Data Capture Software

SOFT-CAP

Operation Manual

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☝ **Introduction**

This manual is intended to help user operate the data collection software "Data Capture" and consists of the following chapters.

"Program Setup" explains procedure of setting the Data Capture in hard disk of your PC.

Contents and format of display messages and Menu are explained in "Construction of Program".

"Basic Operating Procedure" explains the fundamental steps from selecting model number to processing data that has been received.

The "Additional information" describes the cautions in use of Data Capture software and the countermeasures to cope with the unexpected troubles.

Windows is required to run this data capture software.
For basic operations of Windows, refer to the Windows manual or online help/support.

Caution:

 1. This software works only on Windows 2000 / XP / Vista/ 7 English version. (32-bit version only)

 2. Microsoft Excel is expressed by [Excel] in this text.

 3. Excel 97 / 2000 / 2002 / 2003/2007/2010 must be installed if data transfer is intended to its spreadsheet.

 4. Windows and Excel are the registered trade mark of Microsoft Corporation.
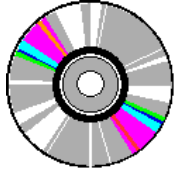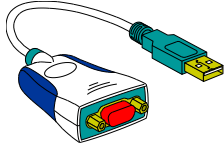
📦 Unpacking

When the packing has been delivered, check the contents with the below list.

If any part should be found damaged or defective, please contact your local dealer.

Part Number	Part name	Qty	sketch
12-02965	CD (Software) (Operation manual)	1	
64-00177-00	USB Serial Transducer	1	
59-00264	Installation manual	1	installation manual

<u>Caution:</u>

1. RS232C cable is not supplied with this product.   User has to prepare a suitable cable since pin configuration
   differs from personal computer.

Symbols and Rules

The description in this manual is made using the following symbols and rules

Menu, Command, and Dialog box.

Symbols	Description
[Setup] menu	The name of menu is shown in [ ].
[Model] in [Setup] menu	The name of command is named with its menu name boxed in [ ].
[Model Setup] dialog box	The name of dialog box is in [ ] shown in title bar of the dialog box.
[OK], [Cancel] button	Command button is named in [ ].
[Data Capture Launcher]	Its icon appears in [ ].

Operation of the mouse

Symbols	Description
Click	This action is made by pressing the mouse button once.
Double-click	This action is made by pressing the mouse button twice.
Point	This action is made by moving the mouse and point the mouse pointer to the object.
Drag	This action is made by moving the mouse with its button pressed on, and released at the object point.

Key operation

Symbols	Description
Enter	Key is shown in bold letter.
Alt + **X**	The + symbol means two keys are pressed at one time. For **Alt** + **X**, press **X** key while pressing **Alt** key.

Key name and code

In this operating manual, the following names are used for description of keys and listed are their corresponding code on your keyboard.

For other name or code not found in the list, refer to the manual of Windows 2000 / XP / Vista/ 7 published by Microsoft.

Symbols	101 key board
ESC	[ESC]
Tab	[Tab⇆]
Ctrl	[Ctrl]
CapsLock	[Caps Lock]
NumLock	[Num Lock]
Shift	[⇧ Shift]
Alt	[Alt]
Space	[ ]
Enter	[Enter↵]
BackSpace	[Backspace]
Ins	[Insert]
Delete	[Delete]
Home	[Home]
End	[End]
PageDown	[Page Down]
PageUp	[Page Up]
F1 - F10	[F1] - [F10]

Setup of Data Capture

How to install Data Capture

How to delete Data Capture

How to install Data Capture

1) Insert "SOFT-CAP CD" in the CD-ROM drive. Double-click [My Computer] on the desktop.

2) Double-click the icon of the CD-ROM drive in which "SOFT-CAP CD" is inserted.

3) Double-click the 'Setup_SOFT-CAP.exe' file.

Caution:

1. When installing the program under Windows 2000 / XP / Vista / 7, please be sure to log in with the user name of the authorized system administrator.

2. When you reinstall the program, be sure to erase the already installed program first.　To delete the stored program, refer to "**How to delete Program**".

4) When program setup starts, the file in Setup CD-ROM will be copied to your PC.　When the file is copied, click [Next >] on the below message display.
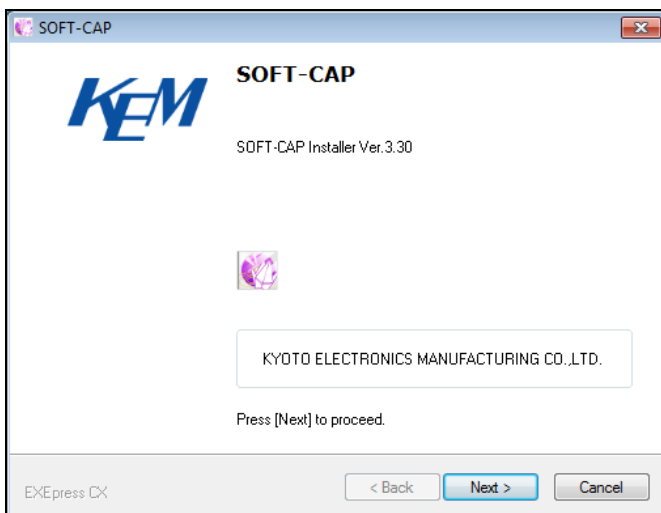
5) To change Directory for setting, click on [Change] button for directory change.

