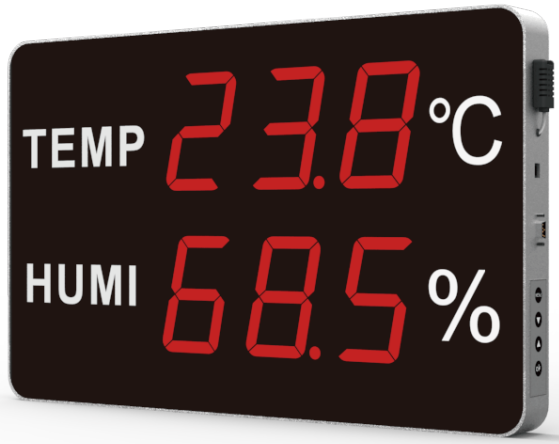
1 YEAR WARRANTY

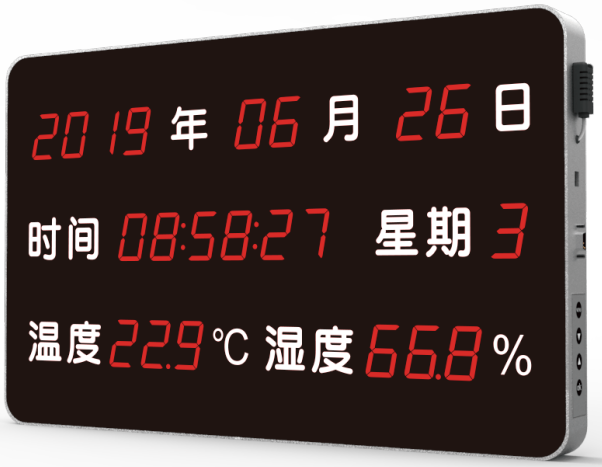
CE

HUATO

User's Guide



HE250A



HE218B

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HE218B/HE250A Series LED Temperature Humidity Display Board

HUATO

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HUATO Headquarters:

HUATO ELECTRIC CO., LTD.

Toll-Free: 0755-29977605

Customer Service: 0755-29977605

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Table of Contents

Section ..... Page

Section 1 Introduction 1
1.1 Introduction 1
1.2 Features 1
1.3 Applications 1
1.4 Data Logger Model 1
1.5 Temperature and Humidity Data Logger Appearance 2
1.6 Temperature and Humidity Data Logger Screen 6
1.7 Button function instructions 7

Section 2 Installation and Instruction 8
2.1 Overviews 8
2.2 The Requirements of the Hardware 10
2.3 The Requirements of the Operating System 10
2.4 The Requirements of the Database 10
2.5 Install Software 10
2.5.1 Install ToMonitor / ToClient Software 10
2.6 RS485 software operation instructions 11
2.6.1 First Run ToMonitor 11
2.6.2 How to use ToMonitor 11
2.7 RJ45 Software Operation Instructions 15
2.7.1 Configuring RJ45 instrument parameters using LanConfig. 15

Section 1 - Introduction

HE218B/250A series large-screen temperature humidity recorder, using high-brightness LED digital tube display, the visual distance reaches 10~100 meters, using imported temperature humidity sensor, the main components are adopted industrial high precision, high quality products, from the source to ensure the reliability and stability of the instrument

Section 1.2 - Features

- HE218B series： Month/year/date/time/week/temperature/humidity shows at the same time.
- HE250A series： temperature/humidity shows at the same time.
- Communication interface: USB/RJ45/RS485
- Temperature humidity calibration function; values can be adjusted through buttons on the instruments.
- Adopt highlight LED digital tube display , showing clear words , visual distance of 20-100m.
- Host Size(L x H x D): HE218B series /HE250A series(60.1x38.3x5cm)
- Temperature & Humidity External Probe Diameter: 16mm.

Section 1.3 - Application

- Museum.
- Supermarkets.
- Working and Living Areas.

NOTE:

There are no user serviceable parts inside your unit. Attempting to repair or service your unit may void your warranty.

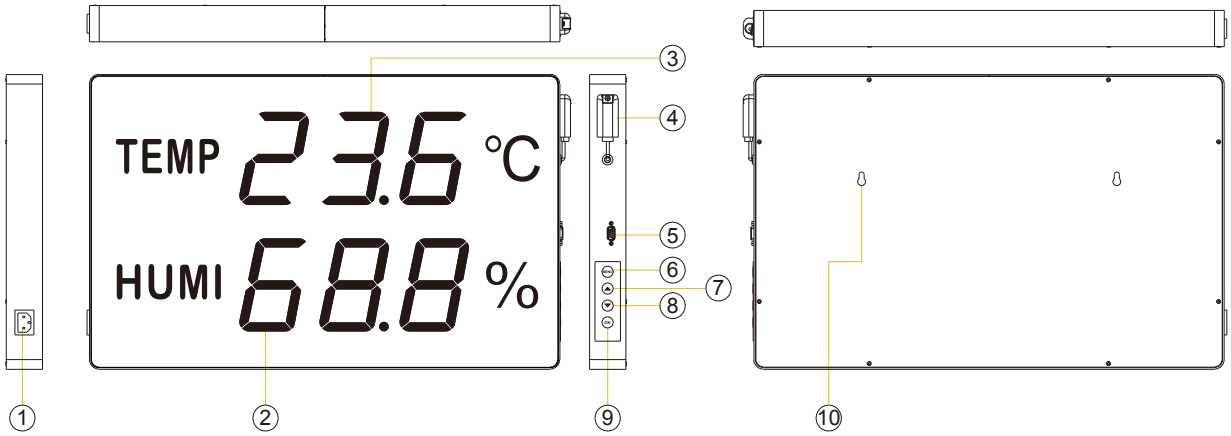
Section 1.4 - Data Logger Model

Model	Temperature Range	Humidity Range	Temperature Accuracy	Humidity Accuracy	Capacity of Records
HE250A-TH-USB	-40~85℃	0~100%RH	±0.5℃	±5%RH	65.000
HE250A-EX-USB					
HE250A-TH-RJ45	-40~85℃	0~100%RH	±0.5℃	±5%RH	
HE250A-EX-RJ45					
HE250A-TH-RS485	-40~85℃	0~100%RH	±0.5℃	±5%RH	
HE250A-EX-RS485					

