# U-20 Data Collection Software(U-2X Win/E) Operation Manual

**As this software is only made for sample, all problems regarding this software is out of guaranty.**

## 1 Introduction

This software allows you to save data measured with U-20 Series Multi Parameter Water Quality Monitoring System as CSV format files. In using this software with personal computer, Prepare U-20 instrument, sensor, and expansion unit of U-20 and RS-232C cable. See operation manual of U-20 Series and Expansion unit about functions of U-20 and RS command.
This software has two specifications: English and Japanese. The followings describes how to install and use this software with English specification.

**Required PC environment**

| | |
|---|---|
| PC: | PC/AT compatible computer with 800 MHz Pentium CPU or faster and RS-232C port, running Windows 98, Windows 2000 or Windows XP. |
| Memory: | Min. 64 MB or more |
| Drive : | CD-ROM drive |
| Hard disk : | Min. 20 GB of available space |
| Graphic resolution: | 800 x 600<br>This software can be used with 1024 x 768 and higher resolution monitors, though the picture will move to the upper left. |
| Font size: | small font |

## 2 Installation

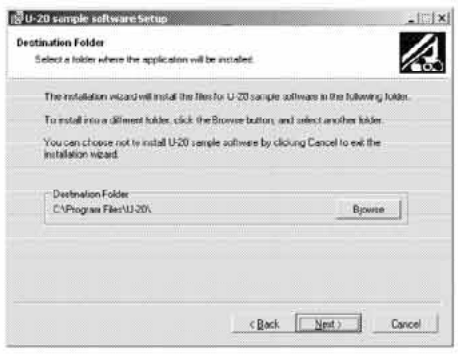
Installation requires the attached setup-CD.
Install the software as follows.

1. Turn ON your PC.
2. Set setup-CD to the CD-ROM drive.
3. Double-click "setup.exe" in the "English" folder of the folder of CD drive.
4. When the screen "Welcome to the U-20 sample software Installation Wizard" appears, check that other applications are not operating and click the "Next."

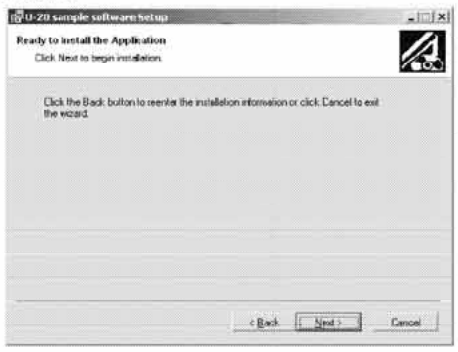





5. Specify the folder of installation place and click the "Next." It is installed in C:\Program Files\U-20\ in initial setting.




6. Click the "Next" again.




7. When the screen "U-20 sample software has been successfully installed." appears, click the "Finish." Installation finished.





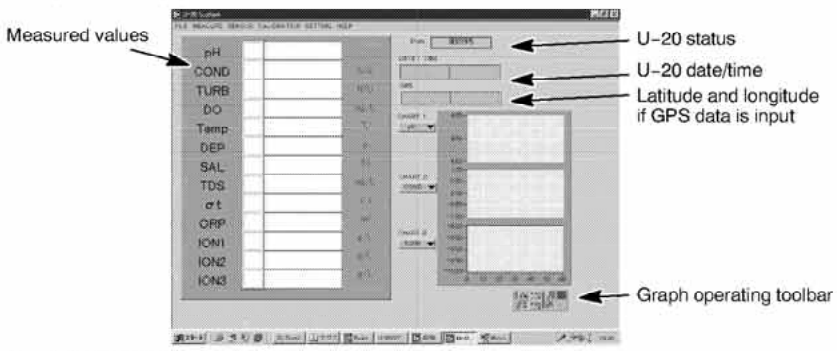

## 3 Connections

1. Connect your PC to the system with an RS-232C cable and an expansion adaptor if necessary. (See "3.1 RS-232C Communication Settings" in the Expansion Unit Operation Manual.)
2. Turn OFF the U-20 instrument.
3. Simultaneously press the "SET" and "POWER" keys on the U-20 instrument.
4. Release the "POWER" key but keep the "SET" key held down. "PC 232C" will appear on the instrument's display.

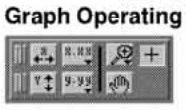
## 4 Software Startup

Selection of "(all )program" of "start" menu -> "HORIBA U-20" -> "U-20" starts software.

## 5 Main Window




- **Graph Operating Toolbar**



· XY Scaling
· Scale Style
· Graph Scrolling
· Zoom (Up/Down)

**XY Scaling**


X-axis auto scale button


Y-axis auto scale button

Clicking on the auto scale buttons automatically scales the selected axis to the data received up to that point.


Lock button


Locked
Unlocked

When the lock button is ON, the auto scale buttons are held in the ON state and the axes are scaled continuously and automatically according to the measured data.

**Scale Style**


X-axis scale style button
Y-axis scale style button

The style of scale markers can be user-set.

**Graph Scrolling**

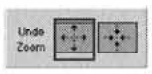

Pan tool

When panning is ON, you can scroll displayed data by clicking and dragging the graph itself.

