follows.

Move the cursor to “E-mail trigger” on the E-mail setting screen and double-click it.

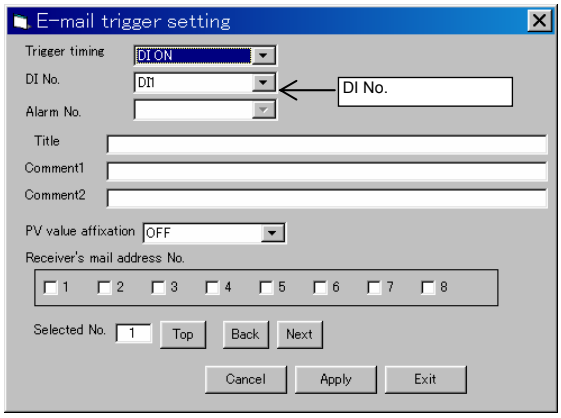


* Up to 32 characters can be entered as the title of E-mail and comments 1 and 2.

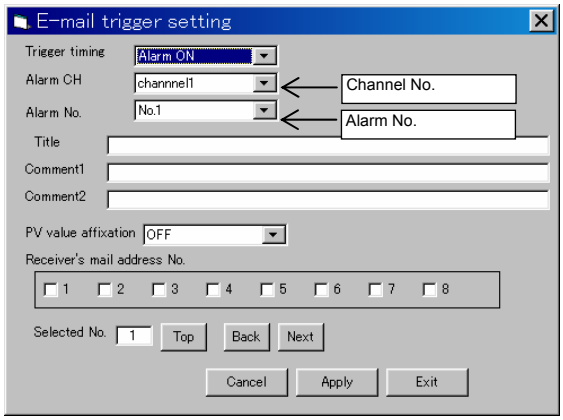
* Be sure to press the [Apply] button to confirm the E-mail trigger setting data that has been entered.

* E-mail trigger timing is allocated as shown below.

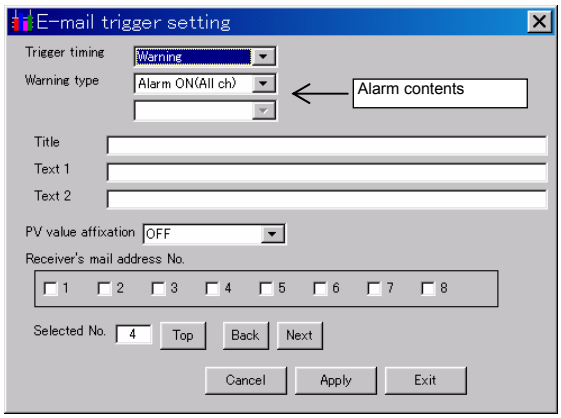
- When sending E-mail by DI operation



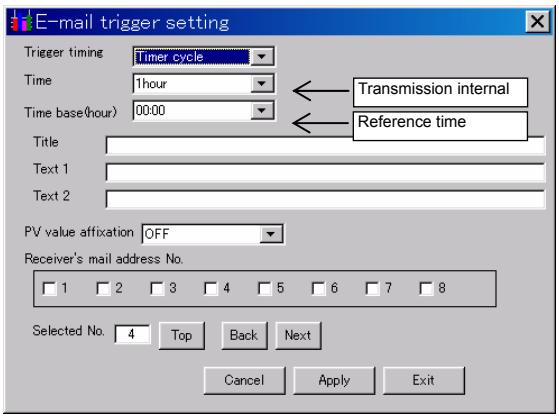
- When sending E-mail by alarm operation