Model	Temperature Range	Humidity Range	Temperature Accuracy	Humidity Accuracy	Capacity of Records
HE250A-TH-USB	-40~85˚C	0~100%RH	±0.5˚C	±5%RH	65.000
HE250A-EX-USB					
HE250A-TH-RJ45	-40~85˚C	0~100%RH	±0.5˚C	±5%RH	
HE250A-EX-RJ45					
HE250A-TH-RS485	-40~85˚C	0~100%RH	±0.5˚C	±5%RH	
HE250A-EX-RS485					

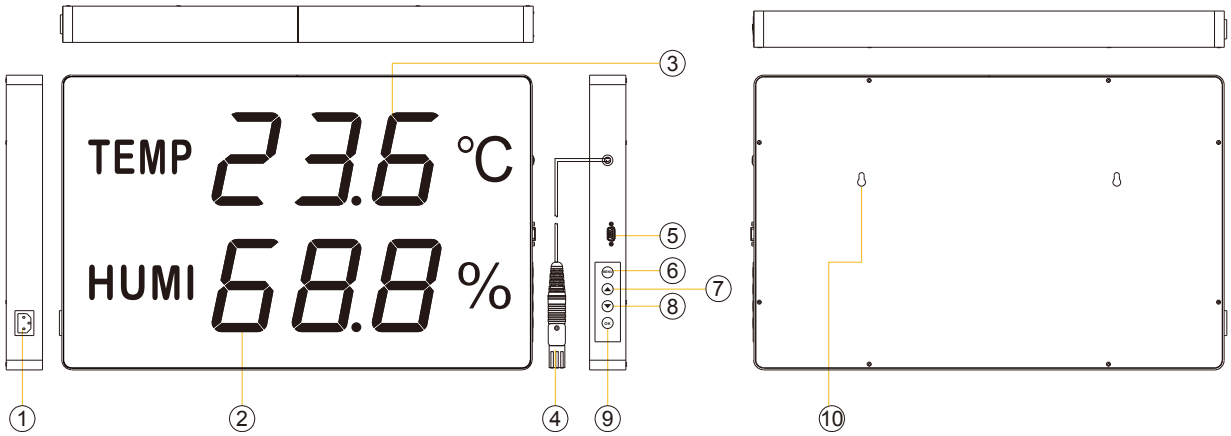
Section 1.5 - Temperature and Humidity Data Logger Appearance

HE250A-TH-USB/HE250A-TH-RS485



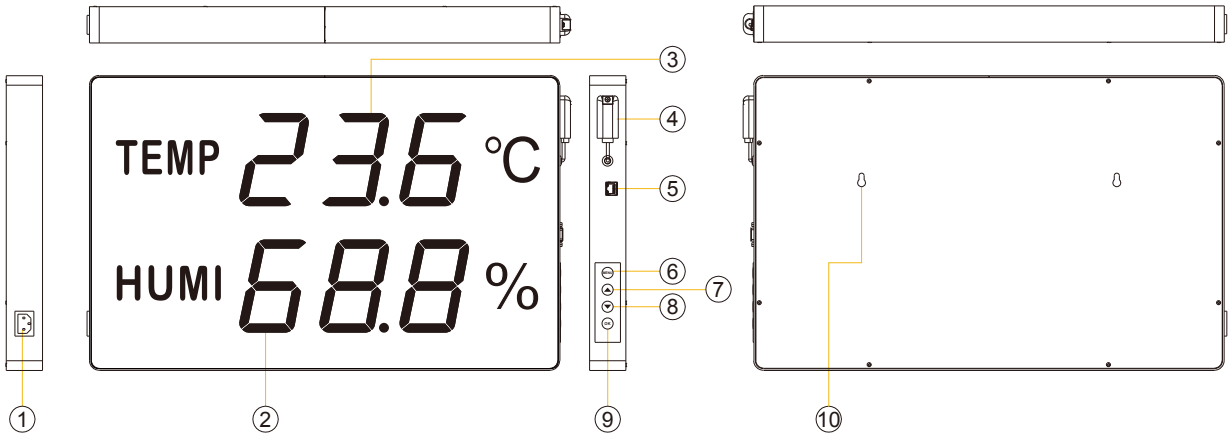
1. Power port
2. Temperature dispaly
3. Humidity display
4. Built-in sensor
5. USB/RS485 Port
6. MENU button
7. Upper key
8. Lower key
9. OK button
10. Hanger

