

OPERATION MANUAL

MULTI-FUNCTION DATALOGGER



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INTRODUCTION

Thank you for purchasing this multiple function datalogger! 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 AAA batteries
3. Operation manual
4. Carry Case
5. RS232 cable
6. 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 AAA batteries or 9V adaptor

COMPARISON TABLE

Measured parameters of each meter:

| MODEL | FUNCTION | PARAMETERS |
|-------|---------------|----------------------------------|
| 9660 | 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 (At most) |

Comparison table of multiple points and datalogging measurements

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

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 date 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.

Note4:The total logging memory size is 12000 points, different available parameters for each meter:

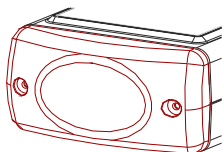
Ex: If using 9660 to receive #8726 psychrometer via IrDA, there are five parameters transmitted from #8726 so the max. memory capacity is 2400 sets ($12000/5=2400$)

METER KEYPAD



TOP COVER -CONNECTOR

The following illustration is the top cover for 9660 datalogger.



9660 IrDA RECEIVING METER

An IrDA like module is built in the meter 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.

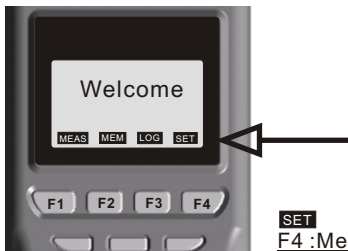


IrDA meter
example:
8726 Psychrometer

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 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
- 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: To choose "Disable" or " Enable"
- ID: To edit an ID of this datalogger
- 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)
3. Auto logging (LOG).

Operating the single measurement as a general meter.

MEAS

F1 :Single Measurement



Definition

- Press F1 (MEAS) to proceed 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 MEAS 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.



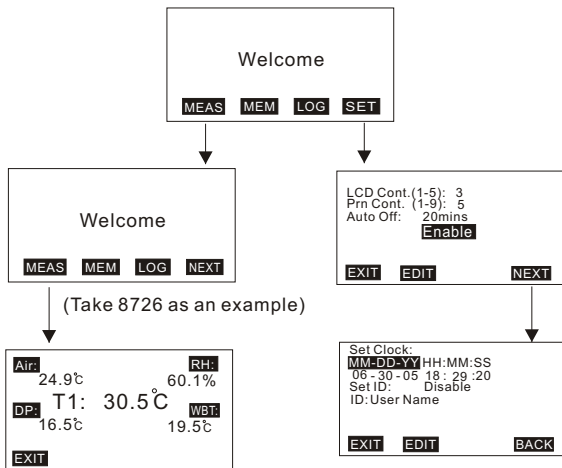
LOG

F3 :Datalogging

Definition

- Press SET to set needed setting first. The Date mode is based on the mode you set under SET (see page 6). 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" .

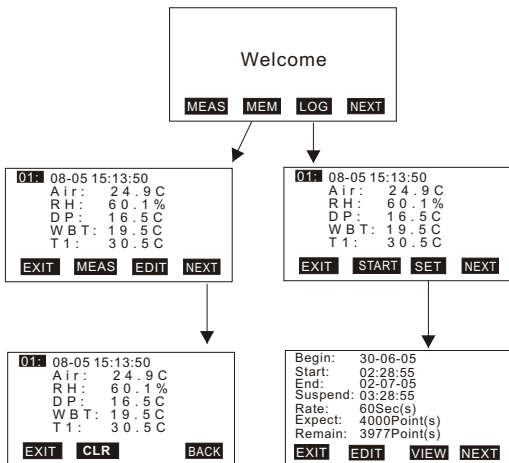
9660 IrDA Setting and Single Data Receiving



REMARKS:

1. The IrDA data receiver features 3 receiving modes :
 - a) Single data receiving
 - b) Multipoint data receiving
 - c) Datalogging receiving
2. The IrDA data receiver may receive any AZ IrDA meters through any of above 3 receiving modes.
3. Set ID : To select " Enable" or Disable.
4. ID :The identification of the meter .
5. Above 8726 meter is an IrDA Psychrometer for example.

9660 IrDA Multiple and Datalogging data 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 Datalogger 9660 is activated, users manually receives data from single measurement, or manually receives multiple data by pressing MEAS key and then to SAVE it, or automatically receive data by pre-setting .