- When sending E-mail by alarm operation of the main unit



- When sending E-mail at fixed intervals



APPENDIX.1 EXAMPLE OF SETTING PARAMETERS TO BE PRINTED OUT

2008/04/18 16:45:20

PILC : PHR21B14-N10EY
Ser.No.: LYT0006T
Ver. : V31A

*****Channel setting*****

	Input type	Color	Tag No.1	Tag No.2	Input unit	Other CH Input	Scaling ON/OFF	Measuring range Min	Measuring range Max	Engineering unit Min	Engineering unit Max
CH1	K-Type TC	Sky blue	Tag 01	Tag 2-01	°C	channel 1	OFF	0.0	500.0	0.0	500.0
CH2	T-Type TC	Yellowish green	Tag 02	Tag 2-02	°F	channel 1	OFF	0.0	500.0	0.0	500.0
CH3	Pt100	Violet	Tag 03	Tag 2-03	°F	channel 1	OFF	0.0	500.0	0.0	500.0
CH4	JPt100	Green	Tag 04	Tag 2-04	°C	channel 1	OFF	0.0	500.0	0.0	500.0
CH5	500mV	Deep green	Tag 05	Tag 2-05	mV	channel 1	ON	2.0	522.0	-500.0	550.0
CH6	500mV	Purple	Tag 06	Tag 2-06	mV	channel 1	OFF	0.0	500.0	0.0	500.0
CH7	Other channel	Red	Tag 07	Tag 2-07		channel 3	OFF	0.0	500.0	0.00	50.00
CH8	500mV	Yellow	Tag 08	Tag 2-08	mV	channel 1	OFF	0.0	500.0	0.0	500.0
CH9	0-5V	Indigo	Tag 09	Tag 2-09	V	channel 1	ON	0.123	5.123	1.900	5.900
CH10	B-Type TC	Dark red	Tag 10	Tag 2-10	°C	channel 1	OFF	0.0	500.0	0.0	500.0
CH11	50mV	Red	Tag 11	Tag 2-11	mV	channel 1	ON	0.00	50.00	0	5
CH12	500mV	Blue	Tag 12	Tag 2-12	mV	channel 1	ON	10.0	502.0	0.5200	0.0000
CH13	500mV	Violet	Tag 13	Tag 2-13	mV	channel 1	OFF	0.0	500.0	0.0	500.0
CH14	JPt100	Purple	Tag 14	Tag 2-14	°F	channel 1	OFF	0.0	500.0	0.0	500.0
CH15	Pt100	Deep green	Tag 15	Tag 2-15	°F	channel 1	OFF	0.0	500.0	0.0	500.0
CH16	Other channel	Purple	Tag 16	Tag 2-16		channel 1	OFF	0.0	500.0	0.000	5.000
CH17	0-5V	Pale blue	Tag 17	Tag 2-17	V	channel 1	OFF	0.000	5.000	0.000	5.000
CH18	1-5V	Blue	Tag 18	Tag 2-18	V	channel 1	ON	2.000	4.000	80	5008

	Square rooter	Log display	Input filter	PV shift	PV gain	Subtract channel	Fvalue calc.	Recording mode	Recording type	Display range Min	Display range Max
CH1	OFF	OFF	3	1.0	100.01	None	OFF	With record	Min-Max rec.	0.0	1200.0
CH2	OFF	OFF	0	0.2	100.02	None	OFF	With record	Point rec.	32.0	572.0
CH3	OFF	OFF	3	0.3	100.03	channel2	OFF	With record	Average rec.	32.0	932.0
CH4	OFF	OFF	4	400.0	140.00	channel9	ON	With record	Min-Max rec.	4.000	5.004
CH5	OFF	OFF	5	-50.0	50.00	channel4	OFF	With record	Point rec.	0.5	500.0
CH6	OFF	OFF	6	0.6	100.00	channel5	OFF	With record	Average rec.	0.6	500.6
CH7	OFF	OFF	7	0.00	100.00	None	OFF	With record	Min-Max rec.	0.00	50.00
CH8	OFF	OFF	8	0.0	100.00	None	OFF	With record	Point rec.	0.0	500.0
CH9	ON	OFF	0	9.000	109.00	channel2	ON	With record	Average rec.	0.900	5.090
CH10	OFF	OFF	3	1.0	101.00	None	OFF	Display only	Min-Max rec.	600.0	1700.0
CH11	OFF	ON	3	0.00	100.00	None	OFF	With record	Point rec.	0	5
CH12	ON	OFF	90	0.1000	100.00	channel18	ON	With record	Average rec.	5.000	0.000
CH13	OFF	OFF	3	0.0	100.00	None	OFF	With record	Min-Max rec.	0.0	500.0
CH14	OFF	OFF	10	10.0	90.00	channel18	ON	With record	Point rec.	0.000	5.000
CH15	OFF	OFF	5	0.0	100.00	channel3	OFF	With record	Average rec.	0.0	500.0
CH16	OFF	OFF	3	0.000	100.00	None	OFF	With record	Min-Max rec.	0.000	5.000
CH17	OFF	OFF	3	0.000	100.00	None	OFF	With record	Point rec.	0.000	5.000
CH18	ON	OFF	20	0	0.00	None	OFF	With record	Point rec.	1	10