**Zoom (Up/Down)**


Zoom tool

When zoom control is ON, you can enlarge selected areas of the graph by dragging a cursor box over the graph.
Zoom commands are displayed in a pop-up menu.

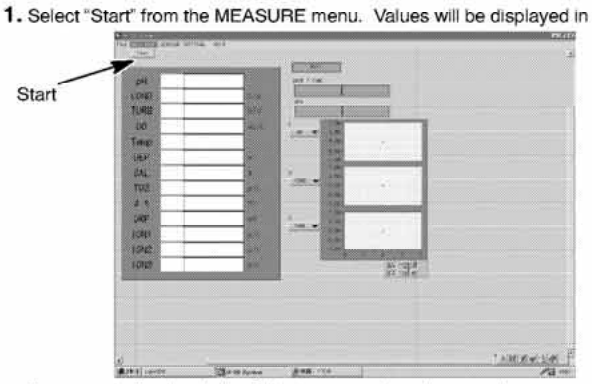


Pop-up menu



## 6 Displaying the Measuring Data

1. Select "Start" from the MEASURE menu. Values will be displayed in the measured value area.




**Note▸▸▸** If an error is displayed, the followings may have happened.
The error No. displayed here is explained in the Operation Manual for expansion units.
· The cable is disconnected.
· "PC 232C" is not displayed on the U-20 instrument.
In both cases, redo the procedure in "3. Connections".
· COM port connected to U-20 is not 1.
Select "PortSec(PC)" from the SETTING menu and select the COM connected to U-20, then click on the "OK" button. The default setting for COM port to be connected to U-20 is 1.

2. Select "Stop" from the MEASURE menu to stop measurement.

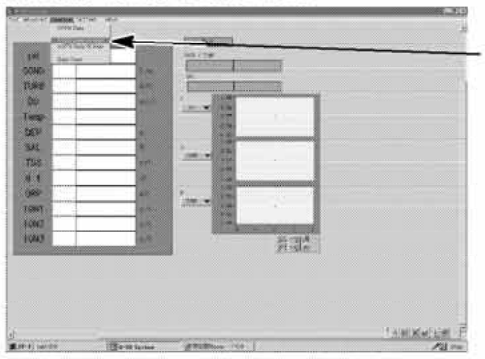
**Conf▸▸▸** When 2880 data is measured, the measurement stop automatically.

- **Storing manually measuring data**
  - Select "Man Data IN" from the MEASURE menu during the measurement.
  - To save measured data as a file, select "Save File" from the FILE menu.
    The all data which have just been measured will be saved.

## 7 Storing Automatically Sampling Data

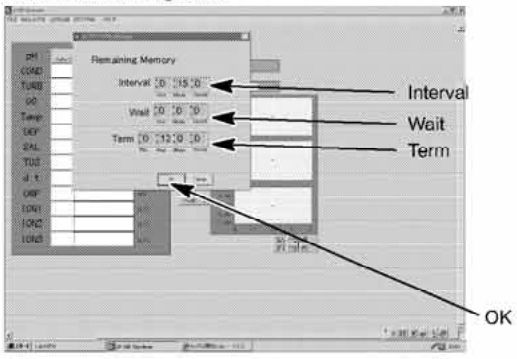
**To Start**

**1.** Select "Auto Data IN Start" from the SENSOR menu.




**2.** Set the Interval, Wait and Term as with the instrument itself.
(See "4.2 Automatic data storage" in the U-20 Series Operation Manual.)

**3.** Click on the "OK" button.
The sensor probe will start storing data..




**Note▸▸▸** Setting beyond the usable range will cause an error.

**To Stop**

**1.** Select "Auto Data IN Stop" from the SENSOR menu.

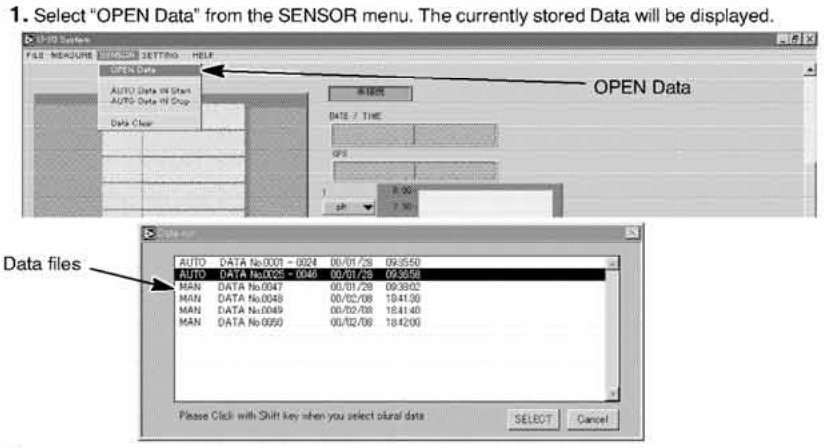
**2.** Click on the "OK" button in the confirmation box. Data storing will stop.



