OPERATION MANUAL

RS232   SOFTWARE
FOR HAND HELD METER

CE

I N D E X

INTRODUCTION:

Thank you for purchasing the RS232 software which is used for the following products to on-line logging data to PC for further analysis.

a) K.J.T or K.J.T.R.S.E.type Thermometer.
b) pH /mV meter.
c) Hygro-thermometer & Psychrometer
d) Digital Sound Level Meter.
e) Anemometer.
f) Manometer.
g) Conductivity meter.
h) IR Psychrometer
i) D.O. Meter

Or more Hand Held meters with RS232 interface feature. This software is user-freindly to meet your maximum satisfaction.

FEATURES:

● Up to 10,000 sample readings with real-time clock memory.
● Programmable sample interval from 1 second to 3,600 seconds.
● User-defined maximum (High) and minimum alarm (Low) setting.
● Allow further analysis by downloading data to computer program.
● To assist data analysis and process control, all data is saved in text format (.txt) and can be easily transformed for use by Microsoft Office software applications.

Note:
Microsoft® Office is a registered trademark of Microsoft Corporation.

THE PACKAGE IS SUPPLIED WITH:

1) A CD ROM. **2)** RS232 or USB cable **3)** Operation manual.

Hardware requirement:

Windows 98/2000/NT/XP/VISTA operation system with COM1 to COM4 serial ports.

Installation procedure :

1. Connect the cable to COM port and your meter.
2. Insert CD-ROM to the computer for starting software set up.
3. For USB cable, be sure to install the corresponding USB driver per your computer operation system.

Click to install
USB driver

For Windows 98

For Windows 2000/NT/
XP/VISTA

EASY OPERATION:

※ <u>Diagram A</u> shows when you enter the program and before
connecting with any Hand Held meters. While there is no meter
connected, the reading in two blocks showed without title.
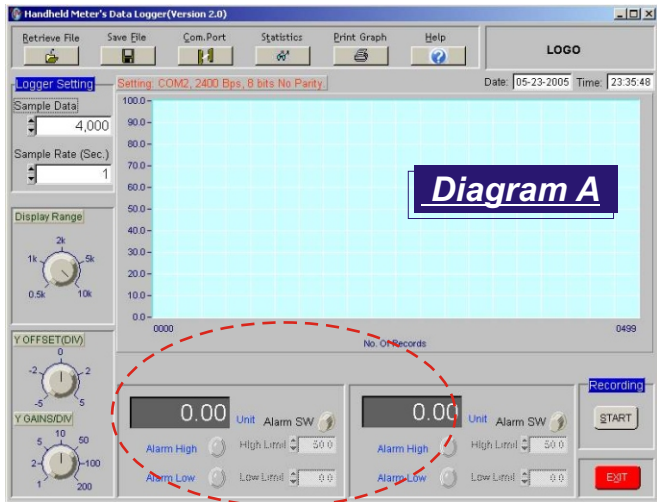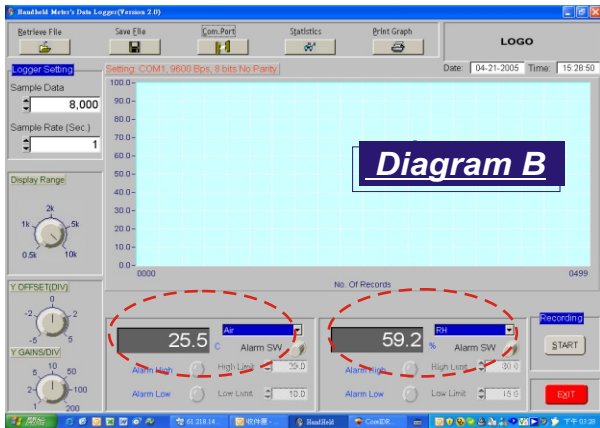

Diagram A
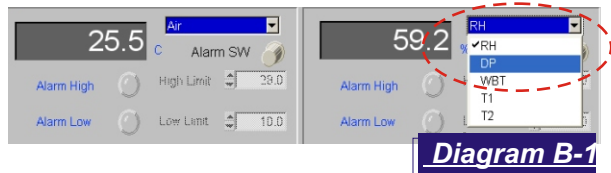
Take Psychrometer (Dual K Type Input) as example

While linking with your personal computer , you will see "Air" and
"RH" displayed. (See Diagram B)

Left Side **:**Display AIR Temperature
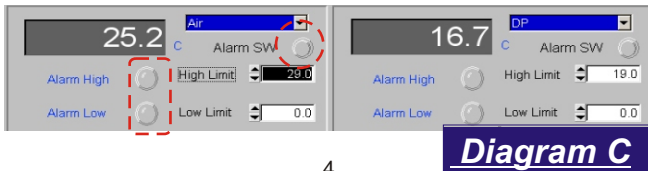**Right Side** **:** Display RH (Humidity Value)

Diagram B

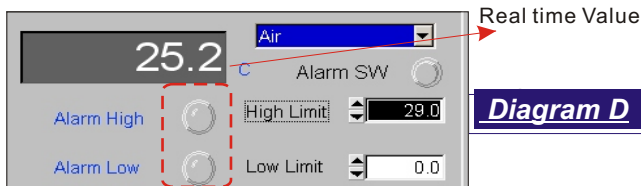*If a meter could export more than two parameters, users could choose any two of them to set alarm values.(See Diagram B-1)*


Diagram B-1

Click Alarm SW button (See Diagram C) to active the limit setting, afterwards, High/ low limit can be keyed in directly or by clicking ▲ to increase or ▼ to decrease figures.