*****Totalize setting*****

	Totalize Tag	Totalize calc.	Totalize Type	External input	Totalize Base time	Reset operation	Totalize Unit	Totalize Cut value	Totalize Scale value	Totalize Reset input
CH1	STAG 01	Totalizer	Monthly	DI3	/h	ON	ppmCO	10.0	2	None
CH2	STAG 02	Totalizer	OFF	Ch1 Alarm2	/min	OFF	rps	0.0	3	None
CH3	STAG 03	Totalizer	Daily	DI1	/h	ON	SEC	0.0	4	None
CH4	STAG 04	Totalizer	Daily	DI1	/h	ON	m/s2	0.010	3600	None
CH5	STAG 05	Totalizer	Daily	DI3	/min	OFF	uGy/h	50.0	9999	None
CH6	STAG 06	Totalizer	Annual	Ch6 Alarm3	/day	OFF	dB	60.0	160	None
CH7	STAG 07	Totalizer	OFF	DI1	/h	ON	%NaCl	0.00	32767	None
CH8	STAG 08	Totalizer	Daily	DI1	/h	ON		0.0	1	None
CH9	STAG 09	Totalizer	Monthly	Ch13 Alarm3	/day	ON	m/min	0.090	19	None
CH10	STAG 10	Totalizer	External	DI1	/min	ON	mol	370.0	32	None
CH11	STAG 11	Totalizer	Daily	DI1	/h	ON		0.00	100	None
CH12	STAG 12	Totalizer	OFF	DI9	/s	OFF	km/h	1.200	54	None
CH13	STAG 13	Totalizer	Daily	DI1	/h	ON		0.0	3	None
CH14	STAG 14	Totalizer	Daily	DI1	/h	ON	min	1.100	1	None
CH15	STAG 15	Totalizer	OFF	DI1	/min	OFF	mm/min	-10.0	15	None
CH16	STAG 16	Totalizer	Daily	DI1	/h	ON		0.000	65	None
CH17	STAG 17	Totalizer	OFF	DI1	/s	ON	uGy/h	0.170	17	None
CH18	STAG 18	Totalizer	Daily	DI1	/h	ON		0	18	None

*****Alarm setting*****

	Alarm No.1 Alarm type	Alarm No.1 Alarm set value	Alarm No.1 DO relay No.	Alarm No.2 Alarm type	Alarm No.2 Alarm set value	Alarm No.2 DO relay No.	Alarm No.3 Alarm type	Alarm No.3 Alarm set value	Alarm No.3 DO relay No.	Alarm No.4 Alarm type	Alarm No.4 Alarm set value	Alarm No.4 DO relay No.
CH1	H	100.0	1	H	100.0	2	H	100.0	3	H	100.0	4
CH2	H	800.0	None	OFF	0.0	None	OFF	0.0	None	L	200.0	None
CH3	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH4	H	0.400	1	OFF	0.040	2	L	0.004	5	OFF	4.000	3
CH5	H	50.0	28	L	50.0	27	H	50.0	26	L	50.0	25
CH6	H	500.0	1	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH7	OFF	0.00	None	OFF	0.00	None	OFF	0.00	None	OFF	0.00	None
CH8	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH9	L	0.900	3	H	0.900	5	L	0.900	6	H	0.900	28
CH10	OFF	600.0	5	H	600.0	None	L	600.0	22	H	600.0	None
CH11	OFF	1.00E0	None	OFF	1.00E0	None	OFF	1.00E0	None	OFF	1.00E0	None
CH12	L	0.100	4	H	0.200	6	OFF	0.300	None	OFF	0.400	27
CH13	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None	OFF	0.0	None
CH14	H	0.000	None	L	0.000	None	OFF	0.300	None	OFF	0.500	None
CH15	L	40.0	None	H	30.0	5	H	20.0	27	OFF	10.0	4
CH16	OFF	0.000	None	OFF	0.000	None	OFF	0.000	None	OFF	0.000	None
CH17	OFF	0.000	None	OFF	0.000	None	OFF	0.000	None	OFF	0.000	None
CH18	OFF	1000	None	H	1000	None	L	1000	None	H	1000	None

