

OPERATION MANUAL

MULTI-FUNCTION DATALOGGER WITH PRINTER MULTI-FUNCTION DATALOGGER WITHOUT PRINTER



WITH
PRINTER

9811	9882	9832
9812	9851	9833
9861	9680	9835
9871	9831	
9881	98315	

WITHOUT
PRINTER

9611	9682	9632
9612	9651	9633
9661	9660	9635
9671	9631	
9681	96315	



INDEX

<u>Introduction</u>	1
<u>Material Supplied</u>	1
<u>Features</u>	1
<u>Comparison table</u>	2
<u>Meter keypad - with printer</u>	5
<u>Meter keypad - without printer</u>	6
<u>Accessory photo</u>	7
<u>Top cover of meter</u>	8
<u>Meter setting</u>	10
Single measurement	11
Multiple measurement	12
Automatic logging	13
<u>Diagram</u>	
9811/9611/9812/9612 IR thermometer	14
9871/9671 Anemometer +Psychrometer	20
9881/9882/9681/9682 Thermometer	22
9861/9661 pH/mV Meter	24
9680/9660 IrDA Receiver	30
983X /963X Manometers	35
9851 /9651 Hygo-thermometer	40
<u>Software</u>	
File	44
Mode	45
Port	46
Commad	46
Print	47
<u>Specification sheet</u>	48
<u>Trouble shooting</u>	51

INTRODUCTION

Thank you for purchasing this multiple function printer! This unit has been developed to meet your max. satisfaction by its user-friendly design. Please review the entire manual for a complete overview of how to operate this meter.

MATERIAL SUPPLIED

Check for damaged or missing parts in your meter before starting. The complete meter set should contain :

1. Meter
2. 4pcs AA batteries
3. Printing Thermo-paper (For printer models only)
4. Operation manual
5. Carry Case
6. PH probe & calibration solution (for 9861/9661) or fan (for 9871/9671) or K Type thermo couple (for 9881&9882/9681& 9682) or RH probe (for 9851/9651) or tube (for manometer meters)
7. RS232 cable
8. Software CD

Features

This meter designed with three measurement modes:

- 1) Single point measurement
 - 2) Multiple points measurement (Manually record)
 - 3) Automatically Logging
- Measuring/ProgrammingAnywhere, anytime
 - User friendly interface
 - RS232 cable and software enable to link with PC to download & upload
 - Backlight function
 - Tripod mountable for long time use
 - Power off time selectable
 - Big Dot matrix LCD
 - Powered by 4pcs AA (98X1) or AAA (96X1) batteries or 9V adaptor
 - Printing anywhere, anytime (with printer models)

COMPARISON TABLE

Measured parameters of each meter:

MODEL	FUNCTION	PARAMETERS
9811/9611 9812/9612	IR Thermometer IR + external probe Meter	Temperature
9861/9661	pH meter	pH value, Voltage Temperature
9871/9871	Anemometer	Velocity, Humidity Temperature Wet Bulb, Air Volume
9881/9681 9882/9682	Dual K Type Thermometer Dual K.J.T.R.S E Type Thermometer	Temperature Temperature Diff.
9851/9651	Hygro-thermometer	Temperature, DP Humidity, Wet Bulb
9832/9632 9835/9635 98315/96315 9833/9633 9831/9631	+/- 2 psi Mamometer +/- 5 psi Mamometer +/- 15 psi Mamometer +/- 30 psi Mamometer +/- 100 psi Mamometer	Pressure Differential
9680/9680	IrDA receiver	Compatible with AZ IrDA products

Please refer to below for the difference of each measurement mode.

MEASUREMENT	DESCRIPTION	MEMORY POINT
Single Point Measurement	Single point measurement	No Memory
Multiple Point Measurement	File name editable multiple point measurement	99 points
Automatic Logging	Programmable datalogging function	12000 points(9811/9611) 6000 points (9812/9612) 4000 points(9861/9661) 2400 points(9871/9671) 4000 points(9881/9681) 4000 points(9882/9682) 3000 points(9851/9651) 12000 points(9832/9632) 12000 points(9835/9635) 12000 points(98315/96315) 12000 points(9833/9633) 12000 points(9831/9631) 12000 points(9680/9660) (At most)

Comparison table of multiple points and datalogging measurements

	MULTIPLE POINT MEASUREMENT	DATALOGGING
RECORD	99 points	At most 12000 points (<u>Note 4</u>)
FILE NAME	Editable or Default with date and time (<u>Note 1</u>)	Default (<u>Note 2</u>)
MEASURING / SAMPLING	Press "ON/OFF" key to measure and store by pressing specified keys	Automatically measure and store according to pre-set parameters (<u>Note 3</u>)

Note 1: Each record is designed to show with current date and time if user doesn't edit any.

For example : if the file name is "05-06 09:21:51" means the date is 6th May (or 5th June, based on your data mode setting) and the time is 09:21:51.

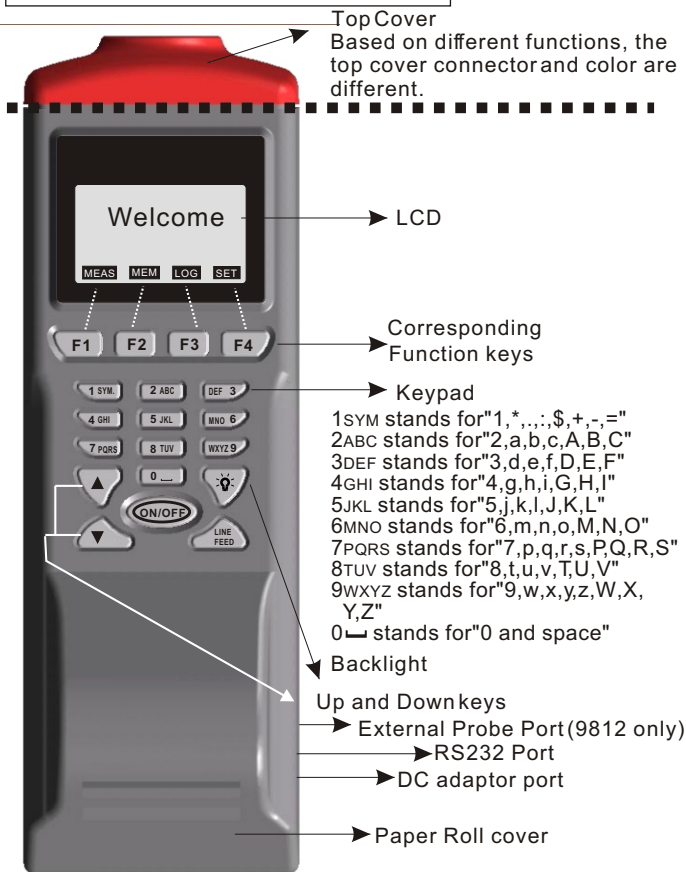
Note 2: Each record is designed to show with the current date and time.

- Note 3: a) To set up Begin-Date, Start-Time, End-Date, Suspend-time and sample rate from the meter.
 b) Each meter starts to record from Begin-Date & time with specified sample rate until Suspend-time.
 c) Automatically start again next day from Start-Time until End-Date.
 d) Logging stops recording when End-Date or max. memory points is achieved.
 e) Logging can be stopped and start again with the same setting.

Note 4: The total logging memory size is 12000 points, different available parameters for each meter:

Ex: 9871 has 5 parameters, the total logging record is 12000 .i.e. Each parameter's capacity is 2400.

METER KEYPAD-WITH PRINTER



METER KEYPAD-WITHOUT PRINTER

METER KEYPAD

Top Cover
Based on diff. functions,
the top cover connector
and color are different.


Big dot
matrix LCD

**Corresponding
Function keys**

Press F1~
F4 key to select
the needed
function

To view
previous
/next record

Keypad

1SYM stands for "1, *, ., :, \$, +, -, ="
2ABC stands for "2, a, b, c, A, B, C"
3DEF stands for "3, d, e, f, D, E, F"
4GHI stands for "4, g, h, i, G, H, I"
5JKL stands for "5, j, k, l, J, K, L"
6MNO stands for "6, m, n, o, M, N, O"
7PQRS stands for "7, p, q, r, s, P, Q, R, S"
8TUV stands for "8, t, u, v, T, U, V"
9WXYZ stands for "9, w, x, y, z, W, X,
Y, Z"
0  stands for "0 and space"

Backlight

External Probe Port
(9612 only)

RS232 Port

DC adaptor port



ACCESSORY

9871
9671



The temperature and humidity sensors are built in the fan, so remember to rotate the cover before using to get accurate reading.

pH connector Temp. connector

9861
9661



When first time using or the probe hasn't been used for a long time, please calibrate the probe first by following the procedure in page 20.

Please always keep the pH glass bulb wet by using the cap to protect and store the electrode.

Always rinse the pH electrode in de-ionized water or rinse solution (tap water.....) before next use.

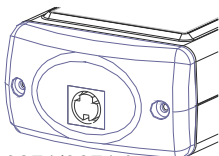
9881/9882/9681/9682



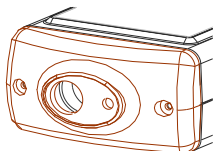
9881/9882 both are dual-input thermometers. Please plug the thermocouple probe into the top cover with correct polarity "+" / "-" and T1/T2 symbols.

