Instruction Manual

PARAMETER LOADER FOR DIGITAL CONTROLLER

TYPE: PXH

Fuji Electric Co., Ltd.

INP-TN514208c-E

PREFACE

Thank you for purchasing the Fuji Digital Controller (Type: PXH).
Read this instruction manual carefully to ensure correct installation and operation.
In addition, please keep this instruction manual within easy reach of the actual person using this instrument.

(Note) Windows 2000/XP/7 are registered trademarks of Microsoft Corporation.

Notice

- The contents of this document may be changed in the future without prior notice.
- We paid the utmost care for the accuracy of the contents. However, we are not liable for direct and indirect damages resulting from incorrect descriptions, omission of information, and use of information in this document.

Issued in December, 2005
Rev. 1st edition April, 2011
Rev. 2nd edition February, 2012

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1. Copyright of software

The copyright of the software belongs to our company. It is prohibited to copy or distribute it without our consent.
The software is provided as communication software sample (free of charge). It is not intended for guaranteeing the operation of the software.

2. Overview

This software is an auxiliary tool for parameter setting and tuning for the digital controller (PXH).
Setting conditions can be edited and saved by this software.
Upon parameter setting, editing and saving on PC, settings can be copied to more than one PXH. As an auxiliary tool for PXH, PV, SV and MV trend indication and tuning parameter (P, I, D) setting are available.

3. Recommended environment

Applicable PC	: PC/AT compatible PC
Applicable OS	: Operation was checked by Windows 2000 (Japanese/English version) and Windows XP (Japanese/English version) Windows 7 (Home Premium, Professional) (Japanese/English version)
RAM	: 128 M bytes or more
Free space of hard disk	: 100 M bytes or more
CD-ROM drive	: Yes
Display resolution	: 1024 768 dots or more

* The operation is checked with DELL INSPIRON 3800G 750GT (Laptop PC) by us.

4. Install and uninstall method

Install

Inserting the CD-ROM into the drive automatically displays a top page. Proceed to operation according to indications. If the top page does not start up automatically, execute ¥english¥loader¥setup.exe at [Run] out of start menus.

Uninstall

For the start menu of Windows 2000 or Windows XP or Windows 7, select [Settings (S)] ⟶ [Control Panel (C)] ⟶ [Add/Remove Applications (programs)] for executing uninstall.

5. Connection with PXH

(1) Connection by RS-232C

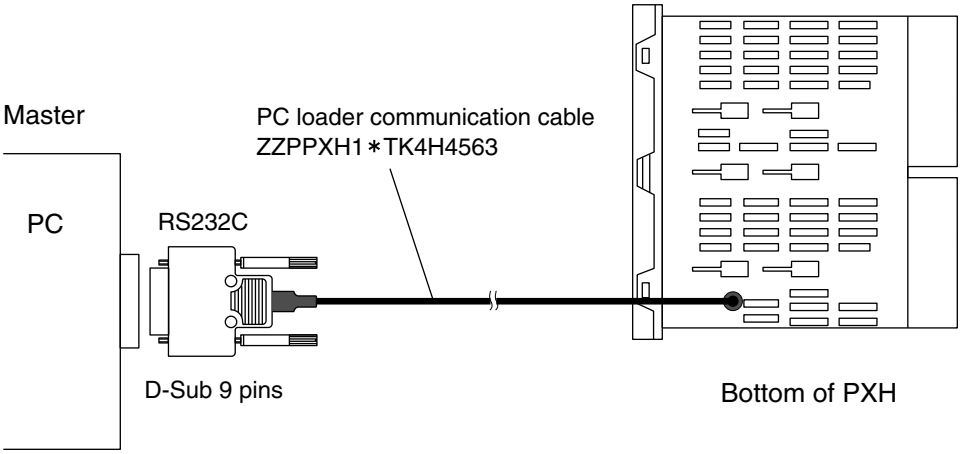

Fig. 5-1 Connection of PC and PXH (RS-232C)

Prepare a loader cable (option). By the loader cable, connect RS-232C port (D-sub 9 pins) of PC and loader interface port of PXH.

Loader cable (option) ... Type: ZZPPXH1*TK4H4563

(2) Connection by RS-485

Prepare RS-232C/RS-485 communication converter. According to the converter's instructions, carry out a connection as illustrated below (Fig. 5-2).