*****Math channel setting*****

		Formula
CH19	B01	= LN(C01)+SQR(C06)
	B02	= C01+C01+C01
	B03	= C01/C01/D10
	Result	= SUM(K14, K15)
CH20	B01	= ABS(B03)-ABS(C06)*ABS(C07)
	B02	= C01
	B03	= T16*M04-LOG(T08)
	Result	= SUM(C01, C06)-MIN(C01, C06)+POW(T11, C07)
CH21	B01	= C21
	B02	= C01
	B03	= C01
	Result	= C01
CH22	B01	= C22
	B02	= C01
	B03	= C01
	Result	= C01
CH23	B01	= C23
	B02	=
	B03	=
	Result	=
CH24	B01	= C24
	B02	=
	B03	=
	Result	=

		Formula
CH25	B01	= C25
	B02	=
	B03	=
	Result	=
CH26	B01	= C26
	B02	=
	B03	=
	Result	=
CH27	B01	= C27
	B02	=
	B03	=
	Result	=
CH28	B01	= C28
	B02	=
	B03	=
	Result	=
CH29	B01	= C29
	B02	=
	B03	=
	Result	=
CH30	B01	= C30
	B02	=
	B03	=
	Result	=

	Color	Tag No.1	Tag No.2	Input unit	Measuring range Min	Measuring range Max	Engineering unit Min	Engineering unit Max	Square rooter
CH19	Indigo	TAG19	Tag 2-19	t/d	11.9	501.9	11.9	501.9	ON
CH20	Dark red	TAG20	Tag 2-20		0.0120	0.5200	0.0112	0.5200	OFF
CH21	Red	TAG21	Tag 2-21	m/s	12.1	521.0	0	5	OFF
CH22	Blue	TAG22	Tag 2-22	ppmH2S	22.0	22.0	22.0	22.0	OFF
CH23	Violet	TAG23	Tag 2-23	%Ar	0.123	5.023	0.123	5.023	OFF
CH24	Green	TAG24	Tag 2-24	ppmCO	0.240	5.240	0.240	5.240	ON
CH25	Deep green	TAG25	Tag 2-25	m3/h	1.25	50.25	1.25	50.25	ON
CH26	Purple	TAG26	Tag 2-26	%NaCl	1.26	50.26	1.26	50.26	OFF
CH27	Sky blue	TAG27	Tag 2-27	us	0.127	5.027	0.270	5.027	ON
CH28	Yellow	TAG28	Tag 2-28	l/min	0.0280	0.5280	0.0280	0.5028	OFF
CH29	Indigo	TAG29	Tag 2-29	pH	0.290	5.029	0.129	5.029	OFF
CH30	Dark red	TAG30	Tag 2-30	rps	30.0	300.0	30.0	300.0	OFF

	Log display	Input filter	PV shift	PV gain	Subtract channel	Fvalue calc.	Recording mode	Recording type	Display range Min	Display range Max
CH19	OFF	5	101.9	100.19	None	OFF	With record	Point rec.	19.0	1019.1
CH20	OFF	10	0.0020	100.20	None	OFF	With record	Average rec.	0.0200	1.0200
CH21	ON	21	32.0	100.00	None	OFF	With record	Min-Max rec.	0	5
CH22	OFF	22	22.0	22.00	channel5	OFF	With record	Point rec.	220.0	122.0
CH23	OFF	10	0.023	100.23	channel24	OFF	With record	Point rec.	0.230	23.000
CH24	OFF	24	0.240	124.00	channel11	ON	With record	Min-Max rec.	2.400	10.240
CH25	OFF	25	2.50	25.00	channel27	OFF	With record	Point rec.	25.00	101.25
CH26	OFF	26	26.00	26.00	channel11	OFF	With record	Average rec.	26.00	101.26
CH27	OFF	27	0.270	100.27	channel5	ON	With record	Point rec.	0.270	10.270
CH28	OFF	28	0.2800	100.28	channel5	ON	With record	Point rec.	0.280	0.280
CH29	OFF	29	0.290	100.29	None	OFF	With record	Point rec.	2.900	10.290
CH30	OFF	30	30.0	130.00	channel30	OFF	With record	Min-Max rec.	30.0	1030.1