TOP COVER -CONNECTOR

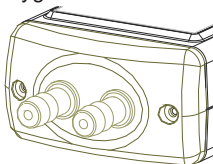
The following illustrations are the connectors for different printers:



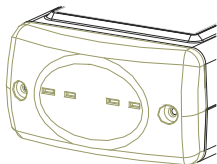
9871/9671 Anemometer
9851/9651
Hygro-thermometer



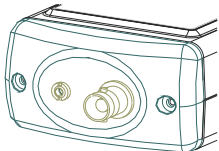
9811/9812/9611/9612
Infrared Thermometer



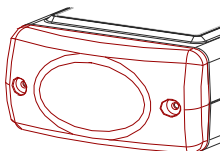
9832/9835/98315/9833/9831
9632/9635/96315/9633/9631
Manometer



9881/9681 K Thermometer
9882/9682 KJTRSE thermometer



9861/9661 pH meter



9680/9660 IrDA printer

REMARKS:

Welcome any OEM for different kind of parameters .

9821 Sound Level Meter connector's illustration is provided when require .

9680/9660 IrDA RECEIVING METER

An IrDA like module is built in the meter 9680/9660 at the top, better target the IrDA within 30 degree angle toward any of AZ IrDA meters for receiving data.

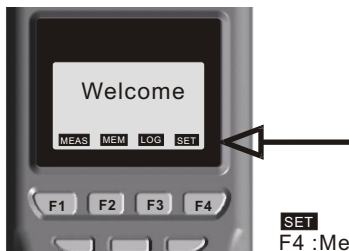
Make sure you have disabled Auto power off from both AZ IrDA meter (transmitter) and IrDA receiver when you need to have long-term measurement.



METER SETTING

Before measuring, please check the meter setting first to confirm the basic settings of the meter are what you need.

To enter each command, just press the corresponding F1 to F4 key.



SET
F4 : Meter Setting

- Pressing ▲ or ▼ key to shift the cursor.
- Pressing EDIT to enter modification mode.
- Pressing PRN to enter printing mode.
- Pressing NEXT/BACK to enter next or previous page.
- Pressing EXIT to return to main menu

Descriptions :

- LCD Cont.(1-5): LCD brightness. From darkest 1 to brightest 5
- Prn Cont. (1-9): Printing darkness. From lightest 1 to heaviest 9
- Unit: The unit could be metric or imperial / °C or °F
- Auto Off: The selectable time frame is 1 to 20 min.
- Set Clock: To choose the date mode and set your local time.
Date mode: MM-DD-YY or DD-MM-YY or YY-MM-DD
- Set ID: If choose "Disable", the ID will not be printed out.
- ID: To edit an ID of this printer , the ID will be printed out at printing mode.
- Select item: To select which measured parameters need to be showed on the LCD. The unit of each parameter could be selected from here as well.

SINGLE MEASUREMENT

There are three measurement modes :

1. Single measurement(MEAS)
2. Multiple measurement(MEM)and 3.Auto logging (LOG).

Operating the single measurement as a general meter.

MEAS

F1 :Single Measurement



Definition

- Press ON/OFF key to measure the temperature for 9811 and 9611(No printer function).
Press F1 (MEAS) to proceed single measurement for other meters .
On 9812/9612, the external probe temp. is displayed on LCD once the probe is plugged.
- After entering measurement mode , press F4 (PRN) to enter printing mode. The printing can be stopped any time by press F1(STOP or EXIT) key while it is printing .
- The printing contrast can be changed by pressing HIGH or LOW key .
- PH & external probe calibration mode introduction are in the mode of Single measurement .

MULTIPLE MEASUREMENT

This is to manually record what you measured with real time , and file name (a note or identification for the record)is editable to memorize or recognize .

There are total 99 memorize capacities in this measurement.

MEM

F2 :Multiple measurement



Definition

- Press ON/OFF (IR models 9811/9611/9812/9612) or MEAS (other models) to measure the parameters.
- Select F1(ABORT) or F4(SAVE) to exit the measurement or memory the record .
- Press F3 (Edit) to edit the file name of recorded value .
While editing the file name, select from the keys 1SYM, 2ABC, 3DEF, 4GHI...., Press and hold one of the key to select from the displayed letters by releasing the key .
- Press CLR shortly to delete one data or press for over 2 seconds to delete the whole memory.
- Before printing, select the printing range by pressing EDIT key, then press START to print.

AUTOMATIC LOGGING

This is to automatically record what you set up before measurement with real time, first to set records start/stop date and time, sample rate, memory points. The screen content shows Expect memory points and Remain memory points while in setting.

LOG

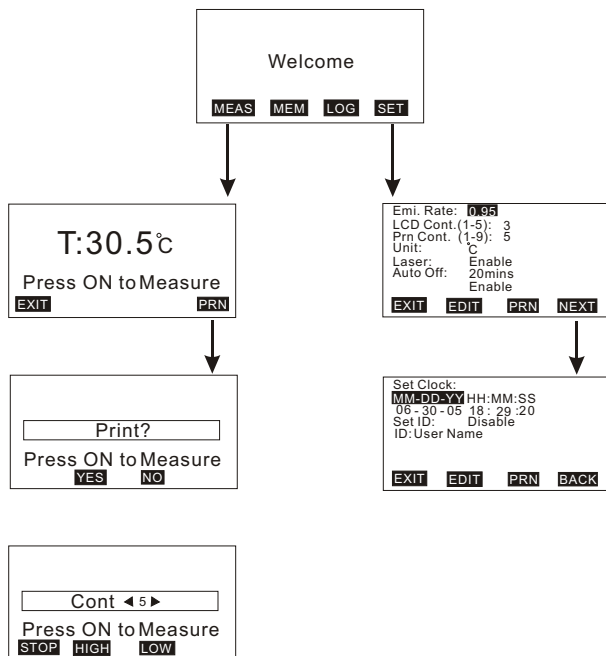
F3 :Datalogging



Definition

- Press SET to set needed setting first. The Date mode is based on the mode you set under SET (see page 10). The sampling rate is from 1 to 7200 seconds. "Expect" means total memory of this meter, "Remain" means how many memory left in meter.
- Press START to begin the logging function. While logging: Press VIEW to see the data (more than one) in the screen, or press MEAS to see a real-time data, or press STOP to quit logging.
- Press P-PG or N-PG to review previous or next 100 points. After stopping, press START to begin again. The sampling rate and previous record are remained if the previous setting has not been changed.
- "Suspend" is the stop time of each day during setting date. If you want to record 24 hours a day, you have to set : 00:00:00 as "Start", and 23:59:59 as "Suspend".

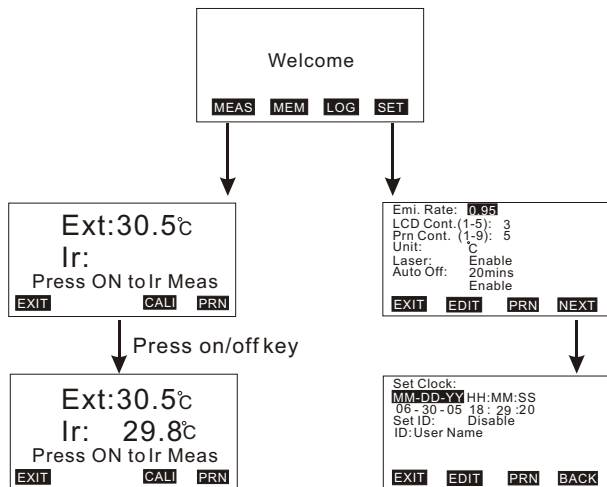
9811/9611 Infrared thermometer Setting / Single measurement



Remarks:

- 1.No PRN function is existing for model 9611 IR meter.
- 2.Emi. Rate: Emissivity. The range is 0.30 to 1.00
- 3.Laser: To enable or disable laser targeting. While in single /multiple measurement, user could also press ON/OFF + F3 buttons to power on /off the laser.

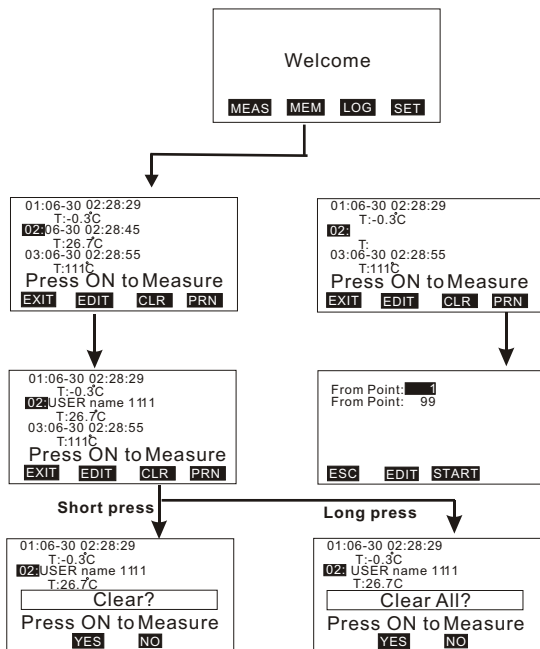
9812/9612 IR meterw/ probe Setting/ Single measurement



Remarks:

- 1.No PRN function is existing for model 9612 IR meter.
- 2.Emi. Rate: Emissivity. The range is 0.30 to 1.00
- 3.Laser: To enable or disable laser targeting. While in single /multiple measurement, user could also press ON/OFF + F3 buttons to power on /off the laser.
4. See page 19 for the external probe calibration.