   After a directory has been set up, click on [Next >] button.
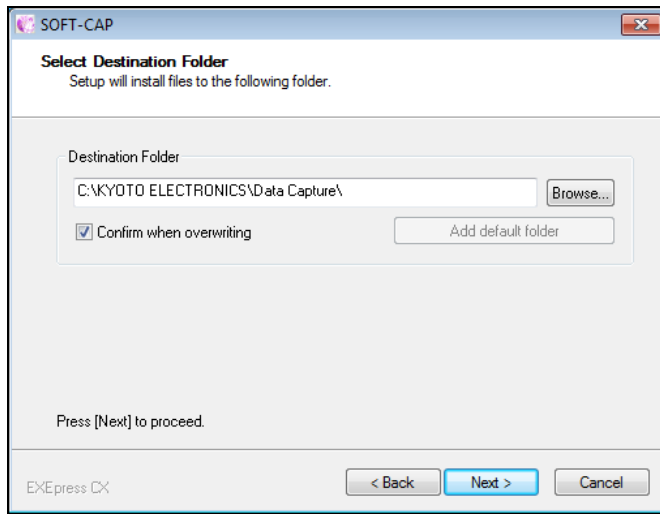
6) Click [Next >] button.
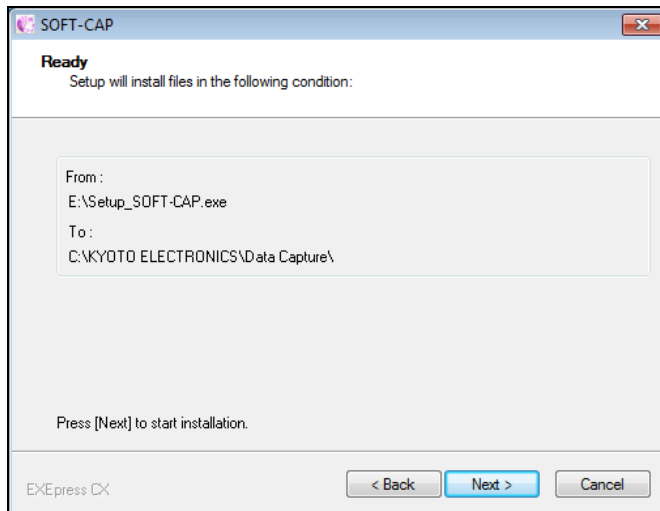
7) Copying the file is now started.

8) When the below screen appears, click on [Finish] button. This is the end of installing Data Capture software.
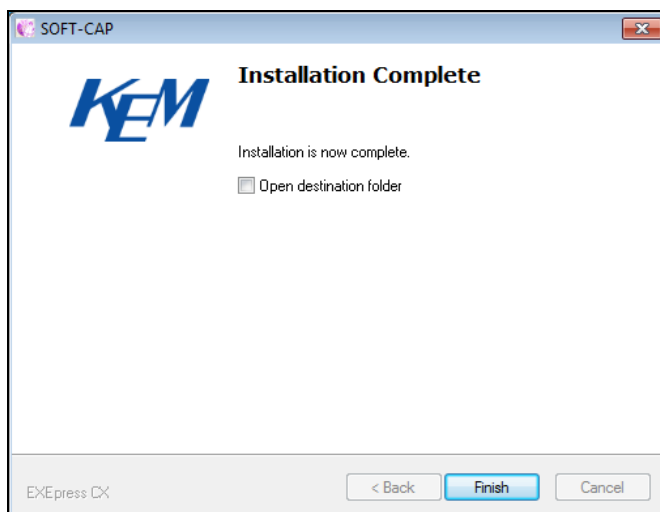
How to delete Data Capture

1) Open Control Panel, and double-click [Add/Remove Program] icon.
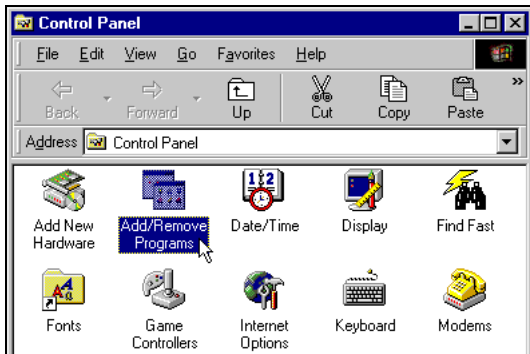
2) Select Data Capture and click "Change/Remove."

3) Dialog box of "Do you want to uninstall Data Capture?" will appear. Then click "Yes."

4) Un-installation starts in a while.

5) When the message of "Uninstallation is now complete." appears, uninstallation has been completed. Click "Close" to finish.

Setup of USB Serial Transducer

Setup of USB Serial Transducer

How to confirm the COM number after establishing connection

About USB Serial Transducer driver

Setup of USB Serial Transducer

Note:

Unless the installation of Data Capture is complete, do not go on to the following setup.

The driver for the USB Serial Transducer will automatically be installed when the data capture software is being installed.

Plug in the supplied Serial Transducer into USB port on the PC. (See below)
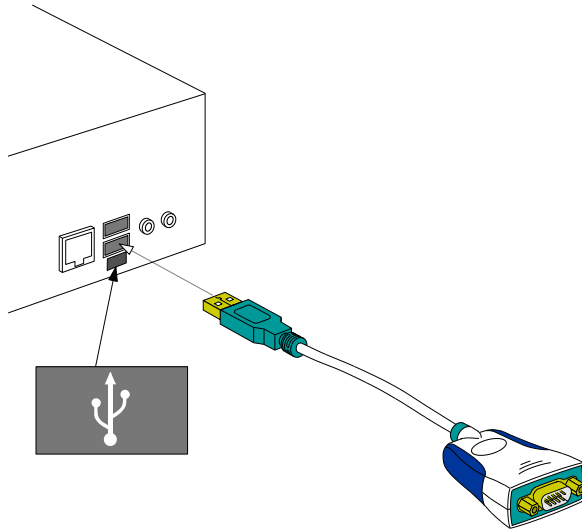
How to confirm the COM number after establishing connection:

1) Right-click the "My Computer" icon on the desktop and click on the "Properties" displayed.
   Note: For Windows XP/Vista/ 7, click on [Start].   Then, click on the "My Computer".

2) After clicking "Hardware" tab, click the [Device Manager] button.