HE250A-EX-USB/HE250A-EX-RS485



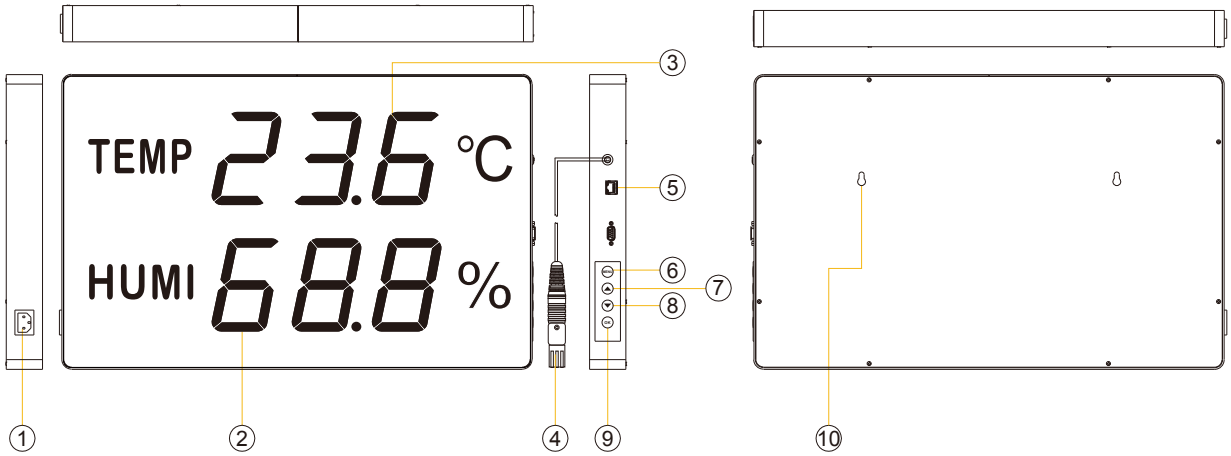
1. Power port
2. Temperature dispaly
3. Humidity display
4. External sensor
5. USB/RS485 Port
6. MENU button
7. Upper key
8. Lower key
9. OK button
10. Hanger

HE250A-TH-RJ45



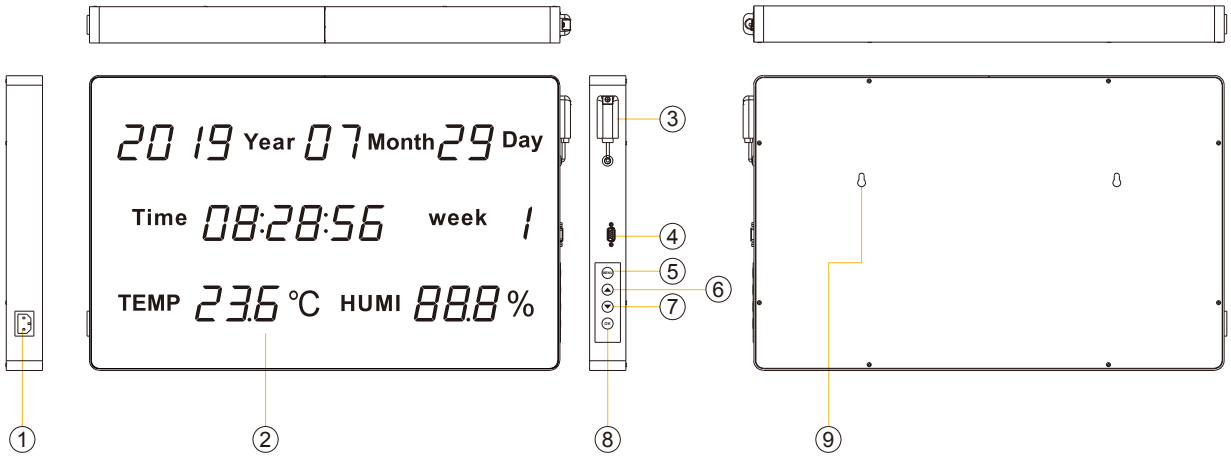
1. Power port
2. Temperature dispaly
3. Humidity display
4. Built-in sensor
5. RJ45 Port
6. MENU button
7. Upper key
8. Lower key
9. OK button
10. Hanger

HE250A-EX-RJ45



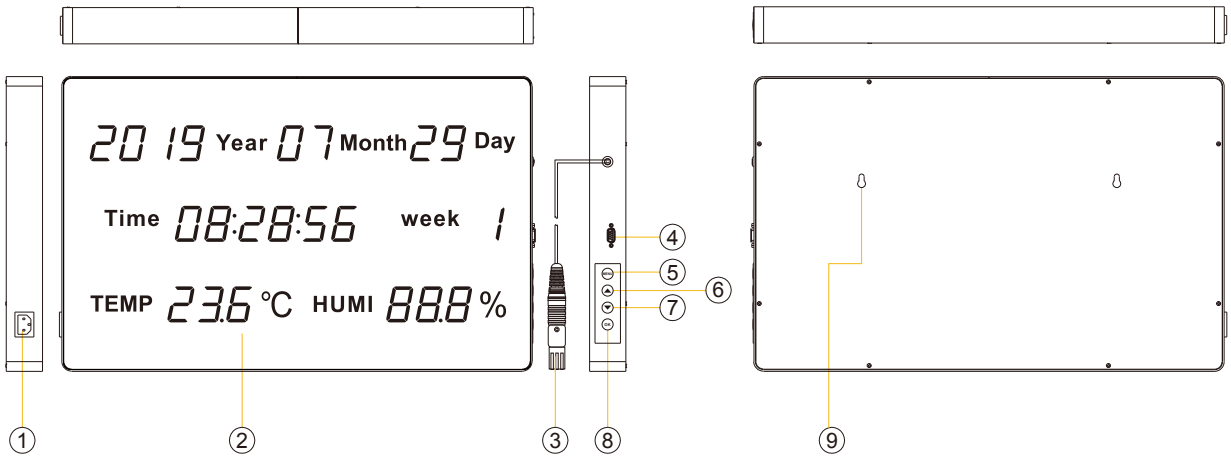
1. Power port
2. Temperature dispaly
3. Humidity display
4. External sensor
5. RJ45 Port
6. MENU button
7. Upper key
8. Lower key
9. OK button
10. Hanger