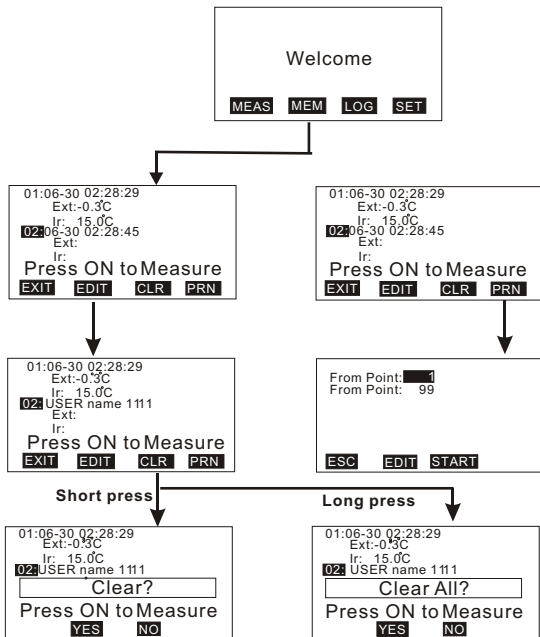
9811/9611 Infrared thermometer Multiple measurement



Remarks:

- 1.No PRN function is existing for model 9611 IR meter.
- 2.Short press CLR to clear the highlighted value and file name. Long press CLR to clear all the data (values and file names) in the meter. Make sure by pressing YES ,or you won't be able to recall any data anymore .

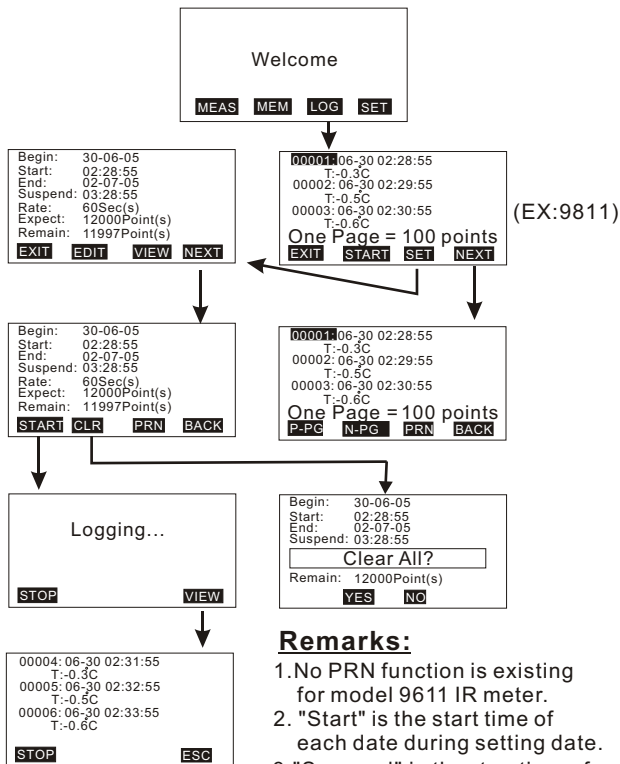
9812/9612 Infrared thermometer Multiple measurement



Remarks:

- 1.No PRN function is existing for model 9612 IR meter.
2. If the probe is not plugged, press ON/OFF key to get IR temp.
If the probe is plugged, press MEAS to get external probe only
or press ON/OFF key to get both IR and external temperature.
- 3.Short press CLR to clear the highlighted value and file name. Long press CLR to clear all the data (values and file names) in the meter. Make sure before pressing YES,or you won't be able to recall any data back anymore .

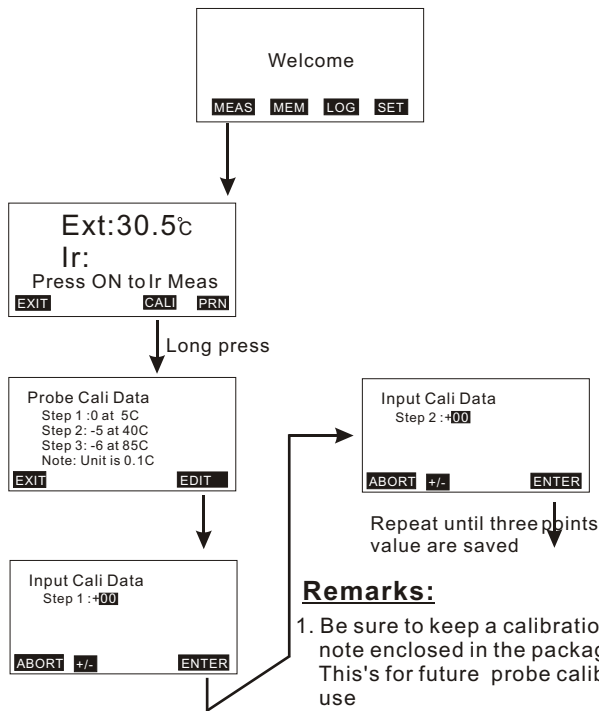
9811/9611/9812/9612 IR Thermometer Datalogging measurement



Remarks:

- 1.No PRN function is existing for model 9611 IR meter.
2. "Start" is the start time of each date during setting date.
3. "Suspend" is the stop time of each date during setting date.If you want to record 24 hours a day, you have to set : 00:00:00 as "Start" ,and 23:59:59 as "Suspend" .
- 4."Begin" is the start date of automatically recording.
- 5."End" is the stop date of datalogging.
6. Ext. is valid for model #9812 & 9612.

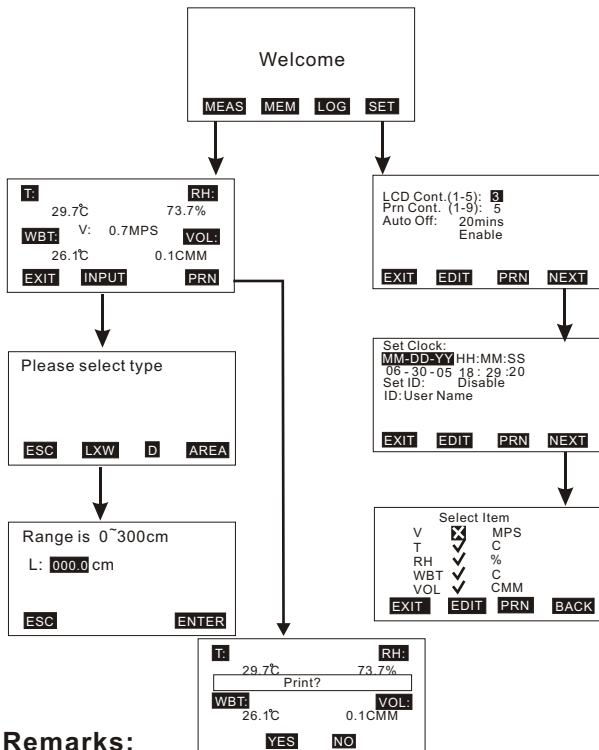
9812/9612 External Temp. Probe Calibration procedure



Remarks:

1. Be sure to keep a calibration note enclosed in the package. This's for future probe calibration use
2. While input the calibration value, refer to the value indicated on the note. There are three values for different temperature. The value is unique for each probe.
3. To exit manual calibration mode, long press F1 anytime to exit.
4. +/- of the calibration means positive value or negative value.
5. Use 10 number keys of the meter to input the calibration value.

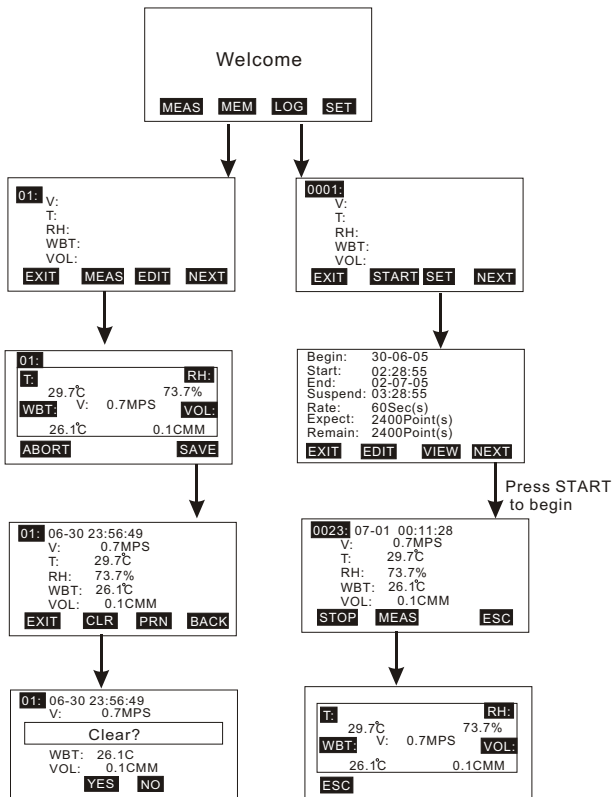
9871/9671 Anemometer+Psychrometer Setting/Single measurement



Remarks:

1. To calculate Air Volume, first input the value of the Air source area. There are three choices: length x width (Rectangle), Diameter (Round) and Area (Input the most accurate value).
2. The available range is shown on the LCD to remind user.
3. Rectangle and round setting range: 0~300cm or 0~110inch
Outlet area setting range: 0~90000sq.cm or 13000 sq.inch.
4. Printing function is not available for 9671.