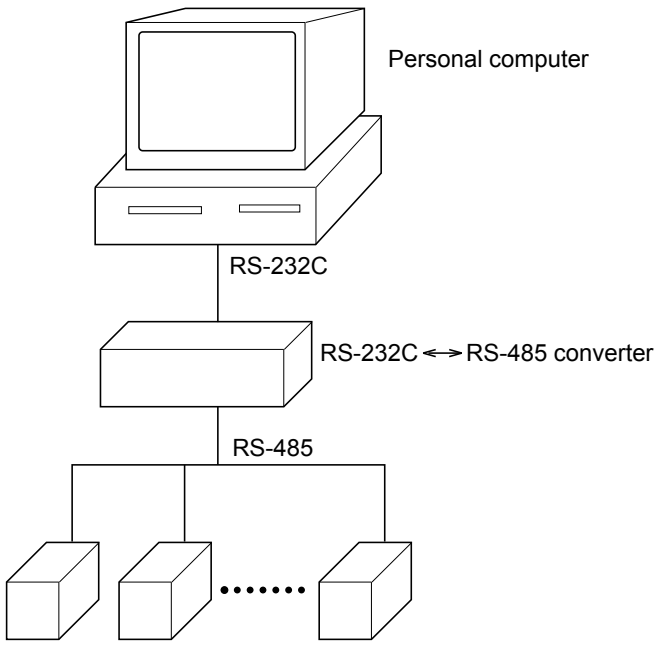

Fig. 5-2 Connection of PC and PXH (RS-485)

Recommended communication converter	
RA Systems make RC-77 (isolated)	http://www.ras.co.jp
Omron make K3SC-10 (isolated)	http://www.omron.co.jp

6. Starting window

Activating [PXH Loader] out of start menus displays the Work selection Window (Fig. 6-1).
Work selection includes:

(1) New
(2) File open
(3) Upload from PXH

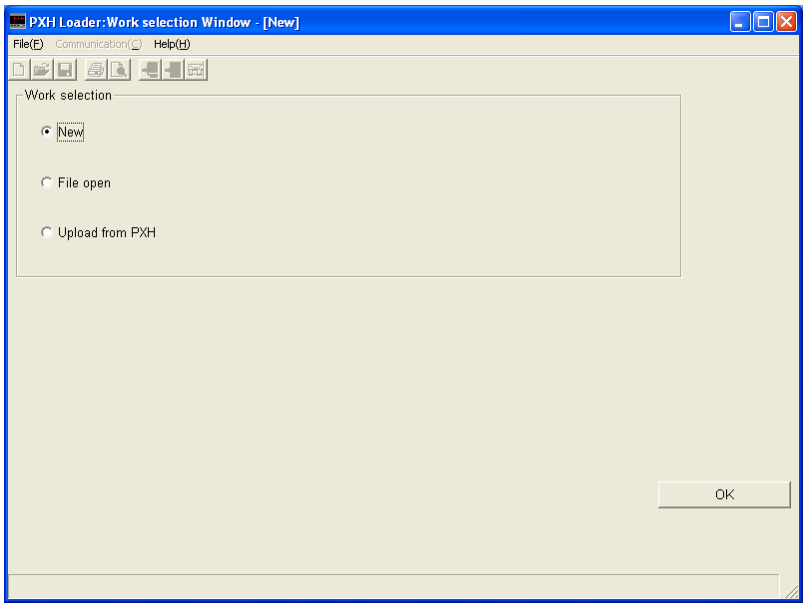

Fig. 6-1 Work selection Window

6.1 New

Newly generate parameter setting for digital indicating controller (PXH) as follows.

(1) From Work selection Window, select [New], and click on [OK] button to display the Template selection Window on Fig. 6-2.