Diagram C

4

Diagram D

- Real time "Air" temperature shows at the left side temperature block (See Diagram D).

- Alarm will be sparkling in red if a measured value exceeds the high limit or below the low limit.

START RECORDING

Diagram E

On-line logging started
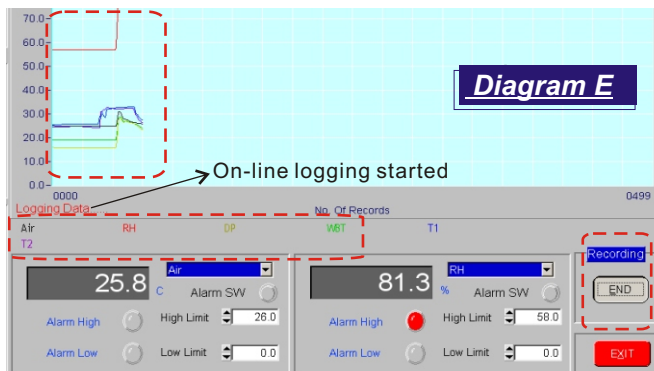
Press START button to active the recording. When starting, the text "Logging Data" will appear on the left corner of the graphic. All parameters will be shown with different color curves. Different color texts show below the chart indicate the meaning of each curve. For example: black curve is Air, red curve is RH......etc.(See Diagram E)

RETRIEVE FILE
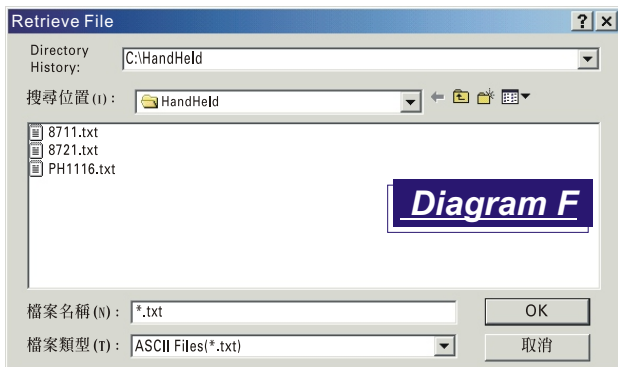
Diagram F

TO OPEN A FILE

1. Clicking " Retrieve File" on the tool bar or press **Alt+R**. You will see Diagram F-1.

2. Double-click the folder that contains the document you want to open. Click the document name, and then click OK.

3. All documents are saved as *.txt file types, no other files type are valid.
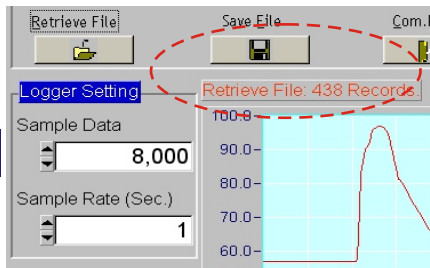
Diagram F-1

SAVE FILE

1. To save a file, clicking " Save File " on the menu bar or press **Alt+F**. You will see Diagram G.
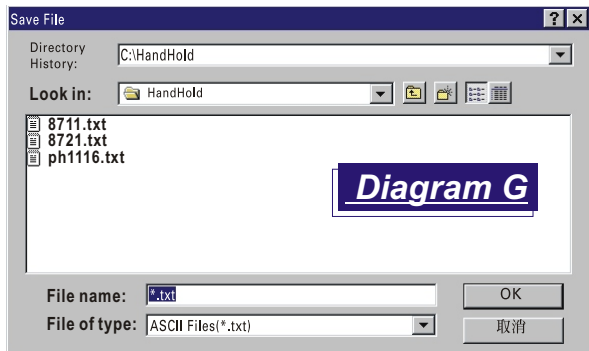

Diagram G

2. You can save the recorded data with a new name by editing a new name in file name block.
3. After saving the file, more statistics or analysis can be done with other programs.

COM. PORT SETTING

✓ Click **"Com. Port"** on the menu bar, or press **Alt + C** simultaneously to enter **Com. Port** setting. (See Diagram G-1)

✓ Set up **RS232** port, Baud rate, Data bits, Parity and Stop bits. See Page 12 to 22 for the details of each meter.

✓ Generally it is **COM1** for PC, others depend on your computer settings. It is up to **COM4** in this program.