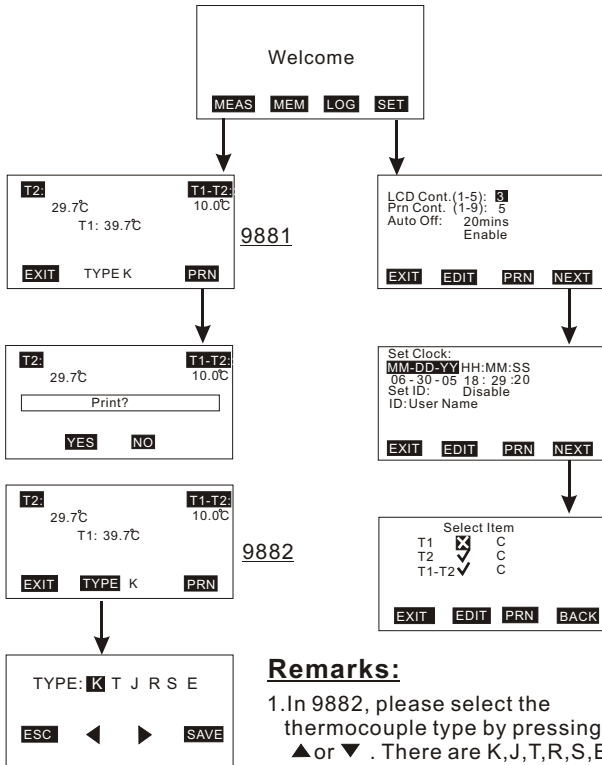
9871/9671 Anemometer+Psychrometer Multiple meas/Datalogging



Remarks:

1. No PRN function is existing for model 9671 meter.
2. "Select Item": There are 2,400 points for each item, press EDIT to cancel the item you don't want to record. Meter will only record the items you checked off.

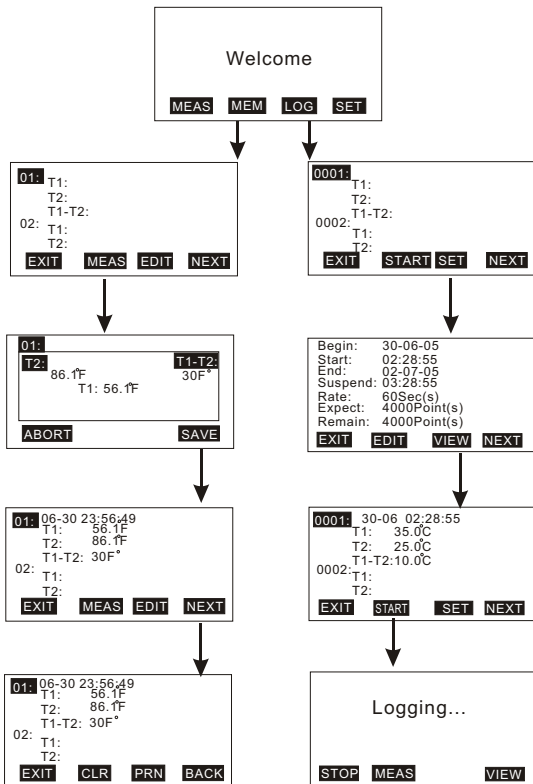
9881/9882/9681/9682 Thermometer Setting/Single measurement



Remarks:

1. In 9882, please select the thermocouple type by pressing ▲ or ▼. There are K, J, T, R, S, E. for selection.
2. T1 and T2 need to be the same type, i.e. K and K, or E and E type.
3. Printing function is not available for 9681/9682

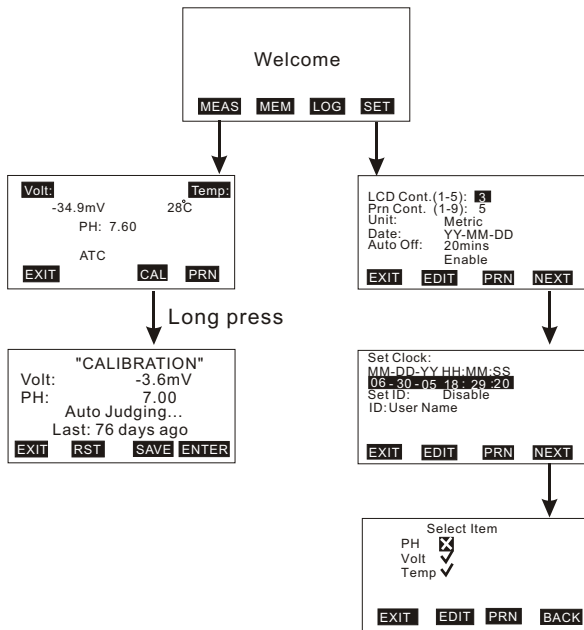
9881/9882/9681/9682 Thermometer Multiple measurement /Data logging



Remarks:

- 1.No PRN function is existing for 9681/9682 meters.
- 2.While logging, press MEAS , you will see a real-time data , press VIEW , you will see the logging status and values. Press ESC if you don't want to stop logging.

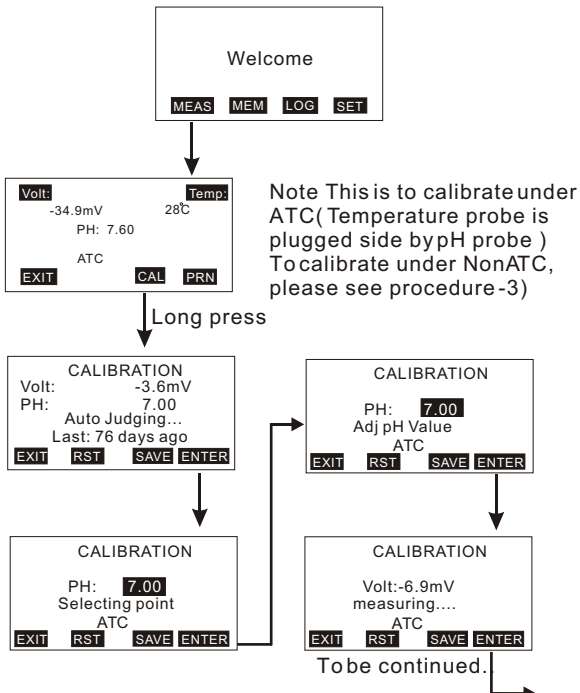
9861/9661 pH/mV Setting/ Single measurement



Remarks:

- 1.No PRN function is existing for model 9661 meter.
- 2.Press CAL to enter calibration mode , "Auto judging...Last xx days " means it has been xx days after the last calibration .
- 3.If you see a minus days "...- xx days " means you haven't set the real time. Set real time from the main screen page.
- 4.Calibration is necessary and should be done regularly, recommend everyday if the meter is used often.
- 5.Meter features automatic buffer recognition to avoid errors.

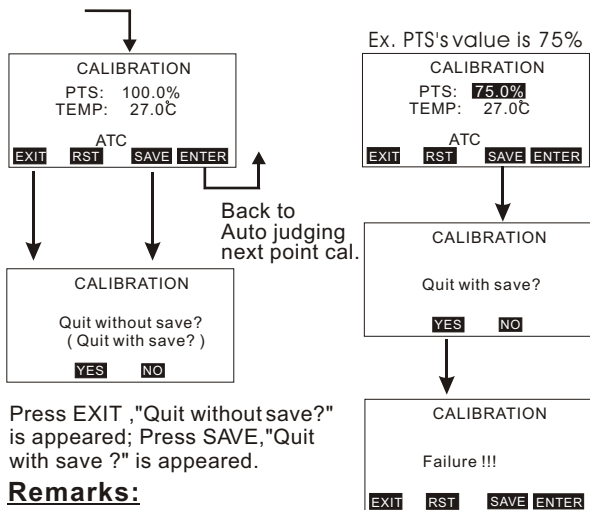
9861/9661 pH/mV Probe Calibration procedure-1



1. PTS means the sensitivity of the probe, the acceptable slope of electrode range is 85% to 105%, please change the probe to get correct reading.
2. The meter is capable of calibrating up to 5 points using USA or NIST pH buffer standard. There are 1.68-4-7-10-12.45 five points for selection.
3. It is recommended that you start with first buffer at 7.00 pH . The meter may select pH buffer value by pressing ▲ or ▼ to calibrate with correct calibration value. ± 0.5 of the selected range.

9861/9661 pH/mV Probe Calibration procedure-2

Continuing from last page

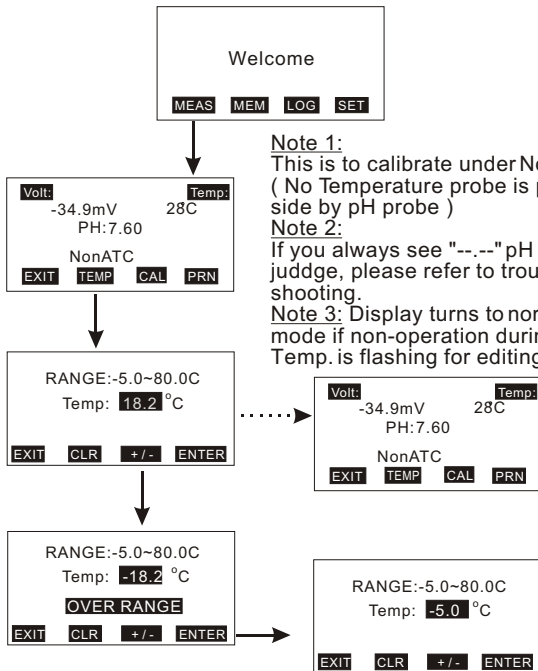


Press EXIT, "Quit without save?" is appeared; Press SAVE, "Quit with save ?" is appeared.

Remarks:

1. When you see "PTS:xx.x% , TEMP: xx.x°C" shows on the screen , that means the calibration of the point is done . Press Enter to next calibration point or SAVE to stop cal and store the calibration value .
2. You will see "Failure !!!" after you press YES to try to save an unacceptable PTS range after calibration. Under "Failure!!!", press EXIT to exit calibration mode , or press RST to normal mode (seeremark 3 for the details) . Inactivate when pressing SAVE or ENTER after "Failure!!!" is appeared.
3. RST stands for Reset , while proceeding any step, you may stop calibration by pressing RST (F2) to back to default setting.