## 8 Reading Data from the Sensor Probe

You can read data (manually/automatically) stored in the sensor probe's memory and save it as a file.

**1.** Select "OPEN Data" from the SENSOR menu. The currently stored Data will be displayed.

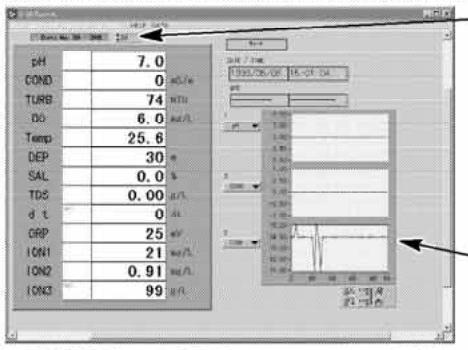



**2.** Double-click the Data file that you want to read. The data with the last DATA No. in the data file will be displayed.

**Conf▸▸▸** ・The displayed Data No. shows the No. in the sensor probe's memory.
・Several data files can be read at once as you select several data files with pressing the Shift key.

**Note▸▸▸** When reading data in one session of automatic storage, all data is read. Each data will take approx. 1 second to read. For example, it takes approx. 10 seconds to read one data file with 10 data.

**3.** Auto stored data can be selected and displayed as graphs. Select graph items to display graphs. It is also possible to select data for displayed measured values by inputting a Data No.




**4.** Select "CLOSE" from the DATA menu to return to the Main window. The selected data and graph will be displayed on the Main window.

**5.** To save data as a file, select "SAVE FILE" from the FILE menu.

**Conf▸▸▸** All the data read from the data files are treated as one data group when several data files are read at once. Therefore, the graph is displayed by the combination of several data files. The data is saved in one file.



## 9 Reading Data from Files

**1.** Select "OPEN FILE" from the FILE menu.

**2.** Select a file. The selected data will be displayed.

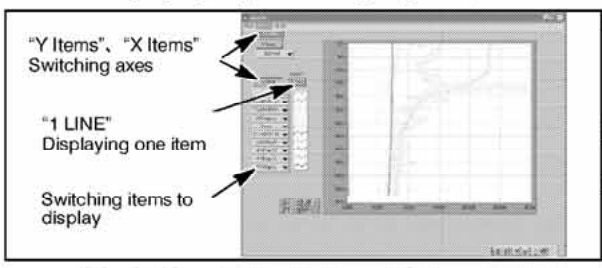
**Conf▸▸▸** The displayed DATA No. in each file starts from No.1.

**3.** Select "CLOSE" from the DATA menu.

## 10 Data Graph

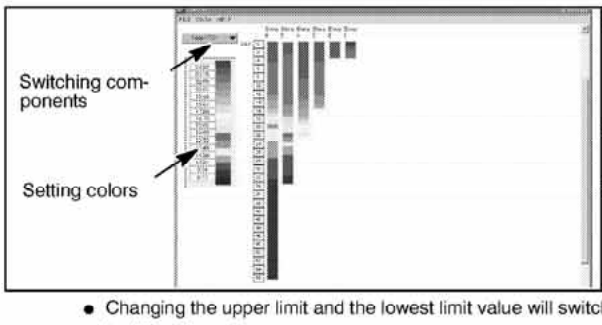
This sample software allows you to display data graphs per data file read from the sensor probe. The graph display can be selected from the following two types.

- **X-Y graph (Graph of change by time)**




**1.** Read the data from [8 Reading Data from the Sensor Probe] and [9 Reading Data from Files].
**2.** Select "GRAPH" from the DATA menu.
**3.** Selecting "CLOSE" from the DATA menu will return to Main window.

- **COLOR Graph (Depths based Color graph)**




**1.** Read the data from [8 Reading Data from the Sensor Probe] and [9 Reading Data from Files].
**2.** Select "DEP COLOR" from the DATA menu.
**3.** Selecting "CLOSE" from the DATA menu will return to Main window.

- Changing the upper limit and the lowest limit value will switch the setting automatically at regular intervals.
- Selecting " Data Addition" from the DATA menu will add graph in other files. (You can add up to 20 graphs.)
- Selecting "Data Clear" from the DATA menu will delete all graphs.
- The data of GPS is saved with each measurement values. Please select "GPS Position" and the graph will show the data based on latitude and longitude.

## 11 Printing Windows

You can print windows in which FILE menu can be accessed .

**1.** Select "PRINTER SETUP" from the FILE menu to set up the printer if necessary.

**2.** Select "PRINT WINDOW" from the FILE menu. The currently displayed window will be printed out.



## 12 Software Closing

Select "END" from the FILE menu in the MAIN window. The software will close.

Windows™ is a trademark of Microsoft Corporation.

Specifications are subject to change without any obligation on the part of the manufacturer.

Technical questions regarding this product should be directed to the following HORIBA Customer Support Center.

Call toll free (in Japan): 0120 - 37 - 6045 Hours: 9:00 a.m.. - 5:00 p.m., Mon. - Fri.

HORIBA, Ltd.

CODE:I1000235000A Ver.1 January, 2005
©2000-2005 HORIBA, Ltd.