3) On the "Device Manager" screen, double-click on "Ports (COM & LPT)" and check to see that "USB Serial Port (COMX)" is displayed.
   Note: "X" denotes the COM number. COM number depends on the communication protocol on your computer.
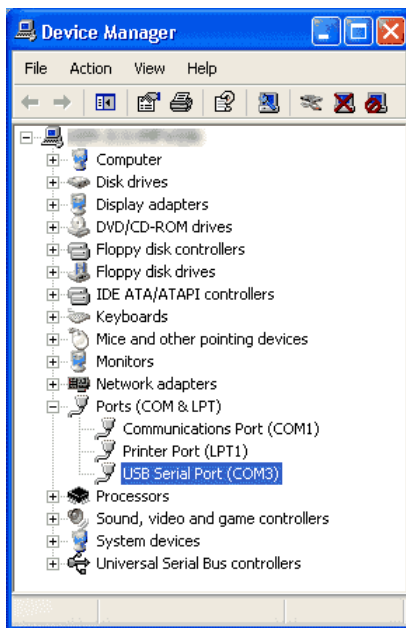
4) Close the window when confirming the COM number.

About USB Serial Transducer driver

You have to uninstall the driver and set it up again.

1) Double-click on the "Add/Remove Programs" icon in the "Control Panel".
2) Select "FTDI USB Converter Drivers" on the "Add/Remove Programs" window and click on [Change/Remove] button.

3) Clicking [Change/Remove] button turns the screen display as shown below. Then click on [Continue] button.

4) Now the driver software has been uninstalled.   Click on [Finish] button.
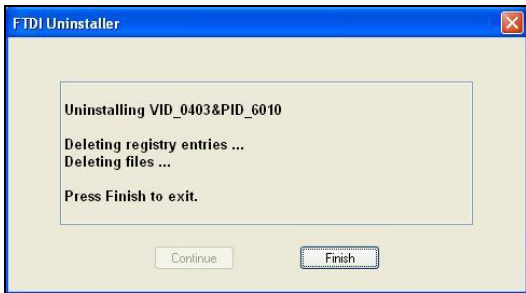
5) Demount the USB Serial Transducer from your PC and reboot the Windows.
   After rebooting the Windows, resume the USB Serial Transducer setup from the start.
6) Please download latest driver (VCP Drivers) from following URL, and do "Setup of the USB Serial Transducer" after installing the driver by Manual operation.

   http://www.ftdichip.com

Contents of Data Capture

Structure of display

Contents of Menu

- [File] menu
- [View] menu
- [Send Command] menu
- [Free Command] menu
- [Setup] menu
- [Help] menu

Structure of display
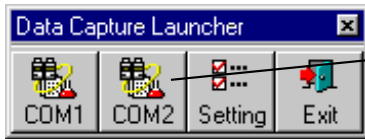
Launcher
The COM port button only available to start Launcher is shown here, where the Data Capture can be activated.

Menu
Here appears command name or function.

Toolbar
Buttons to execute command or function.

Data Capture Launcher

COM1 | COM2 | Setting | Exit

COM1 : AT-400 - Data Capture

File View Send Command Free Command Setup Help

Open | Label Transfer | Model | Protocol | Transfer data | Save Path | Edit data

STX | Free | ETX | Transmit

COM1 : AT-400

Item	Value	Unit	
Method No.	10		
Number of Combine Methods			
Combination No.			
Combine Method No.			
Combine Status			
Titr.Mode	Auto Control		
Titr.Form	EP Stop		
Preamp	CMT		
Detector No.	1		
T.Buret No.	1		
D.Buret No.	1		
Endpoints	3		
High Sample No.	2		
Low Sample No.	9		
Date	01/03/2093 03:26		
Meas.Time	00:06:15		
Titr.Volume	13.92	mL	

1:16 PM | COM1

Results display
Received results are shown In format.

Statusbar
Shows present time and COM port number.

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Contents of Menu

- **[File] menu**

Command	Contents
[File Open]	Open Workbook of Excel.
[Label Transfer]	Transfer Label according to the types of incoming data.
[Exit]	This command closed the program in work.

- **[View] menu**

Command	Contents
[Tool Bar] (Standard)	Toggle the Tool Bar (Standard) to display or not to display.
[Tool Bar] (Free Command)	Toggle the Tool Bar (Free command) to display or not to display.
[Status Bar]	Toggle the Status Bar to display or not to display.
[Model]	Toggle the instrument model to display or not to display.

- **[Send Command] menu**

Command	Contents
[Command Name]	Transmits the command defined by the model.

- **[Free Command] menu**

Command	Contents
[Edit Start Code]	Edit Start Code history.
[Edit Command]	Edit Command history.
[Edit End Code]	Edit End Code history.

- **[Setup] menu**

Command	Contents
[Model]	Configure instrument model.
[Protocol]	Configure communication protocol.
[Transfer data]	Configure items for export to Excel (items in CSV file format).
[Save Path]	Configure a path to save Excel workbook and CSV files.
[Edit data]	Configure manipulation method for received data.

- **[Help] menu**

Command	Contents
[Data Capture Help]	Displays Help.
[Receive Test]	Carry out a simulation test of data arrival, data transfer to Excel spreadsheet and data saving in the CSV file format under the condition that an instrument is not connected with a PC.
[About]	Displays information on version number.

Basic operating procedure

Activate the Data Capture

Select the model to use

Protocol setup

Transfer data setup

Save path setup

Edit data setup

Receive the results

Close the Data Capture

Activate the Data Capture

1) Click [Start] button and point [Program].   Then, click on [Data Capture Launcher] in [Data Capture] group.
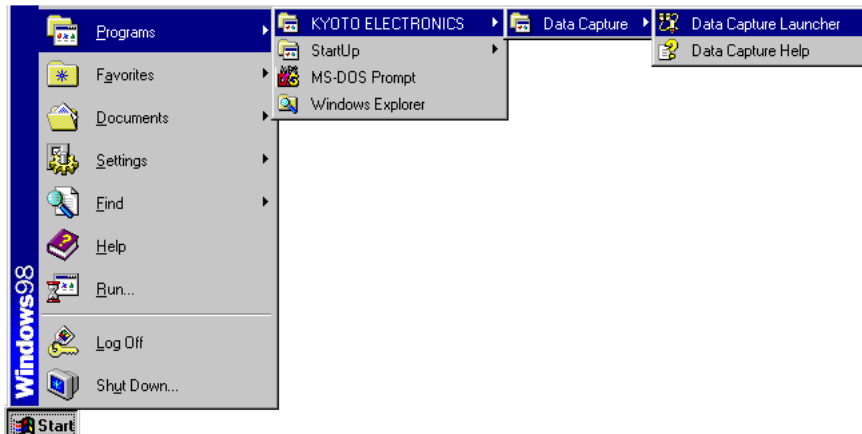
2) Before Data Capture is started, connect the unit to the COM port, and turn on the power.
3) Click on the COM port button where the unit is connected for Data Capture Launcher. (The available COM port button appears to activate Data Capture Launcher)