*****Totalize setting*****

	Totalize Tag	Totalize calc.	Totalize Type	External input	Totalize Base time	Reset operation	Totalize Unit	Totalize Cut value	Totalize Scale value	Totalize Reset input
CH19	STAG 19	Totalizer	Daily	DI1	/day	OFF	g/ml	1190.0	19	None
CH20	STAG 20	Totalizer	Monthly	DI6	/min	ON	%CO2	0.0020	20	None
CH21	STAG 21	Totalizer	OFF	DI1	/h	OFF	ppmNH3	21.0	210	None
CH22	STAG 22	Totalizer	Annual	DI1	/h	ON	VA	22.0	22	DI1
CH23	STAG 23	Totalizer	OFF	DI6	/min	ON		0.230	23	None
CH24	STAG 24	Totalizer	OFF	DI6	/s	ON		0.240	24	None
CH25	STAG 25	Totalizer	External	DI6	/day	ON		0.00	1	None
CH26	STAG 26	Totalizer	Daily	DI1	/s	ON	ohm	2.60	26	Ch30 Alarm4
CH27	STAG 27	Totalizer	Daily	DI1	/min	ON		0.270	27	None
CH28	STAG 28	Totalizer	Daily	DI1	/h	ON	Pa·s	0.280	28	None
CH29	STAG 29	Totalizer	Daily	DI1	/day	ON	k ohm	0.290	29	None
CH30	STAG 30	Totalizer	Daily	DI1	/s	ON	cd/m2	30.0	30	None

*****Alarm setting*****

	Alarm No.1 Alarm type	Alarm No.1 Alarm set value	Alarm No.1 DO relay No.	Alarm No.2 Alarm type	Alarm No.2 Alarm set value	Alarm No.2 DO relay No.	Alarm No.3 Alarm type	Alarm No.3 Alarm set value	Alarm No.3 DO relay No.	Alarm No.4 Alarm type	Alarm No.4 Alarm set value	Alarm No.4 DO relay No.
CH19	H	159.0	28	L	319.0	4	H	219.0	20	H	189.0	4
CH20	H	0.4200	28	H	0.3200	8	L	0.2200	23	OFF	0.1200	7
CH21	OFF	7.60E-1	None	OFF	7.60E-1	None	OFF	7.60E-1	None	OFF	7.60E-1	None
CH22	OFF	22.0	22	OFF	22.0	22	OFF	22.0	22	OFF	22.0	22
CH23	H	4.230	27	H	3.123	8	L	2.230	22	OFF	1.230	6
CH24	H	4.240	None	OFF	3.240	1	H	2.240	27	L	1.240	7
CH25	L	25.00	25	L	325.00	10	L	225.00	25	L	125.00	3
CH26	H	41.26	26	OFF	326.00	9	OFF	226.00	19	L	126.00	1
CH27	H	0.270	12	H	3.270	10	H	2.270	26	H	1.270	4
CH28	H	4.280	28	L	3.280	4	H	2.280	20	L	1.280	4
CH29	L	4.290	22	OFF	3.290	8	L	2.290	26	L	1.290	3
CH30	H	430.0	27	OFF	330.0	28	OFF	230.0	26	OFF	130.0	25

*****Main setting*****
Display refreshment cycle 1 sec Display Compression 1/1
Alarm hysteresis 1.32 (%) Alarm latch OFF
LCD lights-out time 0 min Memory full alarm DO No. 5 Battery alarm DO No. 4
Recording data format Binary File division cycle No division File overwrite OFF
Configuration password 1 CF manager password 2 REC key password 1
Trend back color White Historical back color Black

*****Fvalue calculation setting*****
Target temperature 100.0 °C Z value 200.0 °C Decimal point position 3
Reset temperature 10.0 °C

*****Totalize setting*****
Daily totalize cycle 12 hour Annual base day 31
Extrnal input DI1

Program version V14A exclusive use totalize setting
Totalize calculation OFF Totalize base time /h Totalize recording cycle 12 hour
Start/Stop timing Manual Start time-Stop time 23:06 - 22:59

*****Math timer setting*****
H-P/L-P operation 2 min AVG operation 4 min SUM operation 2 min

*****Display setting*****

	Content of screen composition									
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
Display group1	channel1	channel2	channel3	channel4	channel5	channel6	channel7	channel8	channel9	channel10
Display group2	channel11	channel12	channel13	channel14	None	None	None	None	None	None
Display group3	channel15	channel16	channel17	channel18	None	None	None	None	None	None
Display group4	channel1	channel2	channel3	channel4	None	None	None	None	None	None

	Display name	Trend direction	Display division No.	Scale display	Bar graph/ Analog meter	Color bar display selection
Display group1	1.Diplay Group1	Vertical	20	ON	Bar graph	Tag No.disp.
Display group2	2.Diplay Group2	Horizontal	13	ON	Analog meter	CH No.disp.
Display group3	3.Diplay Group3	Vertical	7	OFF	Bar graph	Unit disp.
Display group4	4.Diplay Group4	Horizontal	10	OFF	Analog meter	Tag No.disp.