✓ Click **"OK"** to save the setting or **"CANCEL"** to exit without saving.

Diagram G-1
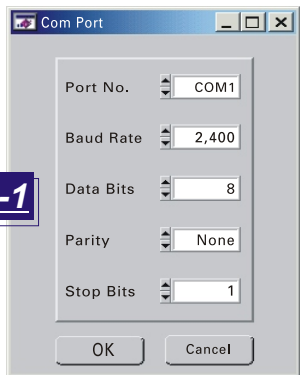
LOGGER SETTING

There are 3 settings at the left side of the screen:
(1)Logger Setting, (2)Dispaly Range and (3)Display Control.

(1)Logger Setting (See Diagram H)

✓Sample data: 2000, 4000, 6000, 8000, 10000 records.

✓Sample rate (Second): 1~3600.

✓If the rate entered is out of the range, an "out of range" chart will appear as Diagram I and show the valid min. & max. values.

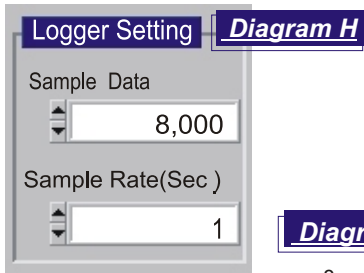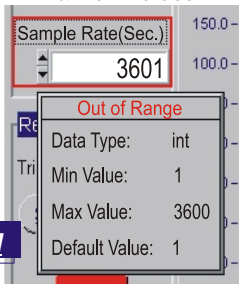

Diagram H

Logger Setting

Sample Data

8,000

Sample Rate(Sec)

1

Diagram I

Sample Rate(Sec.)

3601

Out of Range	
Data Type:	int
Min Value:	1
Max Value:	3600
Default Value:	1

8

(2)Display Range (See Diagram J)

There are 5 ranges: 0.5K(500), 1K, 2K, 5K, 10K for setting the division of the number of reading records shows on the screen.

FOR EXAMPLE : If the screen shows display range indicator on "0.5K". The screen will be showing from 0000 to 0499f for a total 500 records.
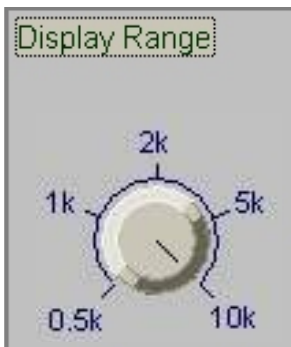
Diagram J
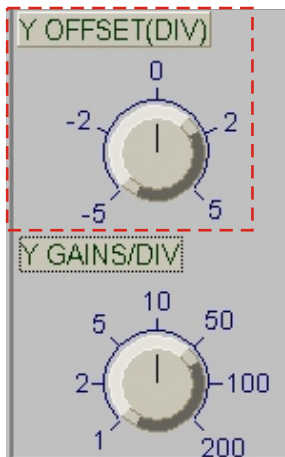
Diagram K

(3)Display Control (Y OFFSET/DIV , Y GAINS/DIV)l

Y OFFSET/DIV

There are 5 ranges : -5, -2, 0, 2, 5 for setting the number of the start reading (See Diagram K)

FOR EXAMPLE: If the screen shows " **Y OFF"** set **as "0"** and "**Y GAIN " as "50"**, Y range will scrolls from "0" ,50,100,150... and rated by "50" basis. (See Diagram L)

9
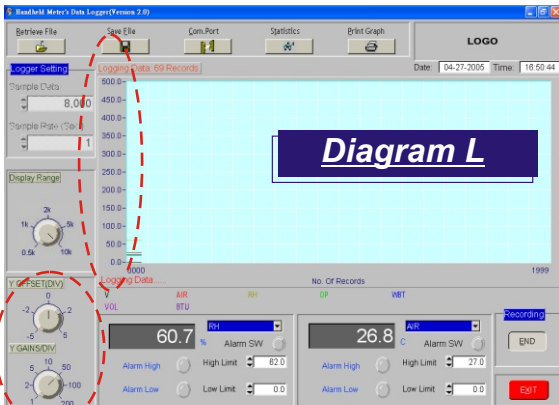
Diagram L

If select **"Y OFF" as "-5"** and **"Y GAIN" as "50"**, Y range will show from "-250", -200, -150, -100, -50, 0, 50, 100,150, 200 and rated by "50" basis. (See Diagram M).
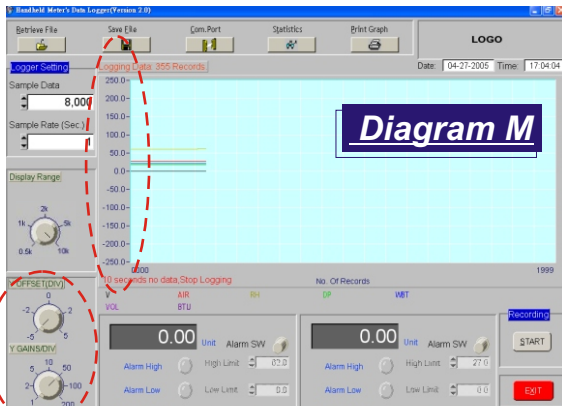
Diagram M