9861/9661 pH/mV Probe Calibration procedure-3



Note 1:

This is to calibrate under NonATC (No Temperature probe is plugged side by pH probe)

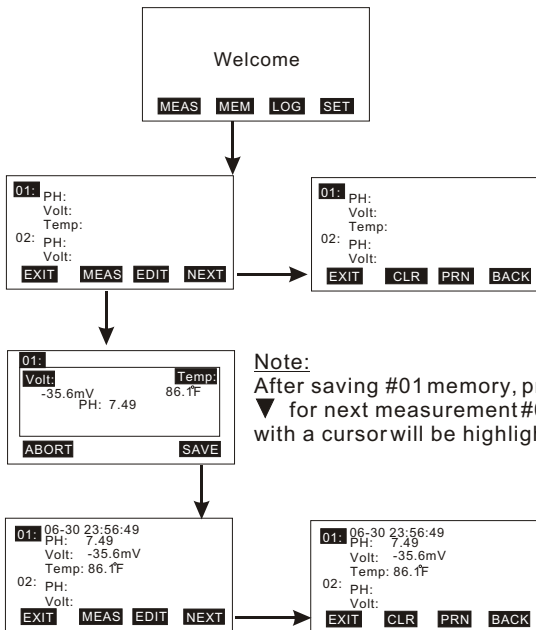
Note 2:

If you always see "---" pH in auto-judge, please refer to trouble shooting.

Note 3: Display turns to normal mode if non-operation during Temp. is flashing for editing.

1. The meter is capable of adjusting temperature value to get more accurate reading .
2. The adjustable temperature range is from -5°C to 80°C, enter a value out of the range, "OVER RANGE" will show on the screen under Temp. Press ENTER under over range ,TEMP will show a default "-5°C".
3. "+/-" key is for changing positive value to negative value.

9861/9661 pH/mV Multiple measurement



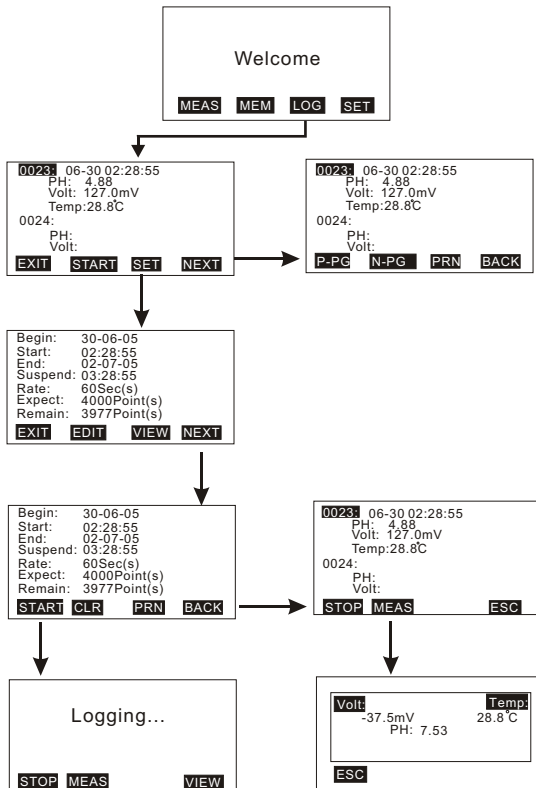
Note:

After saving #01 memory, press ▼ for next measurement #02 with a cursor will be highlighted.

Remarks:

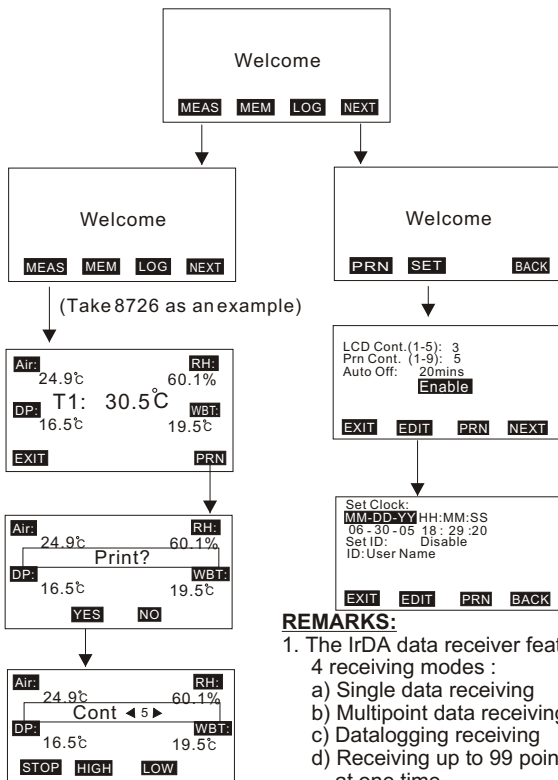
- 1.No PRN function is existing for model 9661 meter.
- 2.Press MEAS to see a real-time measurement values, then press ABORT without saving , press SAVE to store.

9861/9661 pH/mV Datalogging



- 1.No PRN function is existing for model 9661 meter.
- 2.Before logging , make sure you have set up the parameters by pressing SET key , or you will see a blank data .

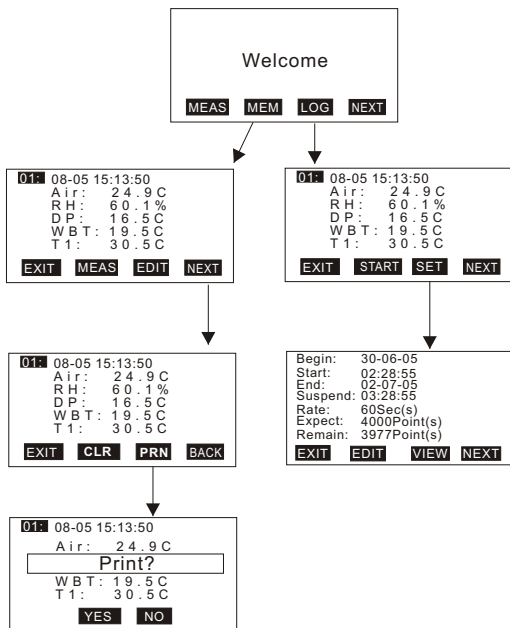
9680/9660 IrDA Setting and Single Data Receiving



REMARKS:

1. The IrDA data receiver features 4 receiving modes :
 - a) Single data receiving
 - b) Multipoint data receiving
 - c) Datalogging receiving
 - d) Receiving up to 99 points at one time
2. The IrDA data receiver may receive any AZ IrDA meters through any of 4 receiving modes.
3. Set ID : Enable (print with ID) or Disable (print without ID)
4. ID :The identification of the meter .
5. Above 8726 meter is an IrDA Psychrometer for example.

9680/9660 IrDA Multiple and Dataloggingdata Receiving



REMARKS:

1. The IrDA meter features transmitting data every second though there might haven't set from IrDA Receiver 9680 yet.
2. Once IrDA Receiver 9680 or 9660 is activated, users manually receives data from single measurement, then print the data (if needed) ; or manually receives multiple data by pressing MEAS key and SAVE for later printing; or automatically received data by pre-setting.

9680 Receiving & Printing up to 99 points at one time

Welcome

MEAS MEM LOG NEXT

Welcome

PRN SET BACK

Expect: 99
Received: 0
Remain: 99

EXIT

After receiving data from IrDA meter

Expect: 99
Received: 31
Remain: 68

EXIT

Automatically start to print

Cont ◀ 5 ▶

STOP HIGH LOW



IrDA meter
example: 8726
Psychrometer



REMARKS:

1. To set the IrDA meter at printing mode otherwise above procedure could not be processed. Please refer to the manual of each IrDA meter for the detail printing mode setting method.
2. This function is not available for 9660.

9680/9660 IrDA Multiple data Receiving with IrDA meters

There is no problem for single data transmitted from IrDA meter to IrDA receiver even you change the meter frequently. However it might happen "Inconsistent" if you try to change the IrDA meters from one model to the other model during the Multiple and Datalogging IrDA receiving.

No IrDA meter is targeting to the IrDA data receiver.

(Press MEAS w/o IrDA meter)

RH :	DP :
Air : -----	
WBT :	T 1 :
EXIT	PRN

(Press MEM w/o IrDA meter)

01:	Air :
	RH :
	DP :
	WBT :
	T 1 :
EXIT	MEAS
EDIT	NEXT

Take 8726 as an example

01:	08-05 15:13:50
	Air : 24.9 C
	RH : 60.1 %
	DP : 16.5 C
	WBT : 19.5 C
	T 1 : 30.5 C
EXIT	MEAS
EDIT	NEXT

Press
MEAS

01:	RH :	DP :
	60.1%	16.5C
	Air : 24.9 C	
	WBT :	T 1 :
	19.5C	30.5C
ABORT	SAVE	

Change with different IrDA meters

↓, press MEAS.