HE218B-TH-USB/HE218B-TH-RS485



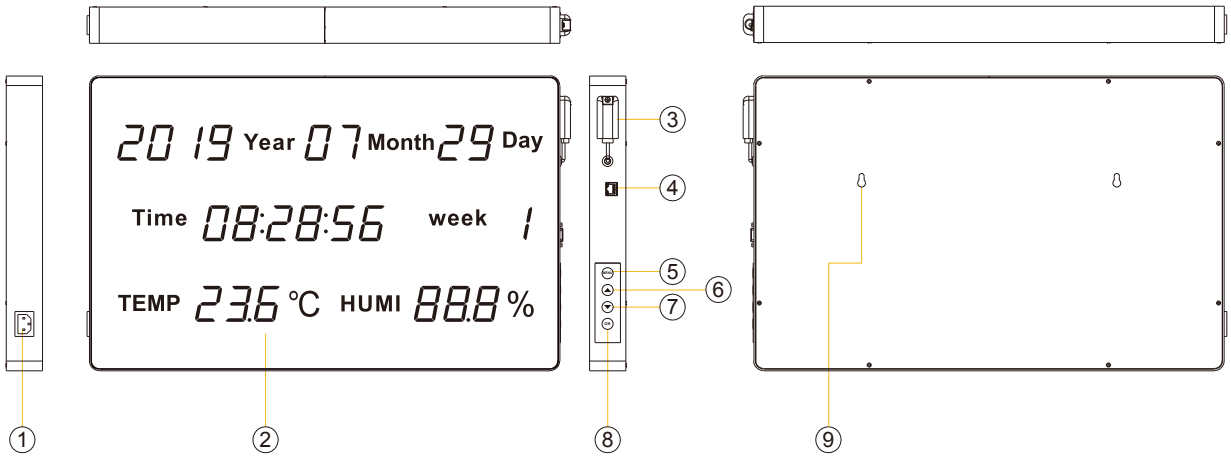
1. Power port
2. LCD Screen
3. Built-in sensor
4. USB/RS485 Port
5. MENU button
6. Upper key
7. Lower key
8. OK button
9. Hanger

HE218B-EX-USB/HE218B-EX-RS485



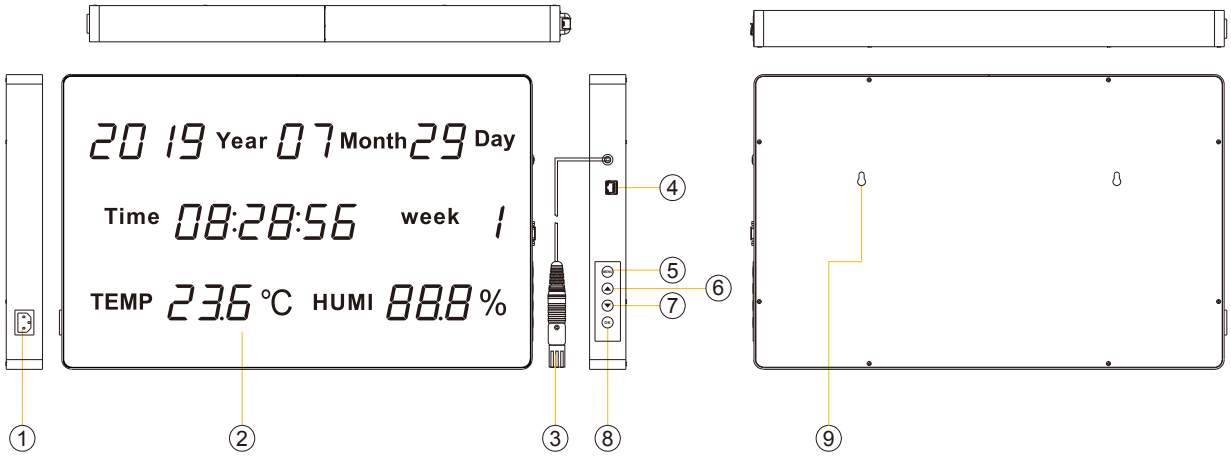
1. Power port
2. LCD Screen
3. External sensor
4. USB/RS485 Port
5. MENU button
6. Upper key
7. Lower key
8. OK button
9. Hanger

HE218B-TH-RJ45



1. Power Port
2. LCD Screen
3. Built-in Sensor
4. RJ45 Port
5. MENU Button
6. Upper key
7. Lower key
8. OK Button
9. Hanger

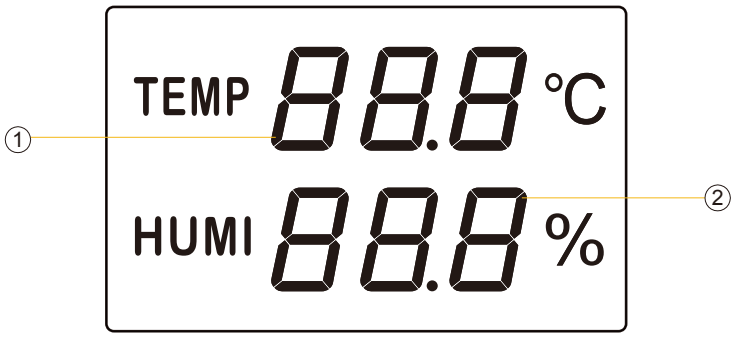
HE218B-EX-RJ45



1. Power Port
2. LCD Screen
3. External Sensor
4. RJ45 Port
5. MENU Button
6. Upper key
7. Lower key
8. OK Button
9. Hanger