Caution:

1. When Data Capture is activated, if the connected unit has the function to tell the version number, it starts checking the status of version by communicating electronically.   If the unit is not connected or fails in communication, the error message "Unknown" will appear on display. (For details refer to "**Auto function to tell version number**" described in "**Additional Information**")

2. If the error shows "Unknown" status of the unit, check the connection and protocol, and then, select "Model" command in "Setup" menu, and re-select the correct model name of the unit.

Select the model to use

1) Click [Model] command in [Setup] menu or [Model] button on toolbar.

2) When [Model Setup] dialog box appears, select the desired model from the list, and click [OK] button.
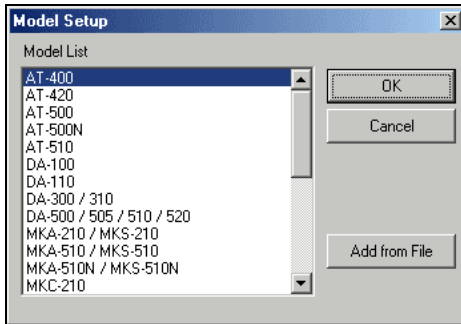
3) Make sure the unit name has been changed to a correct model.
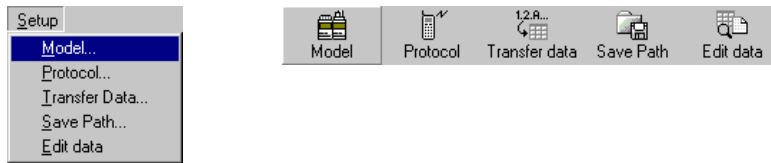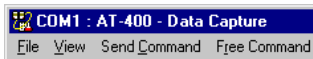

Caution:

1. When Data Capture is activated, if the connected unit has the function to tell the version number, it starts checking the status of version by communicating electronically. If the unit is not connected or fails in communication, the error message "Unknown" will appear on display. (For details refer to "**Auto function to tell version number**" described in "**Additional Information**")

2. If the error shows "Unknown" status of the unit, check the connection and protocol, and then, select ""Model" command in "Setup" menu, and re-select the correct model name of the unit.

Protocol setup

1) Click [Protocol] command in [Setup] menu or [Protocol] button on toolbar.
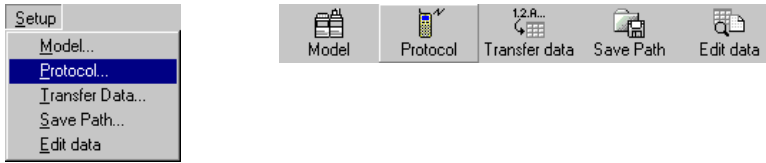
2) Dialog box [Setup Protocol] will appear.　Check if the instrument is the same as connected, and if not, correct it to the same. (Protocol for the instrument in use must be checked on the side of connected instrument.)
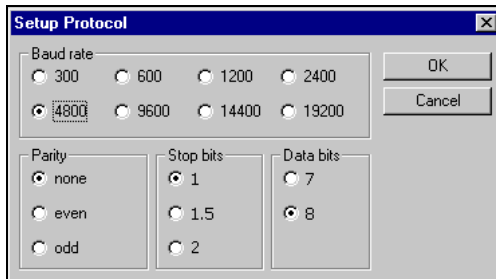
Caution:

1. Digital configuration for each instrument is memorized and unless the instrument is changed, it is not necessary to re-enter protocol.

Transfer data setup

1) Here you select either Excel Workbook or File in CSV format.   Click [Transfer data] command in [Setup] menu or [Transfer data setup] button on toolbar.

2) The dialog [Transfer Data Setup] will appear and those not to transfer to [Data not to transfer].   For details refer to **"Function by Control"**.Basically, configure the item to transfer to [Data to transfer]

Function by Control

[Data types]

Here you change the type of received data for those models like RA-520, etc. with a plural number of received data.   Data transfer is set up according to the type of received data. (e.g. Measurement results, Calibrated results, Check results for RA-520)

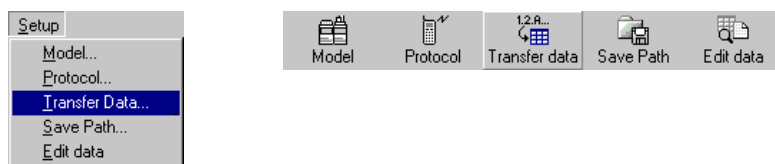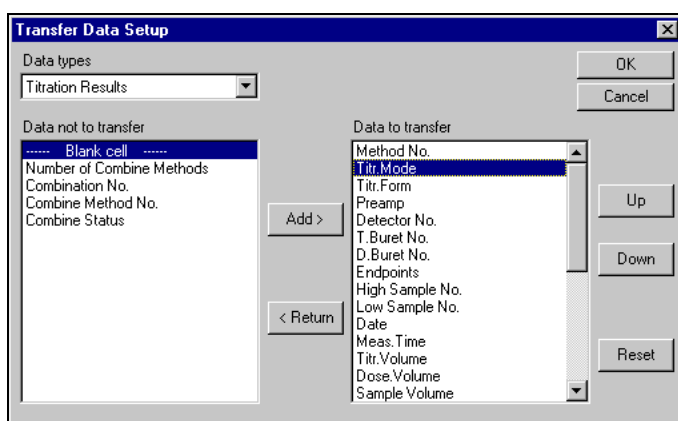[Data not to transfer]

The items not to be transferred to Excel (not saved in CSV file) are configured here.