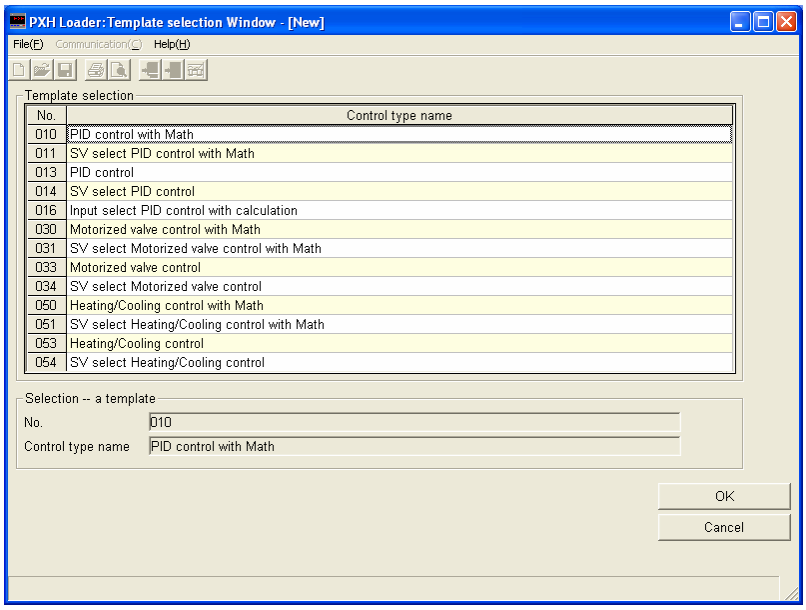

Fig. 6-2 Template selection Window

(2) Click on a desired control type name out of templates of Template selection. The selected template will appear in the lower of the window. Clicking on [OK] button enters the template to use, and displays [Ch. 8 (Input/output definition) Setting Window] Fig. 6-3).

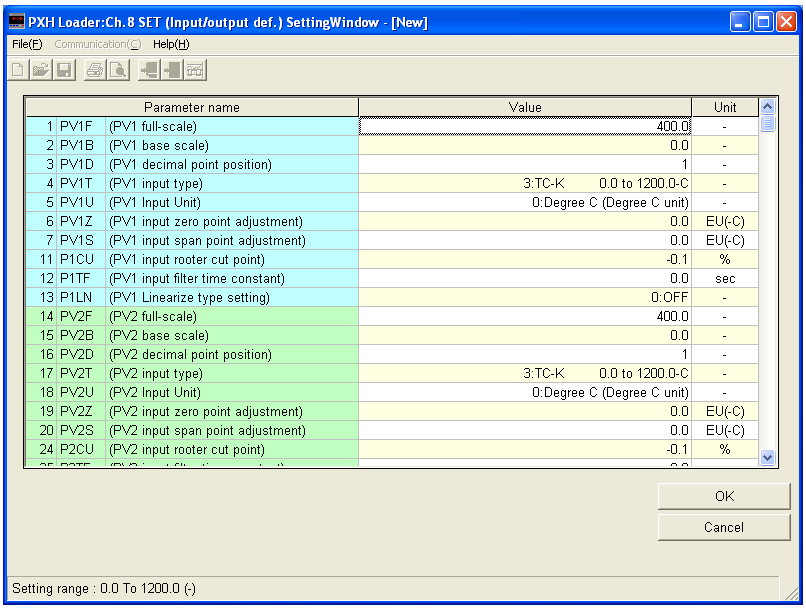

Fig. 6-3 Ch. 8 (Input/output definition) Setting Window

(3) Set the input/output definition as follows.
Upon double clicking on [Value] in Ch. 8 (Input/output definition), you can change the value by direct input or by selection out of pull-down menus.

(4) Clicking on [OK] button displays the Menu Window (Fig. 7-1).

6.2 File open

Download existing parameter settings as follows.

(1) From Work selection Window, select [File open], and click on [OK] (Fig. 6-4).

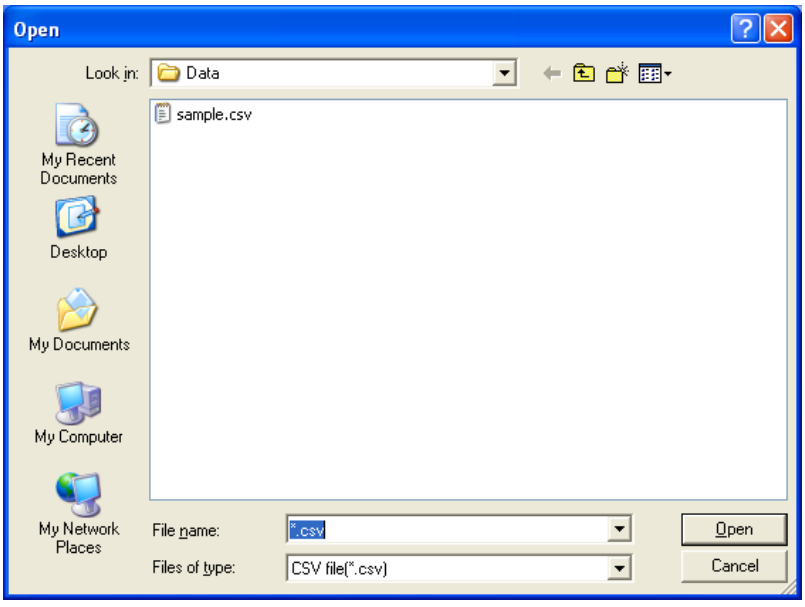

Fig. 6-4 File selection

(2) Select an existing setting file, and click on [Open (O)].