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 | |

(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: 60.1% | DP: 16.5C |
| Air: 24.9 C | |
| WBT: 19.5C | T 1: 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: 56.5% | DP: 15.5C |
| Air: 24.9 C | |
| WBT: 18.0C | T 1: 28.5C |
| ABORT | SAVE |

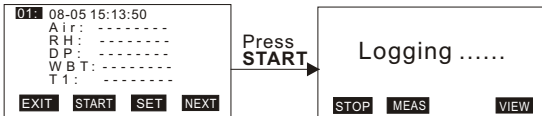
Wait for few
seconds

| | |
|------------|--|
| 01: | |
| SYNC | |
| ABORT | |

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

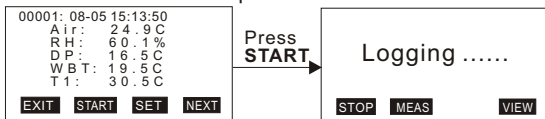
9660 IrDA Datalogging Receiving with IrDA meters

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

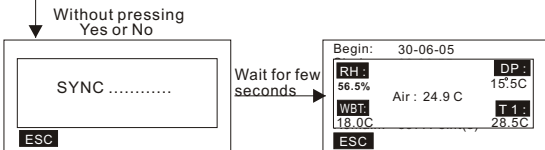
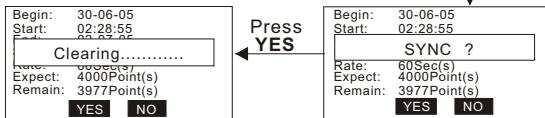
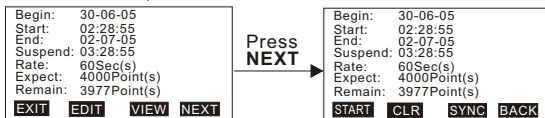


Though you might not target 9660 to an IrDA meter yet, when you press **START(F2)**, Logging will still be activated. The IrDA receiver is proceeding receiving per presetting sampling time.

Take 8726 as an example



Change with different IrDA meters
↓, press SET.



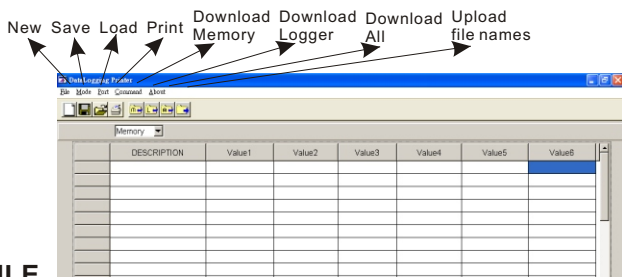
Press ESC to finish SET
then press START to log.

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.

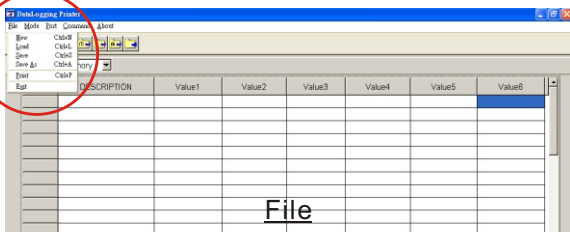
Material & O/S

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



FILE

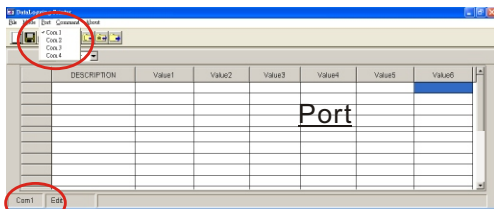
- New: To create a new file.
- Load: To open a saved file.
- Save: To save current file.
- Save as: To save current file as new file name.
- Print: To print all data or logging data or memory data.
- Exit: To withdraw the software



File

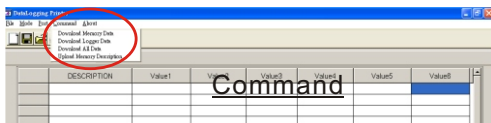
PORT

- 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 execute 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 |

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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 | Please check catalog for the details |
| 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 25C, +/-5% at others Air Velocity: +/-3% Air Volume: +/-3% | 0.3%rdg+0.7C | | Temp: +/-0.5C RH: +/-3% at 25C, +/-5% at others | +/-1% |
| Manual Memory | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Datalogging measurement | 9611:12000 points 9612:8000 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 | | |

TROUBLE SHOOTING

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 battery 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 .

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