01:	
Meter is inconsistent , press F3 SYNC	
ABORT	SYNC

Press
SYNC

01:	
Clearing.....	
ABORT	SYNC

Wait for few
seconds

01:	RH :	DP :
	56.5%	15.5C
	Air : 24.9 C	
	WBT :	T 1 :
	18.0C	28.5C
ABORT	SAVE	

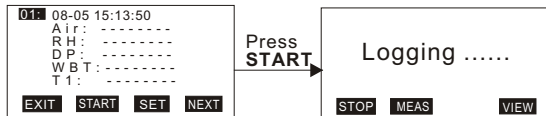
Wait for few
seconds

01:
SYNC
ABORT

Above is the new IrDA meter's reading , it appears automatically after SYNC...(In synchronizing)

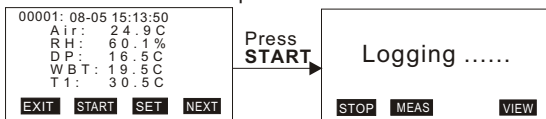
9680/9660 IrDA Datalogging Receiving with IrDA meters

No IrDA meter is targeting to the 9680/9660 data receiver.
(Press LOG w/o IrDA meter)

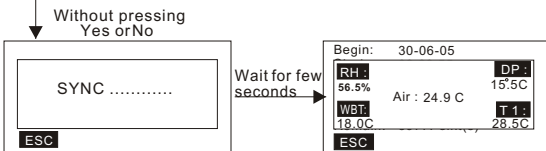
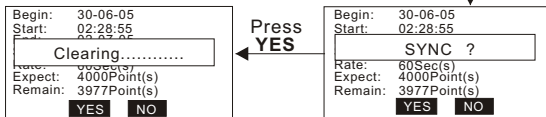
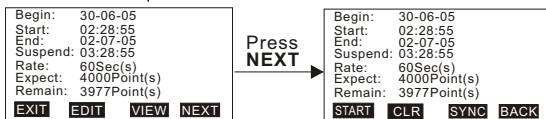


Though you might not target 9680 to an IrDA meter yet, when you press **START(F2)**, Logging will still be activated. The IrDA receiver is proceeding receiving per presetting sampling time.

Take 8726 as an example

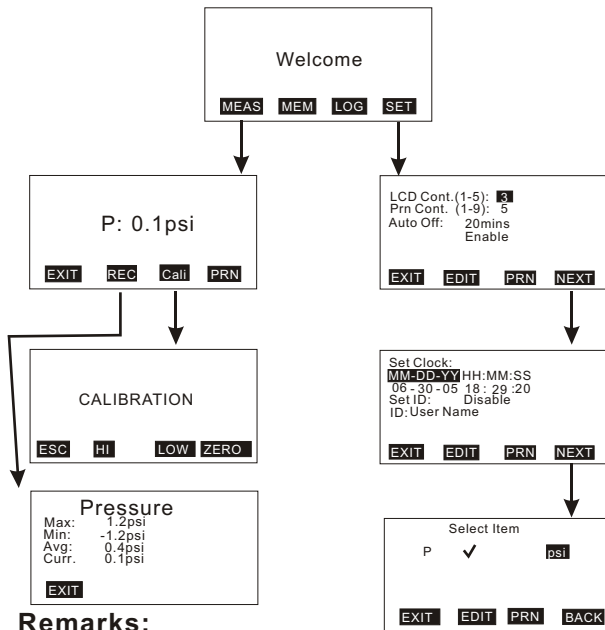


Change with different IrDA meters
↓, press SET.



Press ESC to finish SET then press START to log.

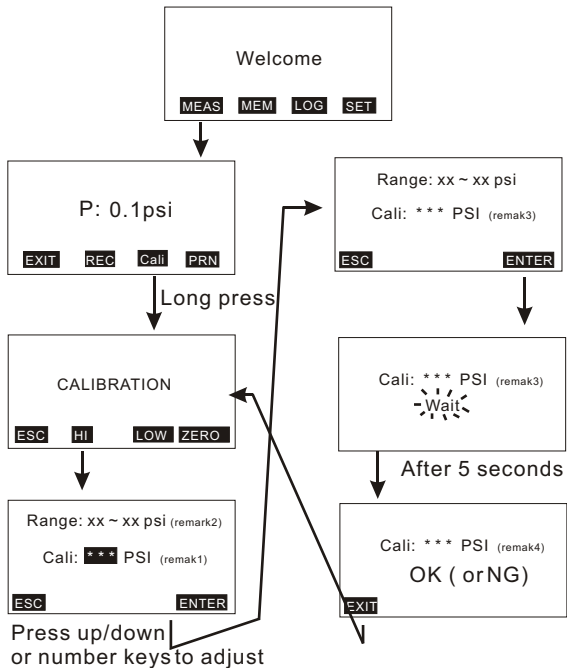
983X /963X Manometers Setting / Single measurement



Remarks:

- 1.No PRN function is existing for model 963X manometer meter.
- 2.Press CAL to enter calibration mode. See Page36 for the details
- 3.Under the " REC" function. Curr. means the current value.
- 4.There are total 11 units could be selected under SET function.
The selectable units are psi/Inch of H2O/bar/mbar/mm of Hg/
Inch of Hg/oz/inch2/Kg/cm2/kPa/Ft of H2O/cm of H2O

983X / 963X Manometer Calibration Procedure



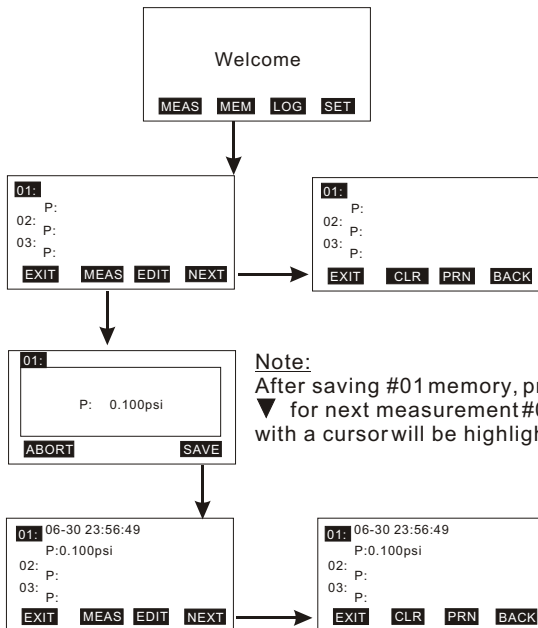
1. There are up to three calibration points. Please refer to below list:

Models	psi range	Cali.(HI)	Cali. (LOW)	Adjustable Range(psi)
9832/9632	0~+/-2psi	1.600psi	-1.600psi	1.400~1.800 / -1.400~-1.800
9835/9635	0~+/-5psi	4.000psi	-4.000psi	3.500~4.500 / -3.500~-4.500
98315/96315	0~+/-15psi	12.00psi	-12.00psi	10.50~13.50 / -10.50~-13.50
9833/9633	0~+/-30psi	24.00psi	-24.00psi	21.00~27.00 / -21.00~-27.00
9831/9631	0~+/-100psi	80.00psi	-80.00psi	70.00~90.00 / -70.00~-90.00

While in calibration HI mode, the default HI value will be displayed on LCD as 1.600 or 4.000... based on different models. While in the calibration LOW mode, the default LOW value will be displayed as well.

2. If your standard calibrator is not the same as meter default value, press up/down or number keys to adjust. The adjustable range is displayed on LCD as a reminder. Please refer to table in page 36 for the details. The ZERO calibration could not be adjusted and the value always should be 0.000
3. After adjust the value to be complaint with calibrator, press F4 to start the calibration.
4. While doing HI calibration, please connect positive end tube to calibrator. While doing LOW calibration, please connect negative end tube to calibrator. While doing ZERO calibration, no need to connect tube to any calibrator.
5. After 5 seconds calibration, OK or NG will be displayed on the LCD to indicate the calibration is successful or not. If OK, the actual measured value which is displayed above the text "OK" Should be within the specification.
6. If the NG displayed, try the calibration process again. If get three time failure, the meter need to be returned for repair
7. While finishing one point calibration, press EXIT to back to main calibration mode. Then, choosing to exit the calibration or entering to next point calibration. Maximum three points calibration to have accurate measurement.

983X/963X Manometer Multiple measurement



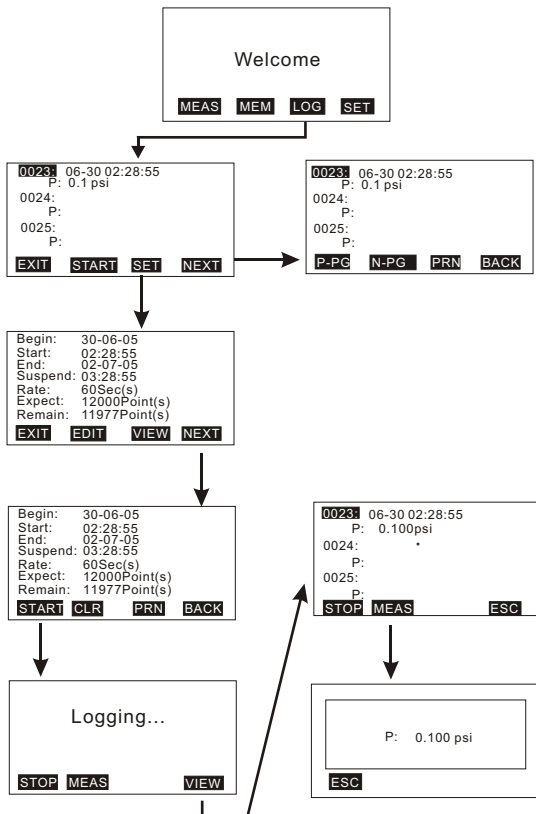
Note:

After saving #01 memory, press ▼ for next measurement #02 with a cursor will be highlighted.