(3) Operating according to messages downloads parameters saved in the file into the loader, and displays the Menu Window (Fig. 7-1).

6.3 Upload from PXH

You can change and save a setting uploaded from PXH.

(1) From the Work selection Window, select [Upload from PXH], and click on [OK] button.

(2) Select the Communication condition setting Dialog (Fig. 6-5), and click on [Execution] button.
Note: If RS232C loader port is used, set the station No. to "1."

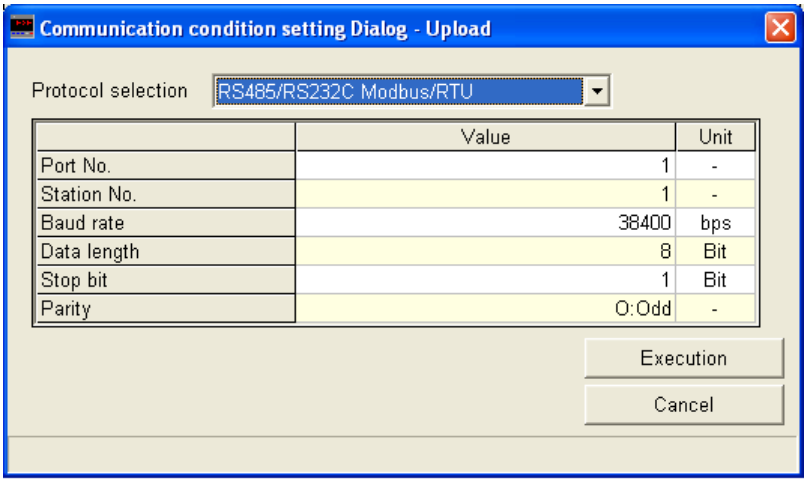

Fig. 6-5 Communication condition setting

(3) Operating according to messages uploads PXH parameters, and displays the Menu Window (Fig. 7-1).

7. Menu Window

Menu Window (Fig. 7-1) has functions given below.

1) Set and change parameters of each Ch.
2) Save parameter settings
3) Read parameter settings into file
4) Upload parameters (from PXH to PC)
5) Download parameters (from PC to PXH)
6) Jump to Tuning Dialog
7) Preview parameter list
8) Print parameter list
9) Store print preview in CSV format

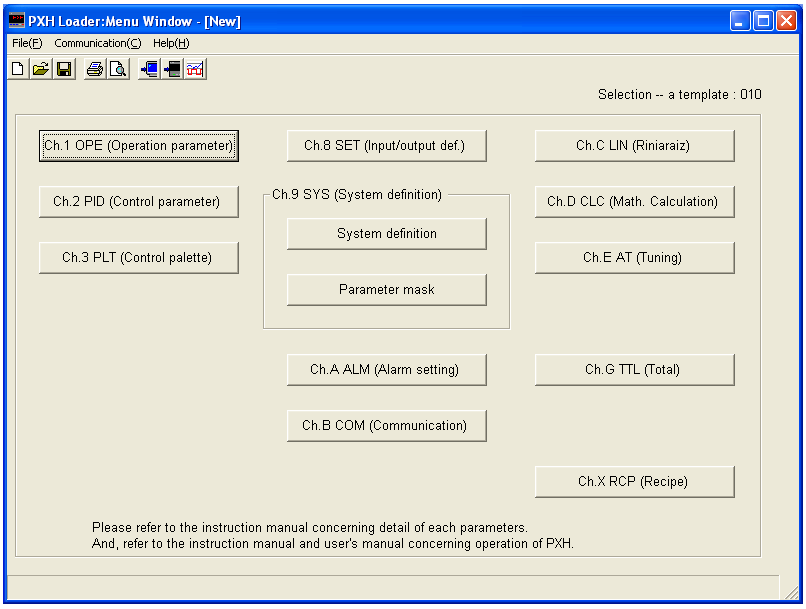

Fig. 7-1 Menu Window

7.1 Parameter setting

Parameters of each channel of PXH are set and changed.

Example 1: Setting parameters of Ch. 2 (Control parameters)

Clicking on [Ch. 2 (Control parameters)] button in the Menu Window (Fig. 7-1) displays

Ch. 2 Control parameter Setting Dialog below.