Y GAINS/DIV

   There are 7 ranges : 1, 2, 5, 10, 50, 100, 200, for setting the division of the start reading value. (See Diagram N)

Diagram N
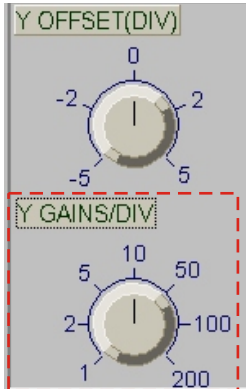
*FOR EXAMPLE***:** If select "**Y OFF" as "0"** and **"Y GAIN" as "100"**, Y range will show from 0,100, 200, 300, 400, 500, 600......1000 rated by 100 basis. (See Diagram 0)

11
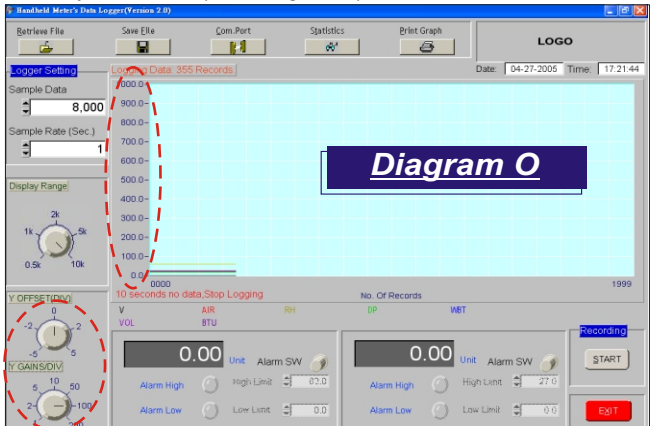
There are different screens show on the next few pages for the examples of different parameters be monitored .

MANOMETER

Pressure value is shown in the left block of the screen, the right block shows Undefined title with no reading. (See Diagram P) For Differential pressure data logging function, the reading is shown at the same block in the left.

The meter's unit can be easily changed. There are 11 units for selection, the unit shows on the software is preselected by the meter.

NOTE: Strongly recommend to reset the display range while changing the unit.

FORMAT:

Baud Rate **: 2,400 bit /sec.**
Data Bits **: 8**
Stop Bit **: 1**
PXXXX(unit)
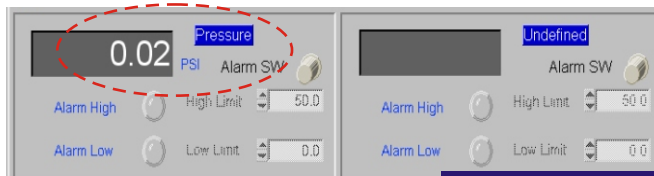
Diagram P

pH / mV METER

The screen shows pH value or mV value in the left side block
Temperature value is shown at the right side block
(See Diagram Q, Q-1)

FORMAT:

Baud Rate **: 2,400 bit /sec.**
Data Bits **: 8**
Stop Bit **: 1**
pXX.XX:tXXX.XC(F)   or   mXXX.XmV:tXXXX.XC(F)
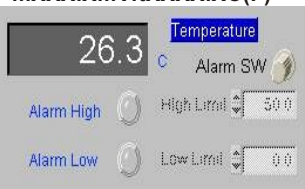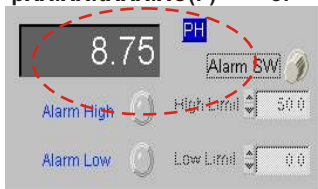
Diagram Q
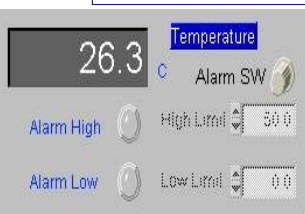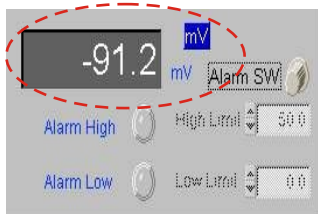
Diagram Q-1

SOUND LEVEL METER

The screen shows Sound Level value in the left block , "**dB**" unit
is shown by the value , "**Undefined** " title at the right side of block
display with no value. (See Diagram R)

FORMAT:

Baud Rate **: 2,400 bit /sec.**
Data Bits **: 8**
Stop Bit   **: 1**
N:XXX.XdB

Diagram R

HYGRO-THERMOMETER

Temperature value (ºC or ºF) is shown in the left block.
Relative Humidity (%) is shown in the right block.