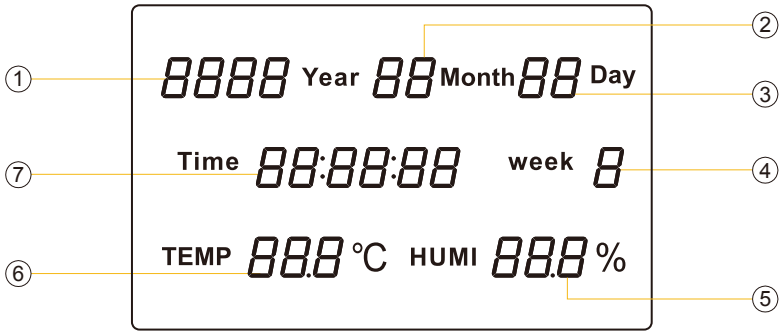
Section 1.6 - Temperature and Humidity Data Logger Screen

HE250A-TH-USB/HE250A-EX-USB/HE250A-TH-RJ45/ HE250A-EX-RJ45/HE250A-TH-RS485/HE250A-EX-RS485



1. Temperature display area
5. Humidity display area

HE218B-TH-USB/HE218B-EX-USB/HE218B-TH-RJ45/ HE218B-EX-RJ45/HE218B-TH-RS485/HE218B-EX-RS485



1. Year display area
2. Month display area
3. Date display area
4. Week display area
5. Humidity display area
6. Temperature display area
7. Time display area

Section 1.7 - Button function instructions

MENU : MENU function button

Normal mode: （1） press MENU enter date setup mode, press OK enter setting state, press ▼ or ▲ button respectively to adjust the value.

Setting mode: （2） press MENU for five seconds enter calibration setup mode, press OK enter setting state, press ▼ or ▲ button respectively to adjust the value.

▼ : MENU function button

Normal mode: Press this key is invalid.ate.

Setting mode: Set a negative value.

▲ : MENU function button

Normal mode: Press this key is invalid.

Setting mode: Set a positive value.

OK : MENU function button

Normal mode: Press this key is invalid.

Setting mode: Confirm button and enter the next step.

HE218B-TH-USB Examples of Button Usage

(1) Example for month/year/date/time/week setting:

Setting Steps : First , press MENU enter year setup mode, then press OK enter year setting state, press ▼ ▲ to adjust value. Press MENU again enter month setting state → date setting state → hour setting state → minutes setting state → seconds setting state → week setting state, press OK again exit setting mode.

(2) Example for calibration setting:

For example: Standard temperature is 16 ℃, humidity is 66%RH, and the measuring temperature is 15.3 ℃ , humidity is 66.8%RH. Then difference of temperature is -0.7 ℃ , difference of humidity is +0.8%RH.

Setting Steps: first, press MENU enter setup mode, then press OK enter temperature deviation setting state; press ▼ to adjust the temperature is -0.7 ℃, press OK enter humidity settings, and press ▲ to adjust the humidity value is +0.8%RH, then press OK back to normal mode.