Use "------ Blank cell ------" to insert a blank cell in between the items for [Data to transfer].   You can specify more than one or a series of "------ Blank cell ------" to [Data to transfer].   A blank cell configured at the end of [Data to transfer] will be deleted when any change is saved.

[Data to transfer]

The items selected here will be transferred to Excel (CSV file) according to the order configured.

Maximum 256 items can be selected.   Note that when where making the setting on transfer of receive data to Excel, do not set "------ Blank cell ------" at the forefront of data string to be transferred otherwise, the transferred data will be overwritten on Excel.

[Add >] button

Add the item (can be plural) selected in [Data not to transfer] to the end of [Data to transfer].   Equal to double click on those items selected in [Data not to transfer].

[< Return] button

Move the item (can be plural) selected in [Data to transfer] to [Data not to transfer].   Equal to double click on those items selected in [Data to transfer].

[Up] button

Increment by one step the order of items selected in [Data to transfer].

[Down] button

Decrement by one step the order of items selected in [Data to transfer].

[Reset] button

Cancel all the changes and return to the previous condition. If there is an instrument with a plural number of receiving data, only currently selected receiving data will be reset.

Caution:

1. Data transfer can be set up for the instrument in use. For other instrument, change instrument configuration first.

Save path setup

1) Save path is either to Excel Workbook or CSV format file.

Click [Save path] command in [Setup] menu or [Save path] button on toolbar.
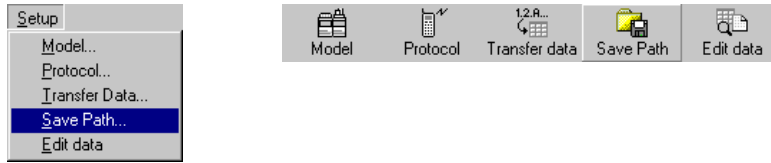
2) Dialog box [Save Path Setup] will appear.   The current setting is shown in the path.   To change the path, change drive and folder and click [OK] button.
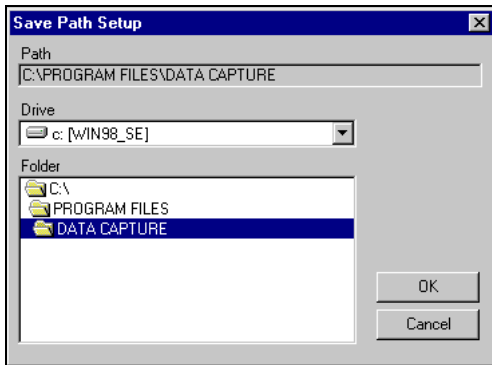
Edit data setup

1)   Here you select how to process the data that has been received.

Click [Edit data] command in [Setup] menu or [Edit data] button on toolbar.
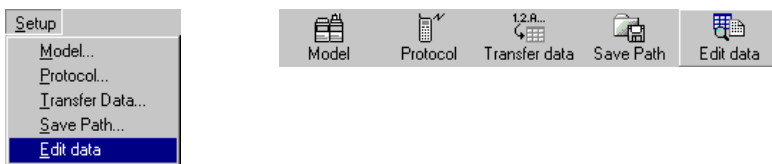
2)   The [Edit data Setup] dialog will appear.   Choose an option out of "Transfer data to Microsoft Excel", "Save data in CSV format" or "Display data only".
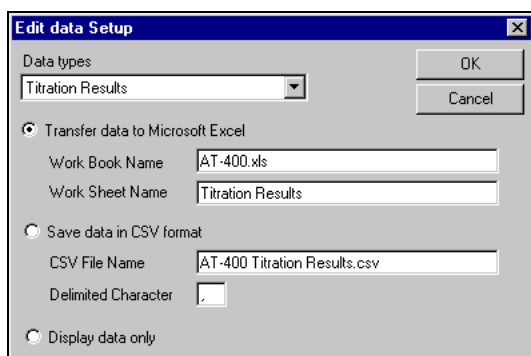
Function by Control

[Data types]

Here you change the type of received data for those models like RA-520, etc. with a plural number of received data. (e.g. Measurement results, Calibrated results, Check results for RA-520)

"Transfer data to Microsoft Excel"

Export to Excel the received results as configured in [Transfer data].   If there is an instrument with a plural number of data received, the worksheet name can be defined for each received data but the workbook name will remain in common.

"Save data in CSV format"

Save the received results as configured in [Transfer data] into CSV format.   If there is an instrument with a plural number of data received, the CSV file name can be defined for each received data.

Default delimited character is set to , (comma). When decimal symbol is , (comma), set the delimited character to ; (semi-colon), etc.

"Display data only"

Display of received results only.

Receive the results

1) Here all you have to do is just wait for output of measurement results coming from the connected instrument. There is nothing to operate on programming.

2) The received data will be shown as in the list view as below.
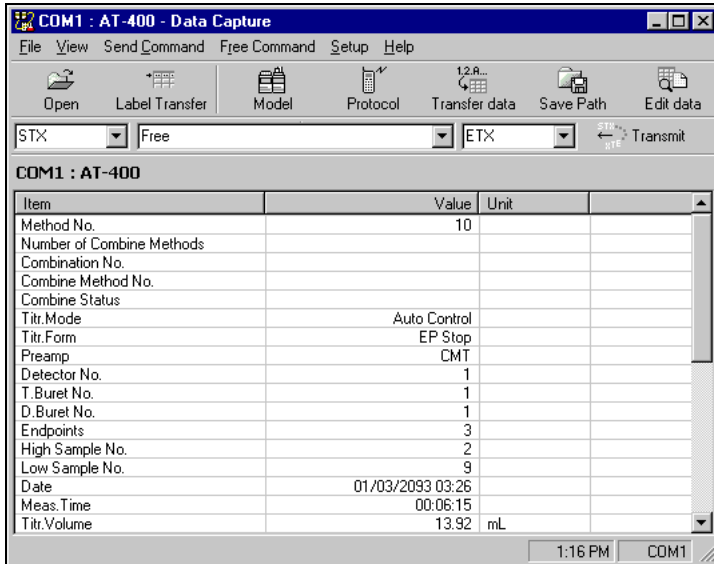
3) When [Edit data] is set to "Transfer to Microsoft Excel", the received results will be transferred to Excel. After data transfer is finished, Data Capture will appear in front.
When [Edit data] is set to "Save in CSV format file", the data will be saved in CSV format.