While meter is changing the unit, the software displayed unit will be changed as well. Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram S)

FORMAT:
Baud Rate :**1,200 bit /sec.**
Data Bits **: 7**
Stop Bit **: 1**
TXXX.XC(F):HXX.X%

Diagram S

K.J.T. TYPE & K.J.T.R.S.E. DUAL INPUT THERMOMETER

The screen shows T1 temperature value in the left block and T2 temperature is shown in the right block.

The meter unit can be easily changed the unit at your disposal, If the meter is set in ºC, the data logging will show in ºC. Once you change the meter unit to ºF, the screen unit will be changed to ºF simultaneouly. Recommend to reset the **Display range** at the same time, or you will see a minor chart change on the screen. (See Diagram T)

FORMAT:

Baud Rate **:2,400 bit /sec.**
Data Bits **: 8**
Stop Bit **: 1**
TXXX.XC(F):TXXX.XC(F)
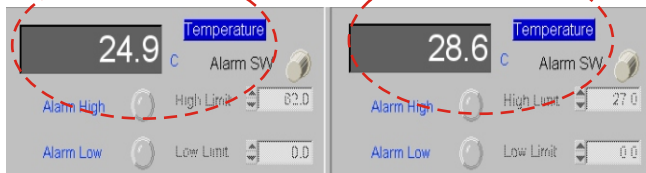
Diagram T

K.J.T. & K.J.T.R.S.E. TYPE SINGLE INPUT THERMOMETER

T1 Temperature value is shown in the left block. No reading is shown in the right block.

The meter unit can be easily changed at your disposal, If the meter unit is set in ºC , the reading will show in ºC. Once you change the meter unit to ºF ,the screen unit will be changed to ºF simultaneouly.

Recommend to reset the Display Control range at the same time, or you will see a minor chart change on the screen.(See Diagram U)

FORMAT:

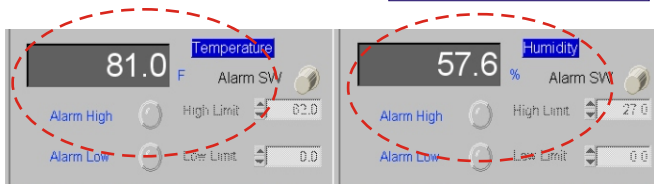Baud Rate :**2,400 bit /sec.**
Data Bits : **8**
Stop Bit : **1**
TXXX.XC(F)

Diagram U

T1 Temperature value is in the left block.
Air Flow (FTM, MPS) is shown in the right block.

The meter unit can be easily changed at your disposal, if the meter unit sets in **°C** , the value will shown with **°C**. Once you change the meter unit to **°F** , the screen unit will be changed to **°F** simultaneouly.

Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram V)

The same condition applied to change the unit between FPM and MPS .

FORMAT:

Baud Rate :**2,400 bit /sec.**
Data Bits **: 8**
Stop Bit   **: 1**
TXXX.XC(F):VXXXXMS(FTM)

Diagram V

18
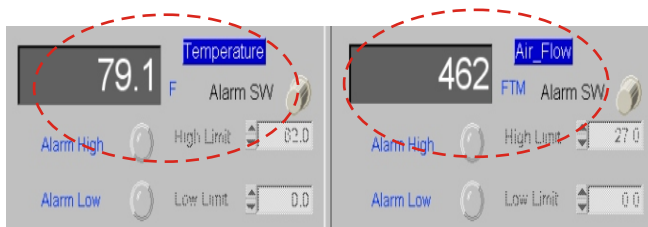
DISSOLVED OXYGEN

There are 5 parameters could be selected on the screen:
2 DO values (related and absolute), Temperature, Pressure and Salinity.

If select DO (%) in left block, the right block will be DO (mg/L) or others.

The meter unit can be easily changed at your disposal, if the meter unit sets in **°C** , the data logging is shown with **°C**. Once you change the meter unit to **°F**, the screen unit will be changed to **°F** simultaneouly.

Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram W)

FORMAT:

Baud Rate **:9,600 bit /sec.**
Data Bits   **: 8**
Stop Bit   **: 1**
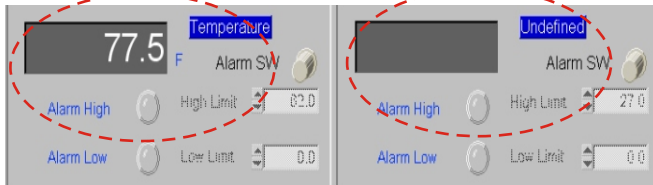**CXX.XXmg/l(ppm):CXX.XX%:TXXX.XC(F):PXXXXmmHg (or XXX.XkPA):SXX.Xppt**

Diagram W
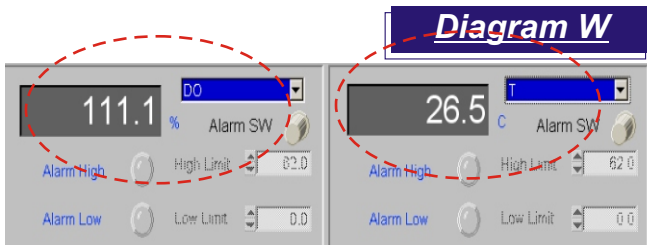
ANEMO-PSYCHROMETER

Total 6 or 7 parameters could be displayed on the monitor:
Velocity, Temperature, RH, DP, WET, VOL & BTU (or no BTU)

If the Velocity (V) is in the left block, the right block will be others.