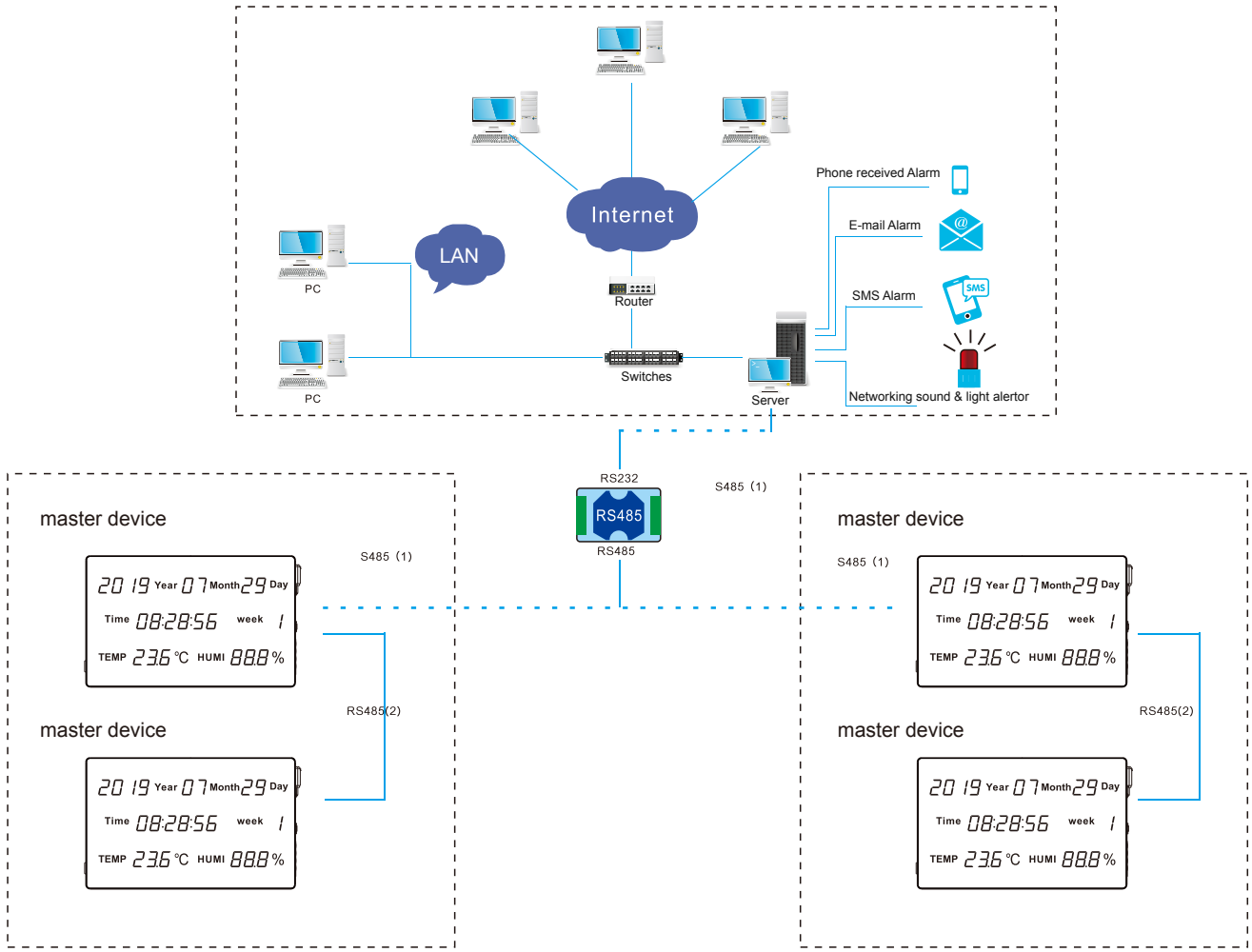
Section 2.1 - Overviews

ToMonitor / Toclient Environmental Monitoring System, developed is a high reliable monitoring system with high precision and user friendly interface.

ToMonitor / Toclient System has been used to monitor the temperature and humidity in electronics and industrial plants, pharmaceutical warehouse, museums, archives, library, laboratory and exhibition hall.

ToMonitor / Toclient System supports TCP/IP protocol (LAN), Zigbee protocol (wireless), and GPRS (wireless) hybrid networking.

RS485 network topology

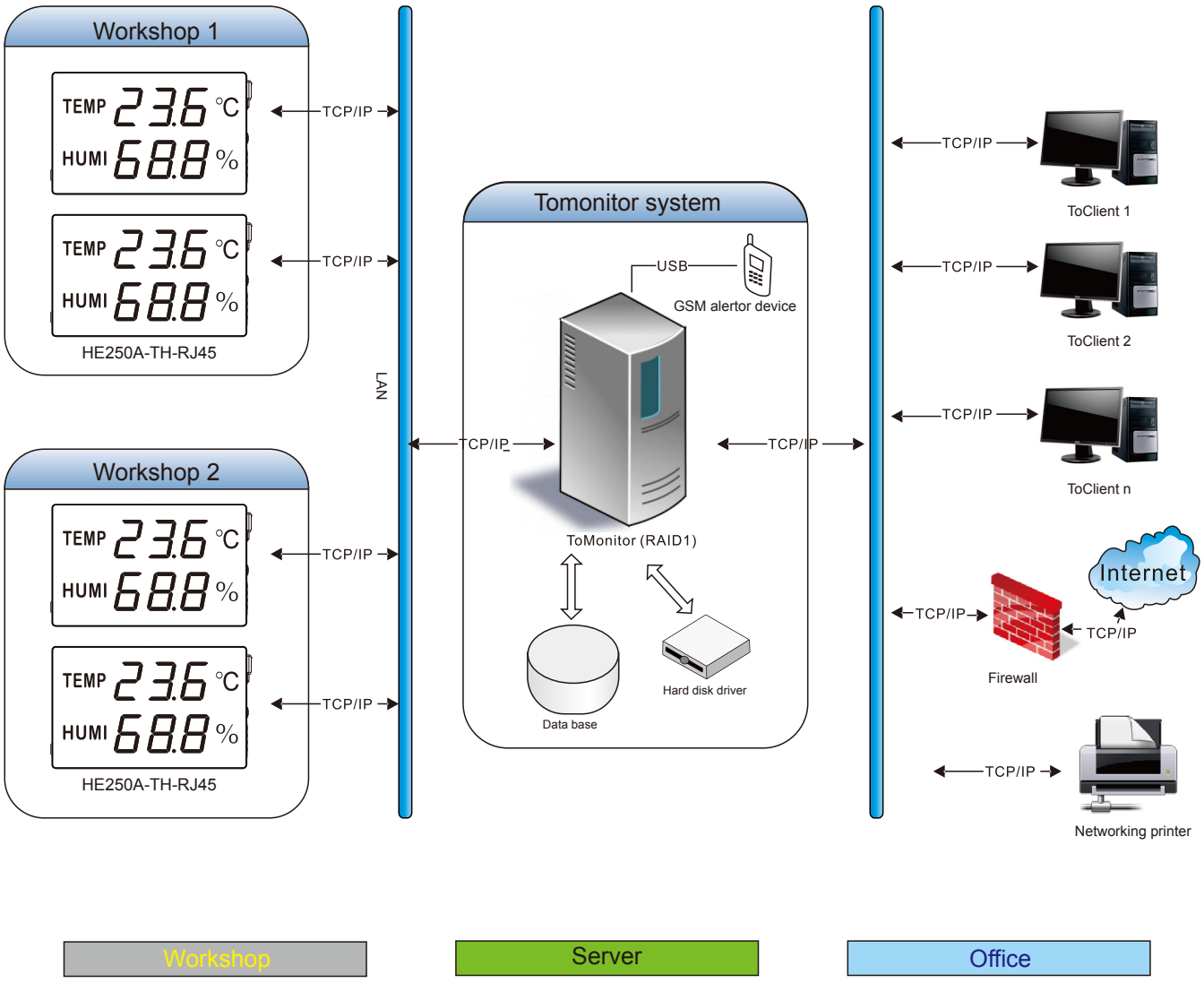


RS485 network system

RS485 network is a major network layout for industrial networking systems. It's an easy to deploy,mature ,highly reliable and economical network layout.

Thanks to the easy wiring and high reliability features of RS485 network, it's already been widely used in many industrial environments. The advantages of such networks reflect in the following facts: fast transmission speed. The transmission distance is up to 1200 meters when the transmission speed is 100 kbit/s, and in short distance communication speed can be up to 10 Mbit/s.