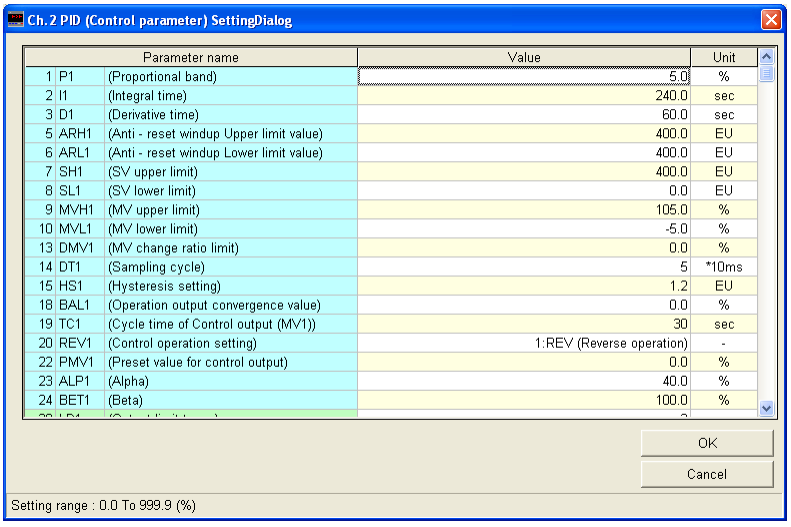

Fig. 7-2 Ch. 2 (Control parameter) Setting Dialog

Upon double clicking on [Value] in the Setting Dialog, you can change the value by direct input or by selection out of pull-down menus.

Example 2: Setting parameters of Ch. 9 (Parameter mask)

Clicking on [Ch. 9 (Parameter mask)] button in the Menu Window (Fig. 7-1) displays Ch. 9 (Parameter mask) list shown below.

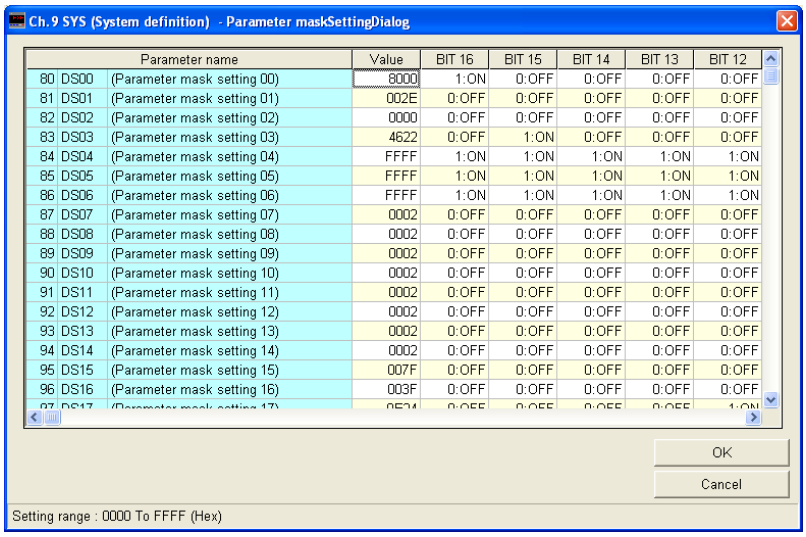

Fig. 7-3 Ch. 9 (Parameter mask) Setting Dialog

Double-click on [Value] in the list window, and you can set or change the values. Double-click on [BIT1] to [BIT16], and you can select on the pull-down menu that appears whether the parameter should be displayed or masked.

Notes)

For parameter masking, refer to “User’s Manual.”

For some templates, the masking cannot be changed. Inputting unsettable value into [Value] automatically corrects the value.

Example 3: Setting parameters of Ch. X (recipe)

Click on [Ch. X (recipe)] in the menu screen (Fig. 7-1), and the following Ch. X (recipe) list window appears.