The meter unit can be easily changed at your disposal, if the meter unit sets in ºC , the data logging value is shown with ºC. Once you change the meter unit to ºF, the screen unit will be changed to ºF simultaneouly.

Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram X)

The same condition applied to change the unit between FPM and MPS .

FORMAT:

Baud Rate :**9,600 bit /sec.**
Data Bits : **8**
Stop Bit : **1**
**VXXX.XMPS(FTM):TXXX.XC(F):HXX.X%:dXXX.XC(F)
:wXXX.XC(F):vXXXXX.XCMM(CFM):UXXXXX.XKW(BTU)**
NOTE: Last parameter is depended on different type of meter.

Diagram X

20
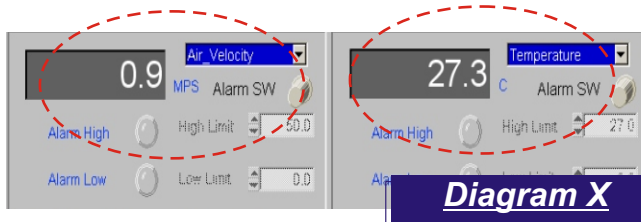
IR PSYCHROMETER

Total 5 parameters could be displayed on the monitor:
Air temp., IR temp., RH, WET and DP.

If the RH is in the right block, the left block will be others.

The meter unit can be easily changed at your disposal, if the meter unit sets in ºC , the data logging value is shown with ºC. Once you change the meter unit to ºF, the screen unit will be changed to ºF simultaneouly.

Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram Y)

FORMAT:

Baud Rate **:9,600 bit /sec.**
Data Bits **: 8**
Stop Bit **: 1**
TXXX.XC(F):TXX.XC(F):HXX.X%:wXXX.XC(F):dXXX.XC(F)

Diagram Y
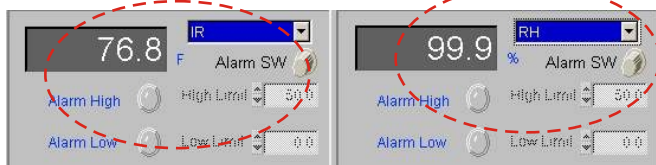
Total 6 parameters could be displayed on the monitor:
Air temp., 1 or 2 external temp., RH, WET and DP.

If the RH is in the right block, the left block will be others.

The meter unit can be easily changed at your disposal, if the meter unit sets in ºC , the data logging value is shown with ºC. Once you change the meter unit to ºF, the screen unit will be changed to ºF simultaneouly.

Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram Z)

FORMAT:

Baud Rate **:9,600 bit /sec.**
Data Bits **: 8**
Stop Bit **: 1**
**TXXX.XC(F):HXX.X%:dXXX.XC(F):wXXX.XC(F):TXXX.XC(F):
TXXX.XC(F)**
NOTE: Last parameter is depended on different type of meter.

Diagram Z

22

CONDUCTIVITY METER

Up to 4 parameters could be displayed on the monitor:
Temp., Conductivity, TDS and Salt. (depended on model number)

If the Temp. is in the right block, the left block will be others.

The meter unit can be easily changed at your disposal, if the meter unit sets in ºC , the data logging value is shown with ºC. Once you change the meter unit to ºF, the screen unit will be changed to ºF simultaneouly.

Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram Z-1)

FORMAT:

Baud Rate **:9,600 bit /sec.**
Data Bits **: 8**
Stop Bit **: 1**
8301:C***. **uS(mS):t***.*C(F) LRCCRLF
8302:C***. **uS(mS):t***.*C(F):D***. **ppm(ppt)LRCCRLF
8303:C***. **uS(mS):t***.*C(F) @****-**-** **:**:**LRCCRLF
8305:C***. **uS(mS):t***.*C(F):D***. **ppm(ppt):
     S***. *pptLRCCRLF
8306:C***. **uS(mS):t***.*C(F):D***. **ppm(ppt):
     S***. *ppt @****-**-** **:**:**LRCCRLF
NOTE: When the measure value error, the format is:ExxNul
xx: stands for error code.

Diagram Z-1

23
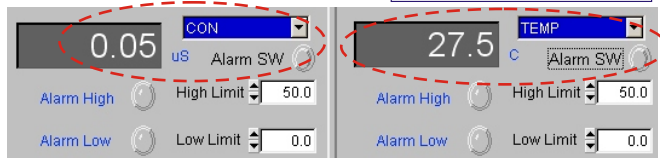
HEAT INDEX CHECKER

Total 4 parameters could be displayed on the monitor:
WBGT, Ta, Tg and relative humidity.