Caution:

1. You do not need to activate Excel. Data Capture will automatically activate Excel. If Excel is already activated before first data is received, another Excel will be activated.

Close the Data Capture

1) To close the program, click [Close] button to the right on toolbar or double click on [application] icon to the left on title bar.

[Application] icon   [Close] button
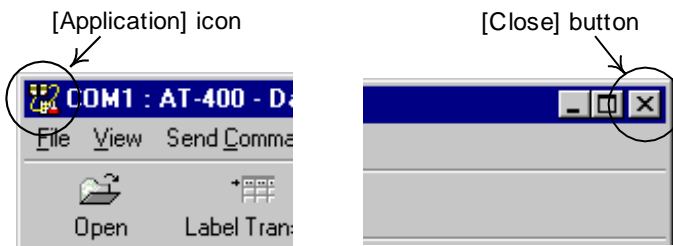
Caution:

1. Terminating Data Capture cannot close Excel.   Excel has to be closed separately.

Additional information

Connection diagram

Auto function to tell version number

Tips for better usage

- Calculate the total of transferred data on Excel

- Change the color by transferred data

Cautions

Troubleshooting

- Data Capture does not start up

- Error "Not Connected" persists every time instrument configuration is tried.

- Data does not go to Excel. (Unable to be saved in CSV file format)

- Warning message when you try to open a file of measurement results in Excel 2007/2010.

- USB Serial Transducer is not recognized.

Specification

Connection diagram

RS-232C Extension Interface Board

RS-232C   RS-232C   RS-232C   RS-232C
CH4   CH3   CH2   CH1

Channel 1

RS-232C Connecting cable
12-02012(2m)

*AT-400   APB-410
                                Auto piston
Automatic   burette
potentiometric titrator

Channel 2

RS-232C Connecting cable
12-02012(2m)

*AT-400   APB-410
                                Auto piston
Automatic   burette
potentiometric titrator

Channel 3

RS-232C Connecting cable
12-02012(2m)

*AT-400   APB-410
                                Auto piston
Automatic   burette
potentiometric titrator

Channel 4

RS-232C Connecting cable
12-02012(2m)

*AT-400   APB-410
                                Auto piston
Automatic   burette
potentiometric titrator

Caution:

1. The above chart shows a system instrumented with AT-400, however, other instrument can also be connected likewise.   See [Specification of Data Capture]

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Auto function to tell version number

The software version of the connected instrument is checked by Data Capture through a series of communication when Data Capture is activated and also when an instrument of different model is connected to PC (see the list of models below).
Therefore, when Data Capture is activated or when an instrument of different model is connected, the power of the connected instrument must be turned on in advance.

If the instrument is not connected or if communication protocol does not match, the communication fails in error, which is displayed as an error message "Unknown" on instrument configuration.
In this case, only "Model Setup" and "Protocol Setup" will be significant.

Instruments equipped with the auto function to tell version number

AT-700
DA-650 / 645 / 640
RA-620 / 600
AT-510
DA-500 / 505 / 510 / 520
MKA-510 / MKS-510
MKA-510N / MKS-510N
MKA-520 / MKS-520
MKC-500
MKC-501
MKC-510
MKC-510N
MKC-520
MKS-500
RA-410
RA-500
RA-520

Tips for better usage

Calculate the total of transferred data on Excel

By a calculation formula preset on Excel worksheet, the total value can be calculated as soon as the data is transferred.

Here is the description for example on how to calculate total amount of 　X 　for three measurements.

1) Using [Transfer data] command on [Setup] menu, make up a blank cell to show total value. (The below example sets up one behind the 　X)
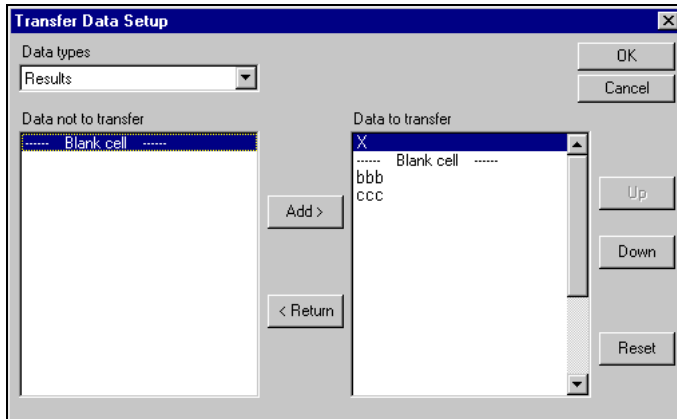
2) Transfer the label for measurement results by [Label transfer] command on [File] menu.

3) With reference to the transferred label, confirm the position of blank cell. (The below example shows the 　C string to be blank)
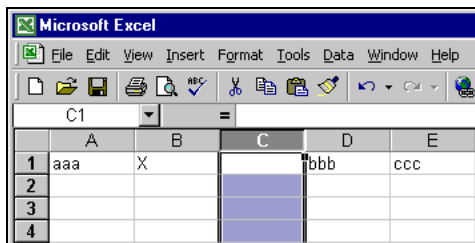
4) Configure the calculation formula for the total of three measurements. (The below example shows B2 to B4 stands for 　X 　for three samples, and the formula for total amount is set on C4)
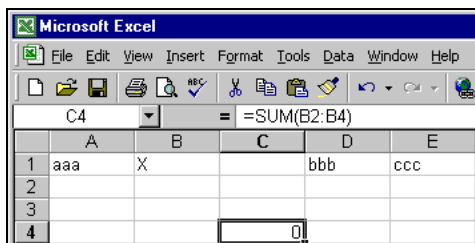
5) After the above procedure up to step 3 is completed, store the worksheet on Excel. Then, conduct measurements, and receive measurement results.