Remarks:

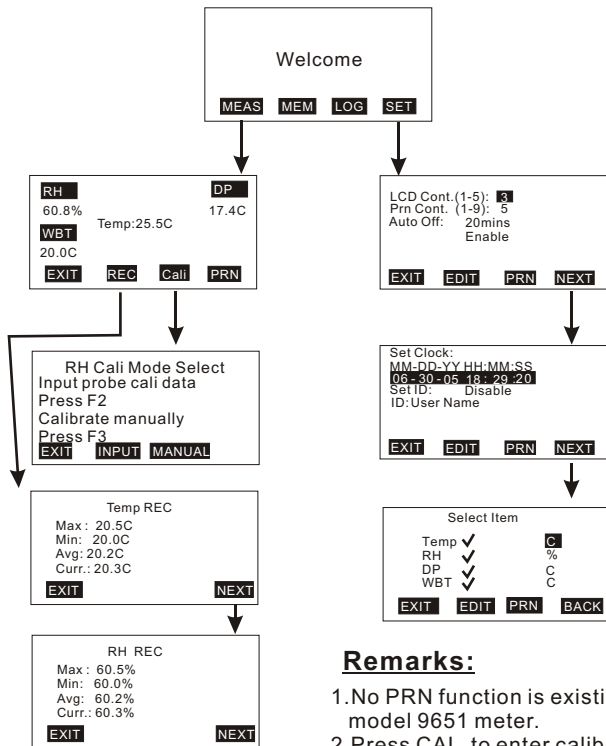
- 1.No PRN function is existing for model 963X manometers.
- 2.Press MEAS to see a real-time measurement values, then press ABORT without saving, press SAVE to store
- 3.Press CLR shortly to delete one data or press for over 2 seconds to delete the whole memory.

983X/963X Manometer Datalogging



- 1.No PRN function is existing for model 963X manometers.
- 2.Before logging, make sure you have set up the parameters by pressing SET key , or you will see a blank data .

9851 /9651 Hygo-Thermometer Setting / Single measurement



Remarks:

- 1.No PRN function is existing for model 9651 meter.
- 2.Press CAL to enter calibration mode. See Page 41 for the details
- 3.Under the " REC" function. Curr. means the current value.
- 4.There are total 4 sub display under REC function. They are temperature, humidity, dew point and wet bulb. Press F4 to choose the display you need.

9851/ 9651 Hygro-Thermometer Calibration Procedure

Note:

"Input cali.data" method is for RH probe replacement.

"Manual calibration" method is for RH probe replacement & old probe re-calibration.

(Need to plug probe into salt bottles)

Welcome

MEAS MEM LOG SET

RH 60.8% DP 17.4C
Temp: 25.5C
WBT 20.0C
EXIT REC Cali PRN

Long press

RH Cali Mode Select
Input probe cali data
Press F2
Calibrate manually
Press F3
EXIT INPUT MANUAL

No need to use
salt bottles

View Cali Data
Zcal : -7340019 E-4
Scal : 5399497 E-5
EXIT EDIT

Need to use
salt bottles

RH Manual Calibration
RH 60.8%
Temp. 23.5 C
EXIT 32.8 75.3

(Put probe into corresponding salt bottles
for 30 mins before press F2 or F3)

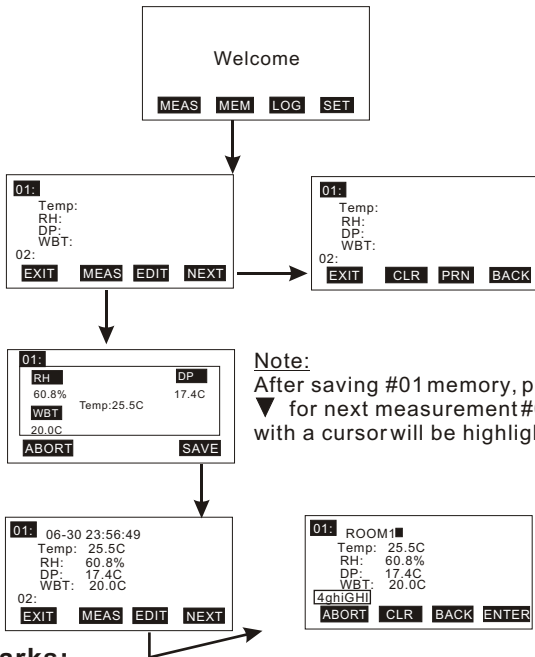
RH Manual Calibration
RH 32.8 % Flashing for 30 mins
Temp 26.5 C
ABORT END

RH Manual Calibration
RH 75.3 % Flashing for 30 mins
Temp 28.5 C
ABORT END

Remarks:

1. Be sure to keep a calibration note enclosed in the package This's for future RH probe calibration use
2. While keyin the calibration value, refer to the value indicated on the note. The values are slope and offset value of each probes.
3. Press ABORT anytime to exit without save or press END to save and exit if you don't want to wait for 30 minutes.
4. The LCD value will flash while doing manual 33% and 75% calibration until the procedure finished.
5. Suggest to calibrate at stable room temp. environment.

9851/9651 Hygro-Thermometer Multiple measurement



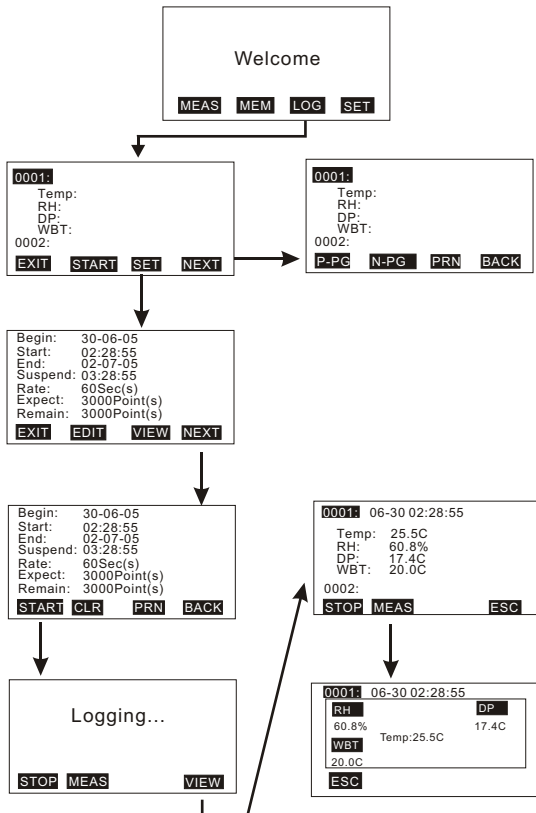
Note:

After saving #01 memory, press ▼ for next measurement #02 with a cursor will be highlighted.

Remarks:

- 1.No PRN function is existing for model 9651 Humidity Meter..
- 2.Press MEAS to see a real-time measurement values, then press ABORT without saving, press SAVE to store
- 3.Press CLR shortly to delete one data or press for over 2 seconds to delete the whole memory.
- 4.In Edit mode, press ENTER to save the description or press abort to leave without save. Press CLR to clear the description or press BACK to previous text.

9851/9651 Hygro-Thermometer Datalogging



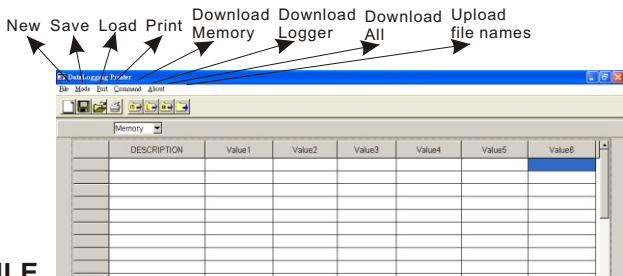
- 1.No PRN function is existing for model 9651 humidity meter
- 2.Before logging, make sure you have set up the parameters by pressing SET key , or you will see a blank data .

SOFTWARE

The enclosed software is a quick tool for you to download the memorized data to PC for further analysis or upload the pre-edited file names to meters, this may save your setting time.

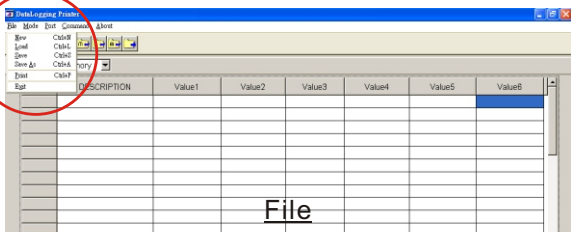
Material & O/S

- Software CD and RS232 cable with D-sub plug are needed.
- Operating system need to be WIN98/2000/NT/XP or above.

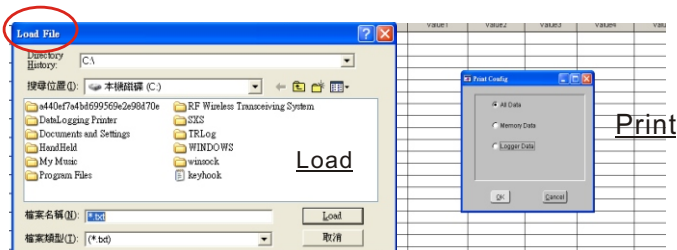


FILE

- New: To create a new file.
- Load: To open a saved file.
- Save: To save current file.
- Save as: To save current file as new file name.
- Print: To print all data or logging data or memory data.
- Exit: To withdraw the software

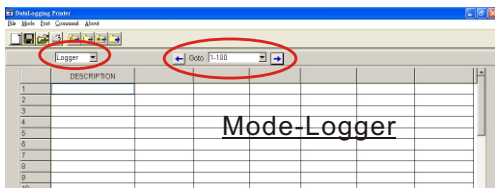
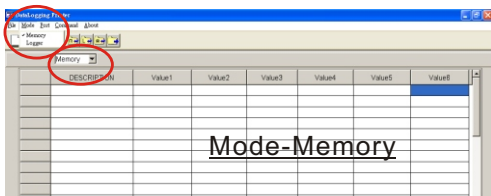


File



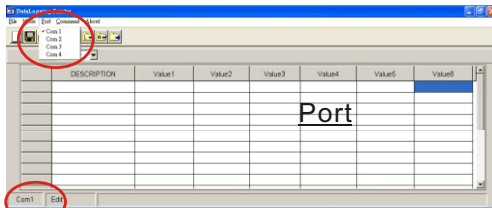
MODE

- There are two data modes. One is Memory, the other one is Logger.
- To select the mode from main menu or quick selection window.
- In logger mode, you may select from "Goto" to choose logged data range. There are 100 points in one page.