*****Message setting*****

	Message	Timing1	DI NO./ Alarm Channel	Alarm NO.
No.1	Massage DI1 ON	DI ON	DI1	
No.2	Massage DI5 OFF	DI OFF	DI5	
No.3	Massage Channel18 Alarm No.1 ON	Alarm ON	CH.18	Alarm No.1
No.4	Massage Channel18 Alarm No.1 OFF	Alarm OFF	CH.18	Alarm No.1
No.5	Massage DI4 ON	DI ON	DI4	
No.6	Massage Channel18 Alarm No.3 OFF	Alarm OFF	CH.18	Alarm No.3
No.7	Massage Channel18 Alarm No.2 ON	Alarm ON	CH.18	Alarm No.2
No.8	Massage DI4 OFF	DI OFF	DI4	
No.9	Massage Channel05 Alarm No.4 OFF	Alarm OFF	CH.5	Alarm No.4
No.10	Massage Channel04 Alarm No.2 ON	Alarm ON	CH.4	Alarm No.2

*****Original Unit definition*****

	No.1	No.2	No.3	No.4	No.5	No.6
Unit			mPa	SEC		
	No.7	No.8	No.9	No.10	No.11	No.12
Unit						

*****DI function setting*****
DI-1 Rec start/Rec stop DI-6 Rec start/Rec stop
DI-2 Fvalue calc. reset DI-7 Rec start/Rec stop
DI-3 Totalize start/stop DI-8 Fvalue calc. reset
DI-4 Function invalid DI-9 Totalize start/stop
DI-5 Rec start/Rec stop DI-10 Totalize reset

*****Constant setting*****

Constant1	1	Constant11	0.002
Constant2	2	Constant12	0.0003
Constant3	3.0	Constant13	0
Constant4	4.00	Constant14	100
Constant5	5.000	Constant15	120
Constant6	60	Constant16	0
Constant7	700	Constant17	0
Constant8	8000	Constant18	0
Constant9	0.9	Constant19	99.3
Constant10	0.01	Constant20	10

*****Ethernet setting*****
Ethernet setting
IP Address 192 . 168 . 0 . 2
Subnet mask 255 . 255 . 255 . 0
Default gateway 0 . 0 . 0 . 0

FTP server setting
FTP server function ON
Access control ON

Web Server setting
Web server function ON

E-mail setting
E-mail function ON

MODBUS TCP/IP setting
MODBUS TCP/IP function ON

Communication setting
Modbus station No. 1 Modbus baud rate 19200 bps Modbus parity Odd

User account setting

	User name	Password	User level
1.	SystemTaro	a19b23	administrator
2.	KirokuKeiko	65790	guest
3.			administrator
4.			administrator
5.			administrator
6.			administrator
7.			administrator
8.			administrator

*****E-mail setting*****
SMTP(Mail server) IP address 192 . 198 . 0 . 1
Sender's mail address boiler035@test.co.jp
Sender's name Boiler035

Receiver's mail address
1. System-Taro@test.co.jp
2. Kiroku-Keiko@test.co.jp
3.
4.
5.
6.
7.
8.

E-mail trigger setting

	Title	Text 1	Text 2
No.1	Product1 manufacturing beginning	Product1 manufacturing beginning	Boiler035
No.2	Boiler035 report at regular time	Report at regular time	Boiler035
No.3	The temperature is abnormal!	The temperature is abnormal.	Boiler035
No.4			
No.5			
No.6			
No.7			
No.8			
No.9			
No.10			

	Trigger timming	Timming1	Timming2	PV Value	No1	No2	No3	No4	No5	No6	No7	No8
No.1	DI ON	DI2	-	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
No.2	Timer cycle	12hour	01:00	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
No.3	Alarm ON	channel1	No.4	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
No.4	None	-	-	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
No.5	None	-	-	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
No.6	None	-	-	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
No.7	None	-	-	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
No.8	None	-	-	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
No.9	None	-	-	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
No.10	None	-	-	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Fuji Electric Co., Ltd.

International Sales Div
Sales Group

Gate City Ohsaki, East Tower, 11-2, Osaki 1-chome,
Shinagawa-ku, Tokyo 141-0032, Japan
http://www.fujielectric.com
Phone: 81-3-5435-7280, 7281 Fax: 81-3-5435-7425
http://www.fujielectric.com/products/instruments/