6) When the results for three samples are transferred, the total value can be obtained.

Tips

- Other calculations than total amount can be obtained by changing the formula. For details refer to Help on Excel, etc.
- After setting each calculation formula, make sure to store the workbook on Excel. Be careful sending a data without being stored may cause an error.
- Calculation formula setup must be made on the string where blank cell is provided. If a formula is set on a string other than blank cell may cause deletion of formula by sending transferred data.
- Do not set up a formula while data is being transferred, which may cause an error.

Change the color by transferred data

Making use of functions of Excel enables identifying the transferred data by color whether smaller or larger than expected value. (This function is available for Excel 97 or later. Excel 95 is unable to do this)

Take an example how to show the value in red color when the X is below 6.2.

1) Transfer the label for measurement results using the [Label transfer] command on [File] menu.
2) Referring to the transferred label, make sure of the X. (The below example shows the C string stands for X)
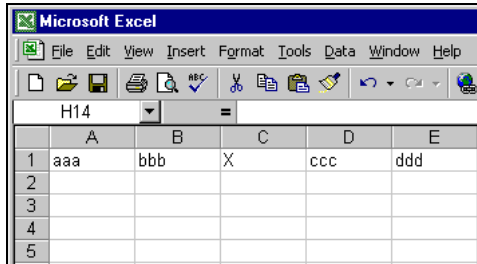
3) Select the range of cell to change color by condition.
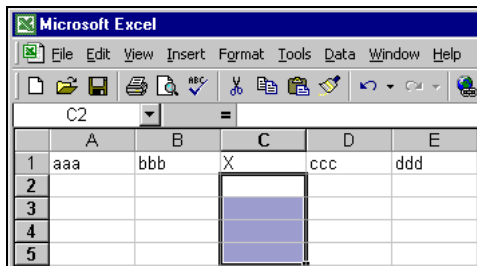
4) Select [Conditional Formatting] command on [Format] menu in Excel.
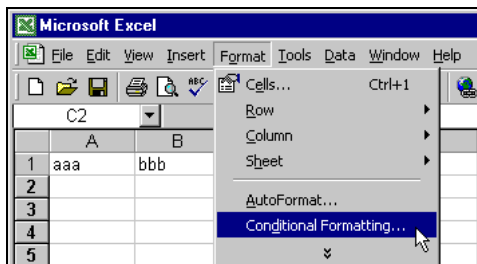
5) Configure format conditionally according to the value. (The below example shows the red color for value less than 6.2)
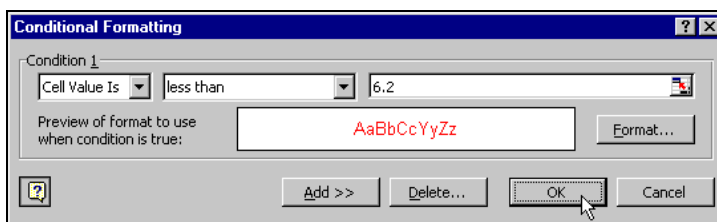
6) After the above procedure up to step 5 is completed, store the worksheet of Excel. Then, receive measurement results.

7) When the results are transferred, the values will be shown to the preset format.

Tips

- Not only color but also tables and netted cells can be changed. For details refer to Help in Excel.
- After setting each conditional format, make sure to store the workbook on Excel. Be careful sending a data without being stored may cause an error.
- Do not set up a conditional format while data is being transferred, which may cause an error.

Cautions

- While received data is transferred to Excel, do not close Program and Excel in order to avoid error in software.

- The header for items will be transferred only when data is downloaded for the first time to Workbook or into CSV format.
  Therefore, if data transfer configuration is changed, you need also to change the name of Workbook or CSV file.
  If data transfer continues without changing the name, the data will be sent as the continuation of previous communication and thus, the header and contents of the item will not match.

- The transfer position of received data for Excel is in the next blank line of Workbook.
  If Workbook is edited while data is being transferred, the receiving position may be deviated or an error may be alarmed.
  Do not edit data in Excel during data in transit.

- If erroneously Program is aborted, terminate Excel first, if activated, after data has been saved.
  If Program is restarted active with Excel, another Excel will be activated, and received data will be transferred to the newly activated Excel.

- If data transfer error occurs, data will not be transferred to Excel from that moment.
  If an error should appear, exit Data Capture and close Excel, and turn them on again.

- When more than one port is used for the same model, data transfer configuration will be the same.
  If data transfer configuration is changed for more than one port, the last modified configuration will become significant.

- When the same model is configured for more than one port, you can name Workbook, Worksheet or CSV file according to the individual port.
  Please note: since the same initial name is given to Workbook, Worksheet and CSV file, configure differently from each port.
  If data is transferred with the same configuration, an error of communication failure may appear.

- When making the setting on transfer of receive data to Excel, do not set "------ Blank cell ------" at the forefront of data string to be transferred.
  Otherwise, the transferred data will be overwritten on Excel.
  (See "Transferred Data" describing the functions by control.)

Troubleshooting

- **Data Capture does not start up**
  1. Check if it is already activated.
  2. Check COM port if other instrument uses it.
  3. If Data Capture does not start with error message on, terminate all active applications and restart Program.

- **Error "Not Connected" persists every time instrument configuration is tried.**
  1. Check COM port number if instrument COM number matches program port.
  2. Check protocol if configuration on instrument matches on program.
  3. Make sure the instrument configuration has been made correctly.
  4. Check the contact of cable connecting the instrument and computer.
  5. Check the cable itself if it is correct cable, cross or straight.