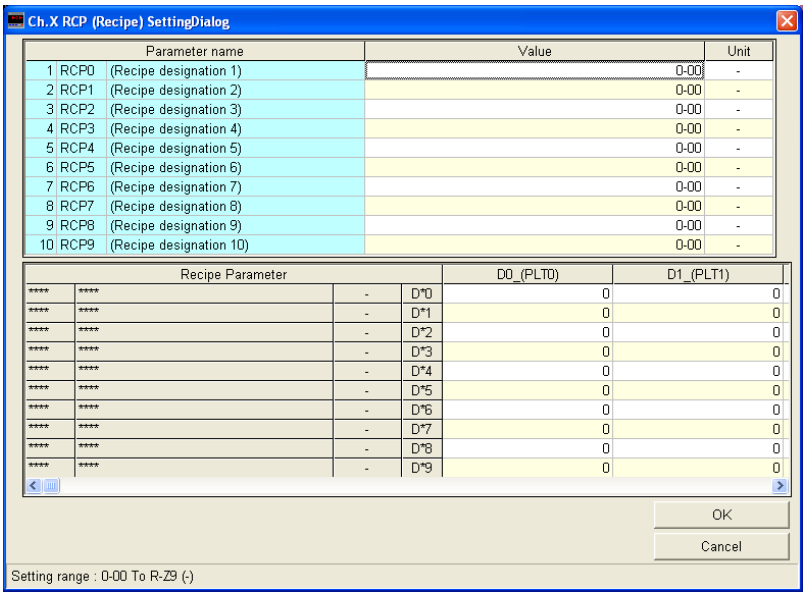

Fig. 7-4 Ch. X (recipe) setting window

Double-click on [Value] at the top of the list window, and you can set or change the values. Enter the value displayed, without "-" (if "201" is entered, "2-01" is displayed).

When recipe allocation is made, a recipe parameter is displayed at the bottom of the window, allowing you to set data for palette selection [D0_(PLT0) to D7_(PLT7)].

Note)

Do not set parameters whose recipe parameter is not displayed for RCP0 to RCP9.

Note that when using the recipe function, if one from RCP0 to RCP9 is newly allocated, the PXH default parameters are automatically inserted into all the data for palette selection.

Do not set PAS3 (Ch. 9-03) for RCP0 to RCP9. Otherwise loader communication between PC and PXH is disabled.

7.2 Menus

(1) File (F)

New (N)

Creates a new setting file.

Open (O)

Opens an existing setting file.

Save (S)

Saves a value superseding last one into file.

Save As (A)

Saves a value into file.

Print Preview (V)

Indicates relevant page as it appears when printed.

Print (P)

Prints a value.

Exit (X)

Exits “PXH Loader.”

(2) Communication (C)

Upload (U)

Uploads a value of the controller.

Download (D)

Downloads a value of the controller.

Tuning (T)

While indicating PV/SV/MV with trends, changes SV value and PID parameters.

(3) Help (H)

Version information (A)

Displays version information.

*** The same operations as above menus are available by buttons on toolbar.**

8. How to upload parameters

Parameters can be uploaded (from PXH to PC) by any of 2 ways below.

(1) On the Work selection Window (Fig. 6-1), select [Upload from PXH], and click on [OK] button. Making sure of contents on the Communication condition setting Dialog, click on [Execution] button. After parameter settings are uploaded, the Menu Window appears.

(2) On the Menu Window (Fig. 7-1), select menu [Communication (C)]−[Upload (U)]. Making sure of contents on the Communication condition setting Dialog, click on [Execution] button. After parameter settings are uploaded, the Menu Window appears.

Note: A parameter setting that is under processing will be destroyed.

9. How to download parameters

Parameters can be downloaded (from PC to PXH) in the following procedure.

(1) Set a parameter to download by any of 3 methods below.

Set a parameter by [New] in the Work selection Window (Fig. 6-1).

Upload a parameter setting saved in file by [File open] in the Work selection Window (Fig. 6-1).

Upload a parameter from PXH via communication, and change the parameter setting.

(2) On the Menu Window (Fig. 7-1), select menu [Communication (C)]-[Download (D)] to set the Communication condition setting Dialog (Fig. 9-1), and click on [Execution] button.

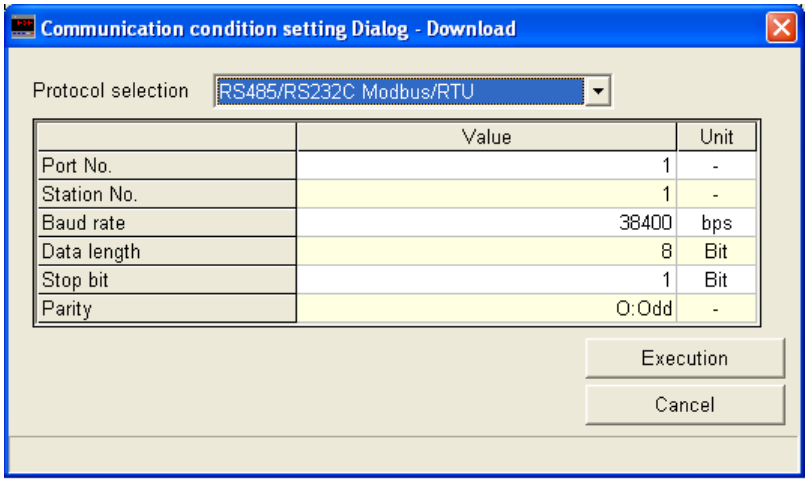

Fig. 9-1 Communication condition setting Dialog

After the end of downloading according to messages, the Menu Window (Fig. 7-1) appears.