RJ45 network topology



The device layer includes temperature & humidity data logger and wireless repeater, the function of this layer is to collect, record and upload temperature & humidity data . The data logger collects and records temperature & humidity data from surrounding environment and upload it to a server via wireless repeater.

ToMonitor is server software, it stores data uploaded from data loggers and displays it on the software. Users can set temperature and humidity value range for each devices, when the value exceeds limits, the software will alarm user immediately.

ToClient is the client, user can access server via this software to view real-time/recorded data of each temperature & humidity data logger.

Section 2.2 - The Requirements of the Hardware

The Lowest Configuration:

- CPU: Intel Core 2 E2140 1.6GHz orAMD Athlon 64 X2 4200+ 2.2GHz
- Physical Memory: 1 GB（Windows XP）; 2 GB（Windows 7）
- Hard-Disk Space: 4 GB

The Recommended Configuration:

- Operating System: Windows 7 - 64 bit
- CPU: Intel Core i3 - 2100 3.1GHz orAMD Athlon II X4 641 2.8GHz
- Physical Memory: 4 GB
- Hard-Disk Space: 4 GB

Section 2.3 - The Requirements of the Operating System

- ToMonitor / ToClient can be used in Windows XP / Vista / 7(32&64-bit) / 8(32&64-bit) / Server 2003 / 2008.
- It cannot be used in Linux / Unix / Mac OS or any other system.

Section 2.4 - The Requirements of the Database

- ToMonitor / ToClient software use *.mdb database. (Microsoft OfficeAccess Database).
- ToMonitor / ToClient can run normally without MicrosoftAccess.

Section 2.5 - Install Software

2.5.1 - Install ToMonitor / ToClient Software

1. Copy software compressed file into the Server local hard disk.
2. Extract compressed file to local hard disk D: or E:. [1,2]
3. If OS is Windows7 / 8, please run the program (ToMonitor & ToClient software) as an administrator.
4. ToMonitor / ToClient software can run directly without setup process.

[1] Please do not install it in local disk C:.
[2] The file path cannot contain Chinese characters; Special characters, etc..

Section 2.6 - RS485 software operation instructions

2.6.1 - First Run ToMonitor

1. Click 

icon, Software pop-up configure ODBC dialog, Press OK.

2. Software pop-up Succeed dialog, Press OK. The Software will be auto-closed.

3. Click , start the program.
(In this time, ToMonitor software is able to get normal start.)

4. Windows Fire WallAlert. Please select both of these checkboxes. [3]

5. Press 

, the initial user name / password is "admin / admin". [4]
(After Login, all icons in the bar is unlocked. [5])

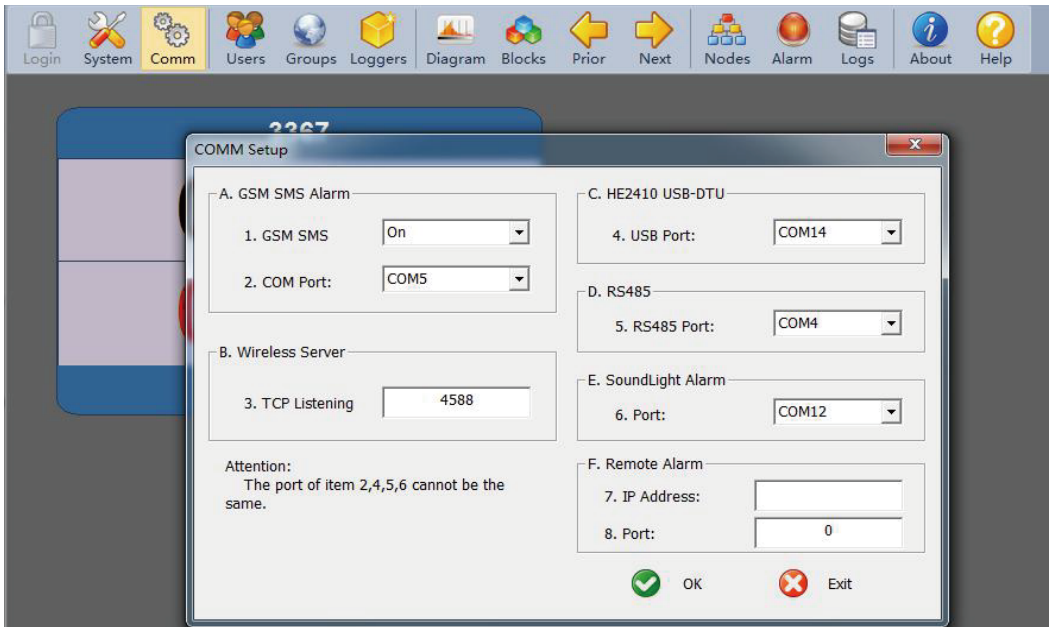
2.6.2 - How to use ToMonitor

1. Connect the loggers to computer.

2. Right click 【My Computer】,then choose 【Property】-> 【Device】-> 【COM & LPT】.After that, we will find the com port for USB Serial Port(here it is COM10).

3. Click 

on on the software interface.