- **Data does not go to Excel. (Unable to be saved in CSV file format)**
  1. Check the manipulation method if it is set to "Display received data only". (Refer to "Edit data Setup")
  2. Check Workbook (in CSV file format) if it is used by any other program.
  3. If you have opened the Excel file which you last output before running the data capture software, the file will not be updated. Close the Excel file and wait until the data capture software automatically starts the Excel when measurement results are being received.
  4. If data transfer error occurs any once, restart the program. (Refer to "Cautions in use")

- **Warning message when you try to open a file of measurement results in Excel 2007/2010.**

  When opening a file of measurement results in Excel 2007/2010, you receive the following warning message, "The file you are trying to open, '~.xls' is in a different format than specified by the file extension. ··· Do you want to open the file now?" You can open the file if you click "Yes" in the dialog box; however, you receive the same warning message every time you open this file. To avoid this, when you open the file, click "Menu > File > Save as" and select "Microsoft Excel 97-Excel 2003" from "Save as type." Then, save it with the current file name.

- **USB Serial Transducer is not recognized.**

  While the USB Serial Transducer is plugged into the USB port of your PC, open Device Manager by following the same steps as stated in "How to confirm the COM number after establishing connection" of "Setup of USB Serial Transducer." Right-click on "USB HS Serial Converter" under "Other devices" to delete it. Once completed, plug the USB Serial Transducer into the USB port once again to continue setup.

Specification

Control command	"Data Capture" software in 1× CD-ROM
Function	1) Export direct to Microsoft® Excel 2) Store in CSV format 3) Display on user's computer screen
Control command	see the chart of Model and Control commands
Signal interface	RS232C synchronized signal method Signal code : ASCII Baud rate : 300/600/1200/2400/4800/9600/14400/19200 Start bit : 1 bit(fixed) Data length : 7/8 bit Stop bit : 1/1.5/2 bit Parity : even, odd, no parity
Flow control	Not available
Procedure	Sequence of transmittal not limited
Connectable instrument	DA-640,DA-645,DA-650,DA-520, DA-510, DA-505, DA-500, DA-310, DA-300, DA-100, DA-110, MKA-210,MKS-210, MKA-510, MKS-510, MKC-210, MKC-510, MKC-510N, MKC-520,MKC-500, MKC-501, MKS-500, MKA-510N, MKS-510N, MKA-520, MKS-520,AT-510, AT-400, AT-420, RA-600, RA-620, AT-500N, AT-500, RA-520, RA-520N, RA-500, RA-500N, RA-410, RA-510, QTM-500, MKH-700MKA-610, MKC-610, AT-610,AT-700,ASDA-5000, DA+RA(600)Combination,D155

Application

Data Capture software not only displays and transfers data of measurement results to Excel workbook or saves in CSV format for edit and file, but controls the connected unit or units for the following functions of each model:

Model	Control commands by Data Capture from User's computer
DA-640 DA-645 DA-650	1) Start density measurement, 2) Start calibration, 3) Start check measurement, 4) Reset measurement, 5) Start multiple sample changer, 6) Move to measurement screen
DA-520 DA-510 DA-505 DA-500	1) Start density measurement, 2) Start calibration measurement, 3) Start check measurement 4) Reset measurement, 5) Start multiple sample changer
DA-300 DA-310	1) Start density measurement, 2) Start factor measurement, 3) Start check measurement 4) Reset measurement, 5) Reset statistics, 6) Skip measurement sequence 7) Start multiple sample changer
DA-100	1) Start density measurement, 2) Reset measurement
DA-110	No control command
MKA-210 MKS-210	1) Start moisture measurement, 2) Start pre-titration, 3) Reset blank titration 4) Reset measurement
MKA-520 MKS-520 MKA-510N MKS-510N MKA-510 MKS-510 MKS-500	1) Start moisture measurement, 2) Start pre-titration, 3) Reset titration 4) Reset statistics

Model	Control commands by Data Capture from User's computer
MKC-210	1) Start moisture measurement, 2) Start pre-titration 3) Reset titration 4) Reset measurement, 5) Reset statistics
MKC-520 MKC-510N MKC-510 MKC-501 MKC-500	1) Start moisture measurement, 2) Start pre-titration 3) Reset titration 4) Reset statistics (for MKC-520, MKC-510N, MKC-510 only)
AT-510	1) Start titration, 2) Reset titration, 3) Pause titration, 4) Cancel pause 5) Start multiple sample changer, 6) Reset multiple sample changer
AT-700	1) Start titration, 2) Reset titration, 3) Start multiple sample changer
AT-420 AT-400 AT-500N AT-500	1) Start titration, 2) Reset titration, 3) Pause titration, 4) Cancel pause 5) Start multiple sample changer
RA-600 RA-620	1) Start density measurement, 2) Reset measurement, 3) Move to measurement screen
RA-520 RA-500 RA-520N RA-500N	1) Start measurement, 2) Start calibration, 3) Start check measurement 4) Reset measurement, 5) Start multiple changer
RA-410	1) Start measurement, 2) Start calibration, 3) Start check measurement 4) Reset measurement
RA-510	1) Start measurement, 2) Start zero calibration, 3) Reset measurement, 4) Reset statistics 5) Skip measurement sequence, 6) Start multiple changer
QTM-500	1) Start measurement, 2) Reset measurement, 3) Reset statistics
MKA-610 MKC-610 AT-610	No control command
ASDA-5000	No control command
APD-600A	No control command
DA+RA(600)Combination	1) Start density measurement, 2) Start calibration, 3) Start check measurement, 4) Reset measurement, 5) Start multiple sample changer, 6) Move to measurement screen
D155	No control command

Recommended system

Personal computer	Windows 2000 / XP / Vista (Home Basic , Business) / 7 (Home Premium, Professional) with more than Pentium II 233MHz and Excel 97 / 2000 / 2002 / 2003 /2007/2010 (32-bit version only)
Memory	More than 128MB (512MB recommended)
Hard disk	Space more than 10MB
Display	More than 640 by 480
Drive	CD-ROM
Serial port	Serial port or USB Serial Transducer required per each instrument

Caution:

1. Up to four (4) instruments can be connected.

2. Operation is not guaranteed when a USB hub or a USB cable extension is used.

KEM KYOTO ELECTRONICS
MANUFACTURING CO., LTD.