10. How to save parameter settings into file

Select [File (F)] ⟶ [Save (S)/Save As (A)] on Menu Window (Fig. 7-1), parameter settings can be saved in file.

11. Tuning

While checking the control statuses on trend graphs of PV, SV and MV, P.I.D control parameters can manually be adjusted. SV and PID parameter settings can be changed while displaying PV (process value), SV (set value) and MV (manipulating value) on a currently designated Palet.
From this window, auto tuning (start, stop) operations are also available.

On the Menu Window (Fig. 7-1), select menu [Communication (C)] ⟶ [Tuning (T)] to set the Communication condition setting Dialog (Fig. 11-1), and click on [Execution] button.

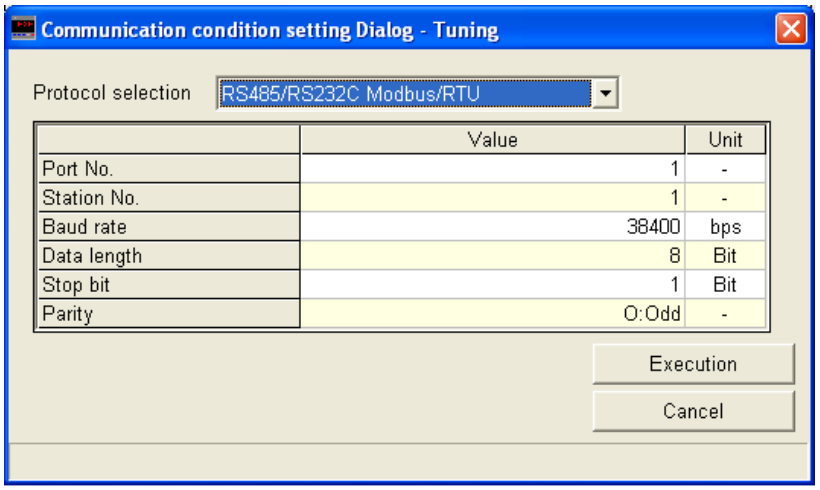

Fig. 11-1 Communication condition setting Dialog

After operations according to messages, the Tuning Dialog (Fig. 11-2) appears.

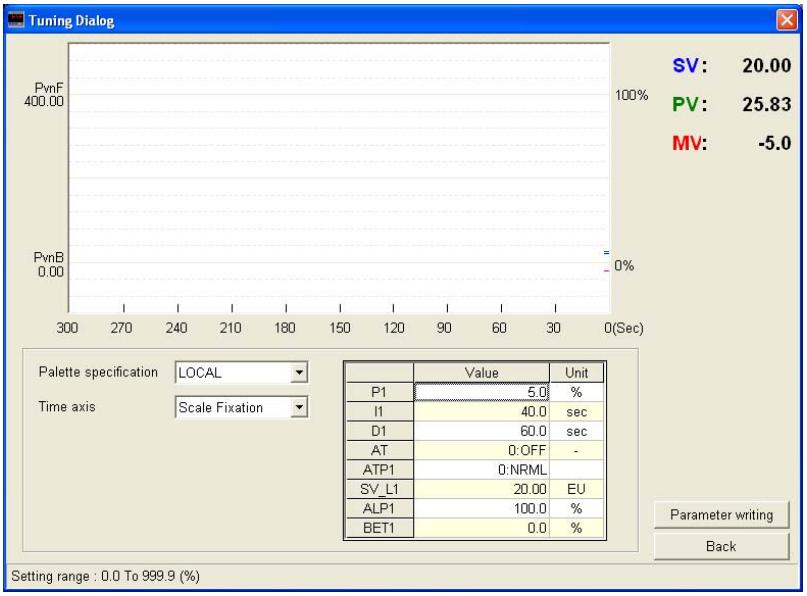

Fig. 11-2 Tuning Dialog

The graph field displays trend graphs for PV, SV and MV.
The scale of the graph field is automatically set. Either “Scale fixation” mode or “Double” mode can be selected for time axis.