If the Ta is in the right block, the left block will be others.

The meter unit can be easily changed at your disposal, if the meter unit sets in **°C** , the data logging value is shown with **°C**. Once you change the meter unit to **°F**, the screen unit will be changed to **°F** simultaneouly.

Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram Z-2)
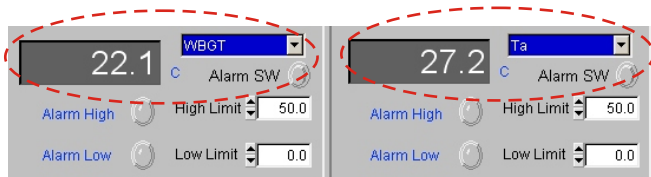
FORMAT:

Baud Rate **:9,600 bit /sec.**
Data Bits **: 8**
Stop Bit **: 1**
Wxxx.xC(F): Txxx.xC(F):Txxx.xC(F): Hxx.x% LRCCRLF

NOTE: The 1st value is WBGT, the 2nd value is Tair,
the 3rd value is Tg, the 4th value isRH.
The x means one of {0|1|2|···|9|-}

Diagram Z-2

BENCHTOP METER

6 parameters could be displayed: pH, mV, Cond., TDS, Salt, and Temperature. However, not all parameters could be display at the same time. The displayed value is depended on benchtop model# and probe.

The meter can be easily programmed. If the meter unit sets in °C, the data logging value is shown with °C. Once changing the unit to °F, the screen unit will be changed to °F simultaneouly. Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram Z-3)

FORMAT:

Baud Rate **:9,600 bit /sec.**   Data Bits **: 8**   Stop Bit **: 1**

-86501/2 &86551/2:
pxx.xxpH: mxx.xxmV: Txxx.xC(F) @2007-04-18 18:48:48LRCCRLF
-86503&86553:
Cxxxx(xx.xx, xxx.x)mS(uS) :Txxx.xC(F) @2007-04-18 18:48:48LRCCRLF
-86504&86554:
pxx.xxpH:mxx.xxmV: Cxxxx(xx.xx, xxx.x)mS(uS) :Txxx.xC(F):Txxx.xC(F)
@2007-04-18 18:48:48LRCCRLF
-86505&86555:
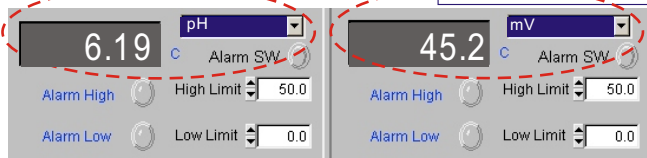pxx.xxNul:mxx.xxmV: Cxxxx(xx.xx, xxx.x)mS(uS) : Dxxxx(xx.xx, xxx.x)ppm(ppt) :
Sxx.xxppt:Txxx.xC(F):Txxx.xC(F) @2007-04-18 18:48:48LRCCRLF

NOTE:
"p" means pH, "m" means mV, "C" means Conductivity,"D" means TDS, "S" means SALT, "T" means temperature.
The x means one of {0|1|2|···|9|-}

Diagram Z-3

CARBON DIOXIDE METER

Up to 5 parameters could be displayed on the monitor:
CO2, Air Temp., RH%, Dew Point Temp. and Wet bulb temperature.

If the CO2 is in the right block, the left block will be others.

The meter unit can be easily changed at your disposal, if the meter unit sets in ℃ , the data logging value is shown with ℃. Once you change the meter unit to ℉, the screen unit will be changed to ℉ simultaneouly.

Recommend to reset the Display Control at the same time, or you will see a minor chart change on the screen. (See Diagram Z-4)

FORMAT:

Baud Rate :**9,600 bit /sec.**
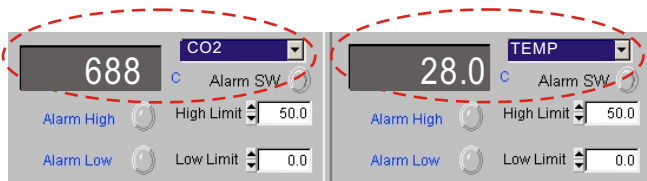Data Bits   : **8**
Stop Bit : **1**
-7752: CXXXXppm:TXXX.XC(F)
-77535 & 7722：CXXXXppm:TXXX.XC(F):HXX.X%:dXXX.XC(F):wXXX.XC(F)

NOTE:
 "C" means CO2, "T" means air temperature, "H" means relative humidity, "d" means dew point temp., "w" means wet bulb temp.
The x means one of {0|1|2|···|9|-}

Diagram Z-4

pH / ORP METER

Up to 3 parameters could be displayed on the monitor:
pH, mV and temperature.

If the pH is in the right block, the left block will be others.