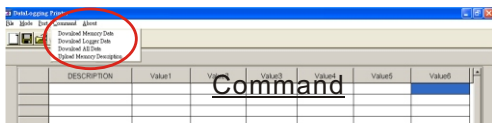
PORT

- Select the correct Com. port to ensure the meter is communicated with PC. In connecting mode, "PC Mode" will appear on the LCD and "COM #" & Edit will show on the left bottom corner of screen.
- For most PCs, the Com. port number is COM1.
- There are 8 COM ports for selection in this software.



COMMAND

- There are four commands in this software.
 - Download measured logging data from meter to PC.
 - Download measured memory data from meter to PC.
 - Download measured logging & memory data from meter to PC.
 - Upload pre-edited file names from PC to meter.
- To edit the file names, click left key of mouse twice quickly, then the cursor will flash to indicate the column is ready for editing.
- Before uploading or downloading, make sure you choose the correct download mode. If you choose "Download memory data" but executed downloading "Logger data", you will have to switch the mode to have the correct display.



PRINT

Select the data you want to print : There are 3 selection :

1. Print only Logger Data
2. Print only Memory Data
3. Print all (Both Logger Data and Memory Data in sequel)

Example: (If you choose Print all from 9811 IR meter)

Page1

<< DataLogging Printer Report Date:07-12-2005 TIME:17:26:30 >>

Memory Data:

STEP	DESCRIPTION	Temp
=====	=====	=====
1	07-12 10:46:24	26.2 C
2	07-12 10:46:30	26.5 C
3	07-12 10:46:33	25.8 C
4	07-12 10:46:38	25.9 C
5	07-12 10:46:48	26.1 C








.....

Logger Data:








STEP	DESCRIPTION	Temp
=====	=====	=====
1	07-12 13:00:00	28.5 C
2	07-12 13:10:00	28.4 C
3	07-12 13:20:00	28.0 C
4	07-12 13:30:00	27.8 C
5	07-12 13:40:00	28.1 C

.....

98XX SERIES SPECIFICATION SHEET

PRINTER SERIES	9811/9812	9861	9871	9881/9882	9880	9851	983X
Photo							
Specialize / Type	IR thermometer w/o probe:9811 w/probe:9812	pH meter	Air flow meter	Thermometer K type:9881 K.J.T.R.S.E.:9882	IrDA receiver	Humidity Meter	Manometers +/-2psi:9832; +/-5psi:9835 +/-15psi:98315; +/-30psi:9833 +/-100psi:9831
Programming	✓	✓	✓	✓	✓	✓	✓
Downloading	✓	✓	✓	✓	✓	✓	✓
Printing	✓	✓	✓	✓	✓	✓	✓
Link to PCs	✓	✓	✓	✓	✓	✓	✓
Backlight	✓	✓	✓	✓	✓	✓	✓
Resolution	0.1C/0.1F (<110C), 1C/1F (>110C)	pH : 0.01 Voltage : 0.1mV	Temp :0.1C RH:0.1% WB:0.1 Air Velocity:0.1m/s Air Volume:0.1-1	0.1C/1C		Temp :0.1C RH:0.1% WB:0.1 DP:0.1	See page 50
Accuracy	+/-2% or 2C in -20~200C; (which is greater) +/-3% or 3C in other range	pH : +/-0.02 Voltage: +/-0.2mV at -99.9~99.9mV, +/-2mV at others	Temp: +/-0.5C RH: +/-3% at 10~90%RH +/-5% at others Air Velocity: +/-3% Air Volume: +/-3%	0.3%rdg+0.7C		Temp: +/-0.6C RH: +/-3% at 10~90%RH +/-5% at others	+/-1%
Manual Memory	99	99	99	99	99	99	99
Datalogging measurement	9811:12000 points 9812:6000 points	4000 points	2400 points	4000 points	Up to 12000points	3000 points	12000 points
Dimension (mm)	208(H) x 70(W) x 53(T) mm						
Battery	4pcs AA batteries						
Hard Carry Case	✓						
Interface Cable	✓						
DC Adaptor	Optional						
Software	✓						
Remarks					For AZ made IrDA products		

96XX SERIES SPECIFICATION SHEET

PRINTER SERIES	9611/9612	9661	9671	9681/9682	9660	9651	963X
Photo							
Specialize / Type	IR thermometer w/o probe:9611 w/probe:9612	pH meter	Air flow meter	Thermometer K type:9681 K,J,T,R,S,E.:9682	IrDA receiver	Humidity Meter	Manometers +/-2psi:9632 ; +/-5psi:9635 +/- 15psi:96315 ; +/- 30psi:9633 +/- 100psi:9631
Programming	✓	✓	✓	✓	✓	✓	✓
Downloading	✓	✓	✓	✓	✓	✓	✓
Printing	X	X	X	X	X	X	X
Link to PCs	✓	✓	✓	✓	✓	✓	✓
Backlight	✓	✓	✓	✓	✓	✓	✓
Resolution	0.1C/0.1F (<110C), 1C/1F (>110C)	pH : 0.01 Voltage : 0.1mV	Temp :0.1C RH:0.1% WB:0.1 Air Velocity:0.1m/s Air Volume:0.1-1	0.1C/1C		Temp :0.1C RH:0.1% WB:0.1 DP:0.1	
Accuracy	+/-2% or 2C in -20~200C; (which is greater) +/-3% or 3C in other range	pH : +/-0.02 Voltage: +/-0.2mV at -99.9~99.9mV , +/-2mV at others	Temp: +/-0.6C RH: +/-3% at 25C, +/-5% at others Air Velocity: +/-3% Air Volume: +/-3%	0.3%rdg+0.7C		Temp: +/-0.6C RH: +/-3% at 25C, +/-5% at others	+/-1%
Manual Memory	99	99	99	99	96	99	99
Datalogging measurement	9611:12000 points 9612:6000 points	4000 points	2400 points	4000 points	Up to 12000points	3000 points	12000 points
Dimension (mm)	165(H) x 70(W) x 53(T) mm						
Battery	4pcs AAA batteries						
Hard Carry Case	✓						
Interface Cable	✓						
DC Adaptor	Optional						
Software	✓						
Remarks					For AZ made IrDA products		

MANOMETER SPECIFICATION SHEET

Unit	psi	TYPE				
		9832/9632 Resolution	9835/9635 Resolution	98315/96315 Resolution	9833/9633 Resolution	9831/9631 Resolution
psi	1	0.001	0.003	0.01	0.02	0.1
Inch of H2O	27.680517	0.01	0.1	0.3	0.5	2
bar	0.068948	0.001	0.001	0.001	0.002	0.004
mbar	68.948253	0.1	0.2	1	2	4
mm of Hg	51.712016	0.1	0.2	0.5	1	3
Inch of Hg	2.035907	0.01	0.01	0.02	0.04	0.2
oz/inch2	16.000844	0.02	0.05	0.2	0.3	1
Kg/cm2	0.070309	0.001	0.001	0.001	0.002	0.004
kPa	6.894859	0.01	0.02	0.1	0.2	0.4
Ft of H2O	2.306719	0.01	0.01	0.02	0.04	0.2
cm of H2O	70.309000	0.1	0.2	1	2	4

TROUBLE SHOOTING

For all datalogging printers:

1. Power on but no display
 - a) Make sure the time of pressing "ON/OFF" key is more than 200 milliseconds (ms).
 - b) Check the batteries are in place and make sure they are at good contact and correct polarity.
 - c) Replace with new batteries and try again.
 - d) Move the batteries for ten seconds, then replace back again.
2. Display disappear
 - a) Check whether the low battery indicator is displayed on or before display disappears. If yes, replace with new batteries.

For 9811/9611 IR datalogging printer

- 1) E2 . Problem : The value is underflow .

For 9812/9612 IR datalogging printer

- 1) E 2. Problem : The value is underflow.
- 2) E 3. Problem : The value is overflow
- 3) E 6. Problem: Measure module does not measure or measure not completely
- 4) E 14. Problem: Temperature calibration error
- 5) E 31. Problem: ADC work error.
- 6) E 35. Problem: Measure module communication error.

For 9881/9882/9681/9682 K type / KJTRSE Thermometer

- 1) E1. Problem: Thermocouple is disconnected.
- 2) E4. Problem: Source data are error .

For 9861/9661 pH datalogging printer

- 1) pH Calibration failure.
 - a) Do not complete any point calibration before the whole calibration is finished.

- b) PTS of some calibration points are out of 85%-105%.
 - c) Replace with new batteries and solution, then try again.
 - d) If it fails again, return the meter to the dealer for repairing.
- 2) E2. Problem: The value is underflow.
 - 3) E3. Problem: The value is overflow.
 - 4) E4. Problem: The original data that relate to the value is error.
 - 5) E31. Problem: A/D measurement error.

For 9680/9660 IrDA receiver and printer

- 1) E5. Problem: The value is exceeding 999999 or less than -99999.

For 9871/9671 Anemo Datalogging printer

- 1) E2. Problem: Meter value is under flow.
- 2) E3. Problem: Meter value is overflow.
- 3) E4. Problem: Calculated source value occurs error.

For 9851/9651 Humidity Datalogging printer

- 1) E2. Problem: The value is underflow.
- 2) E3. Problem: The value is overflow
- 3) E4. Problem: Calculated source value occur error event
- 4) E11. Problem: RH calibration error
- 5) E33. Problem: Measure Hardware Error.

For 983X/963X Manometer Datalogging printer

- 1) E2. Problem: The value is underflow.
- 2) E3. Problem: The value is overflow
- 3) E4. Problem: Calculated source value occur error event.