Scale fixation mode: Displays the time axis (0 to 300 sec.) After the maximum value is reached, the data is forwarded in order.

Double mode: When displayed data reaches the left end, display is continued with the time axis doubled (max. display: 4800 sec.) After the maximum value is reached, the data is forwarded in order.

The palette specification field displays the palette No. currently selected or local selection status. A desired palette can be selected on the palette specification field.
Double click on [Value] in the window, and you can change the value by direct input or by selection out of pull-down menus.

12. Print

A parameter list will be printed by Menu Window (Fig. 7-1) [File (F)] ⟶ [Print (P)].

13. How to save print preview in CSV format

Click “CSV save” in the print preview window (Fig. 13-1), and you can save the contents displayed on the print display window in a CSV-format file.

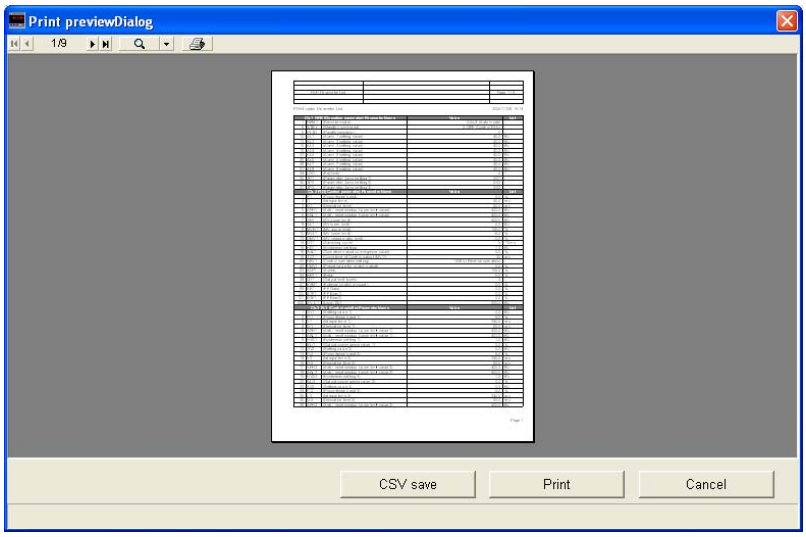

Fig. 13-1 Print preview window

Note)

This CSV-format file is different from saved on the menu window (Fig. 7-1). Saved files cannot be opened on the parameter loader.

14. Exit

Select Exit from the [File (F)] menu. Or click the exit button on the upper right-hand corner of the window to exit “PHXLoader.”

15. Precautions

(1) The software is provided free of charge as sample application for communication of digital controller (PXH), and is not intended for us to guarantee the operation of program. Supply of substitute for CD-ROM damaged or otherwise troubled or request for up-version will be with charge. Latest program versions will be reported occasionally on our website.

(2) This software cannot be used if a template number that cannot be selected by the parameter loader is selected on PXH.

(3) For details of parameter setting, refer to the User's Manual.

(4) Input type (PV1T, PV2T) can be selected out of types given in the table below according to the input unit (PV1U, PV2U).

Table 15-1 Input types

Input unit (PV1U/PV2U) setting	Input type (PV1T/PV2T) indicated as choices
C or F	TC (thermocouple) Pt (resistance bulb) only
non	TC (thermocouple) Pt (resistance bulb) Voltage Current } all

(5) If any parameter of Ch. 8, Ch. 9, Ch. G, Ch. X was changed, PXH must be restarted (reset). On this loader, if downloading is executed after changing any parameter of Ch. 8, Ch. 9, Ch. G, Ch. X, a message appears prompting you to admit resetting and the PXH will automatically be reset.

(6) While downloading after a change of scale setting, PV reading may be different from a true value temporarily. However, it is not a failure. A correct reading will be resumed after the end of downloading.

(7) LoC parameter of Ch.1 has a function of inhibiting downloading by communication. If LoC on PXH was set at any of 3 to 5, downloading or uploading automatically changes the LoC value of 0 to 2. If you use LoC at any of 3 to 5, carry out setting manually.

(8) Changing the setting (SV_L1, SV1 to SV7) on the Tuning Dialog does not change the setting value of Ch. 2 (SV_L1) nor Ch. 3 (SV1 to SV7). Check the settings of Ch. 2 (SV_L1) and Ch. 3 (SV1 to SV7) before you execute “download” after the end of tuning.

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