The meter unit can be easily changed at your disposal, if the meter
unit sets in ℃ , the data logging value is shown with ℃. Once you
change the meter unit to ℉, the screen unit will be changed to ℉
simultaneouly.

Recommend to reset the Display Control at the same time, or you
will see a minor chart change on the screen. (See Diagram Z-5)

FORMAT:

Baud Rate **:9,600 bit /sec.**
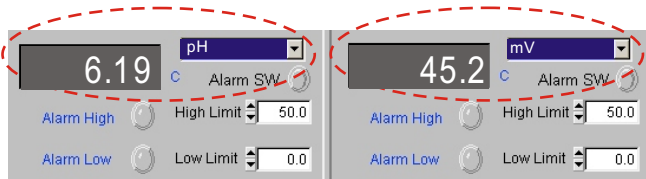Data Bits **: 8**
Stop Bit **: 1**
-8651:pxx.xxpH: mxx.xxmV: Txxx.xC(F) @2007-04-18 18:48:48LRCCRLF
-8551:mxx.xxmV:Txxx.xC(F) @2007-04-18 18:48:48LRCCRLF

NOTE:
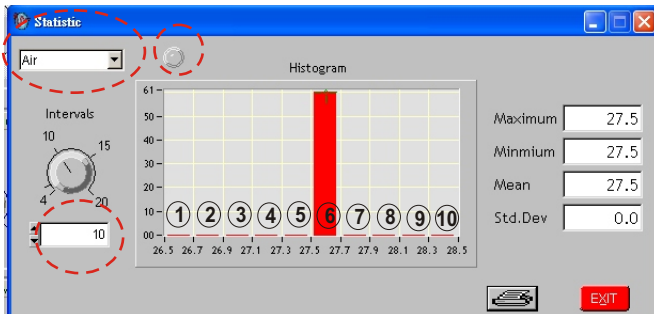"p" means pH, "m" means mV, "T" means temperature.
The x means one of {0|1|2|⋯|9|-}

Diagram Z-5

STATISTICS

Click **"Statistics"** on the menu bar or press **Alt + T** simultaneously to see statistics in histogram format

✓ On the left up corner, you could choose which parameter you want to see its statical data.

✓ The division of data can be set up from 4 divisions to 20 divisions.

✓ Histogram will be automatically changed once you re-set interval.

✓ Maximum, Minimum , Mean and Std. Dev (Standard Deviation) are automatically calculated and shown on the right side of the screen.

✓ The red dot will flash every 10 seconds to indicate the statistical data are in the continuous updating status.

PRINT GRAPH
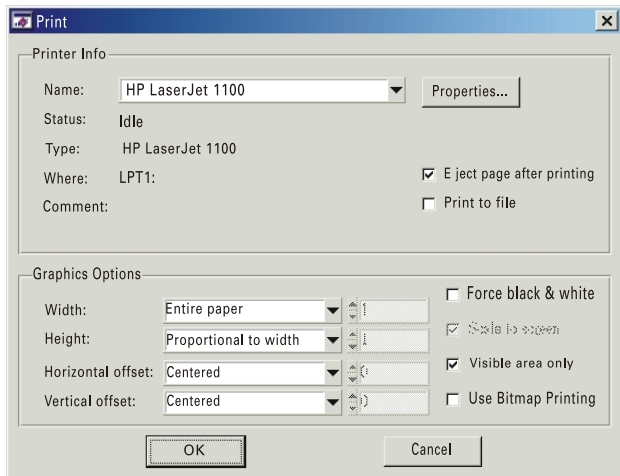
To change printers and printing options:

✓ To click Print Graph on the tool bar. Or press **Alt + P** on the keyboard.

✓ To change printers. Click Properties, then select a printer in name.

✓ To change paper specifications. Select the settings you want in Graphics Options.

PRIVATE LOGO

✓ At the right up corner of the main screen. The software presets the logo of the brand you bought.

✓ If private logo is required (the order quantity should meet the minimum request), to provide a clear logo in color is needed.

HELP

If you have question about the operation, you could click HELP or press Alt+H to open the txt file and find the related content.

WARRANTY

The meter is warranted to be free from defects in material and workmanship for a period of one year from the date of purchase. This warranty covers normal operation and does not cover battery , misuse , abuse , alteration , tampering , neglect , improper maintenance , or damage resulting from leaking batteries . Proof of purchase is required for warranty repairs. Warranty is void if the meter has been opened.

Accuracy, the Zenith of
<u>Measuring / Testing Instruments !</u>

Hygrometer/Psychrometer
Thermometer
Anemometer
Sound Level Meter
Air Flow meter
Infrared Thermometer
K type Thermometer
K.J.T. type Thermometer
K.J.T.R.S.E. type Thermometer
pH Meter
Conductivity Meter
T.D.S. Meter
D.O. Meter
Saccharimeter
Manometer
Tacho Meter
Lux / Light Meter
Moisture Meter
Data logger
Temp./RH transmitter
Wireless Transmitter ....

More products available !

2009.04 R