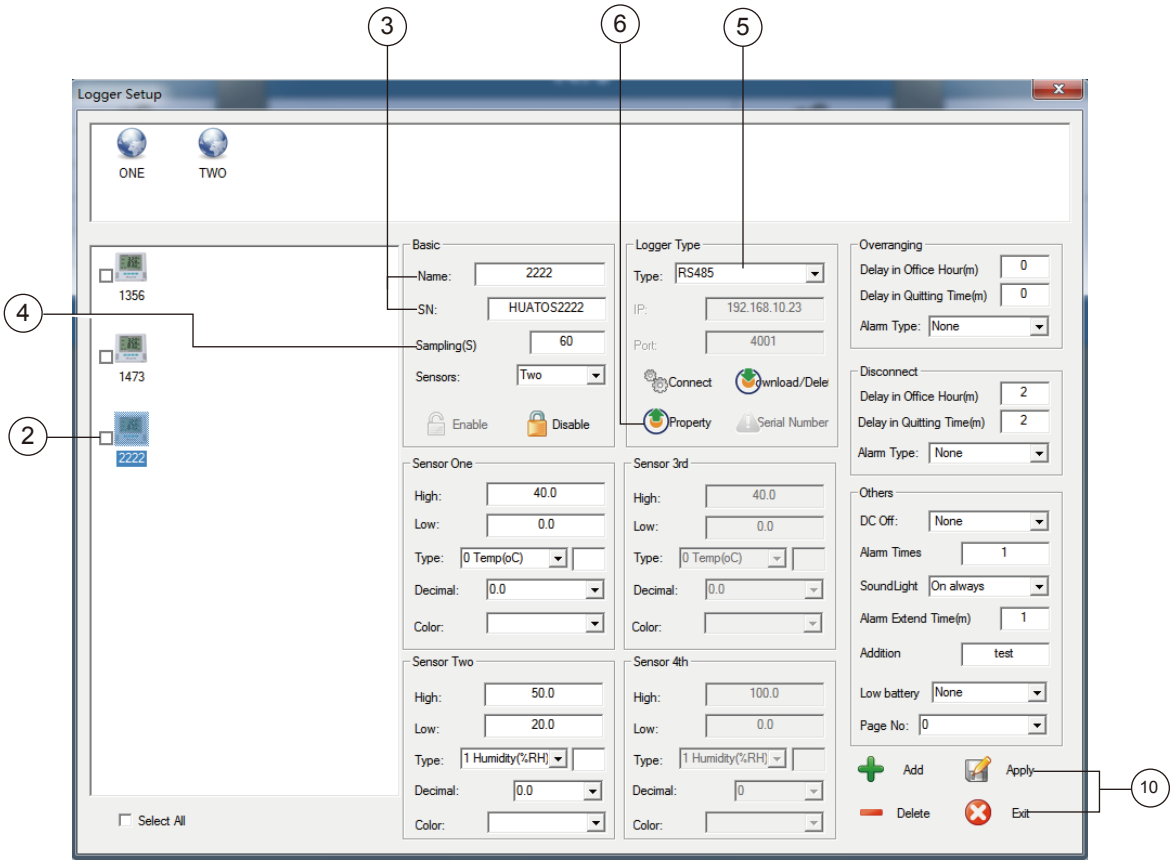


[3] If the Server installed other Fire-Wall or Antivirus Software, please allow ToMonitor to Communicate on network.
[4] Closing the software also requires user login authentication.
[5] After Login 10 minutes, the software will automatically log out.

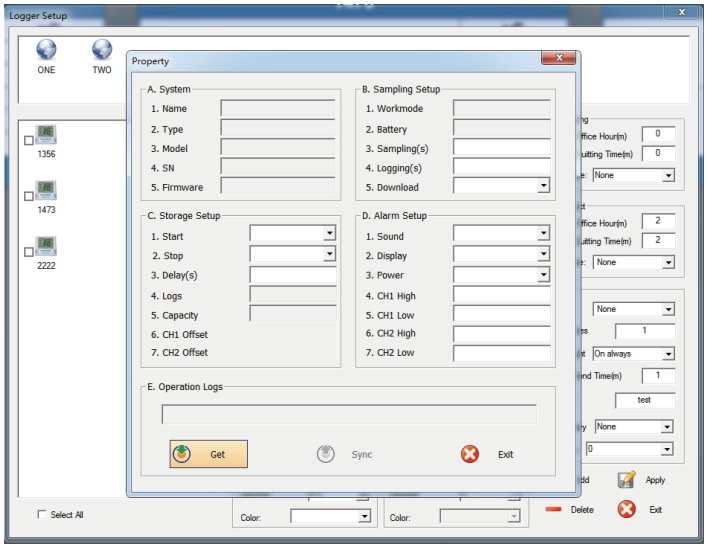
4. Add a new logger in Tomonitor by the following steps

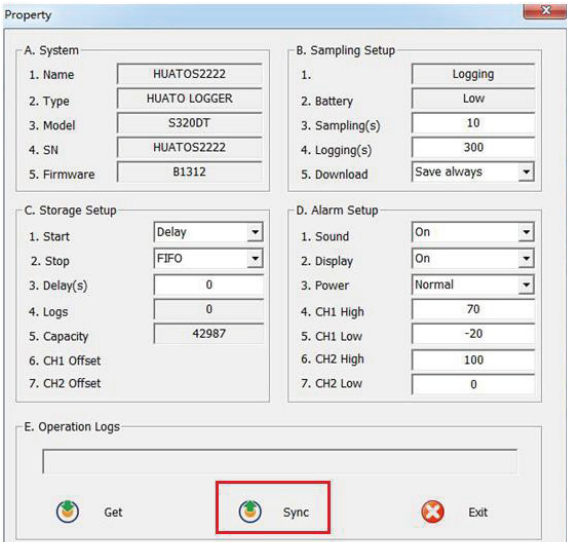
- Click on 【Loggers】, then add a new logger in the following interface.
- Choose a Logger in the logger list, display its properties on the right side.
- Input the new logger's Serial Number & Name.

  Tips: Name cannot include symbol. Serial Number use Majuscule letters.
- Sampling (Seconds): We will sync this value to the data logger's "Logging Interval" (Logging/Upload frequency) property in later steps.
- Logger type choose 【RS485】.
- Click on 【Property】.



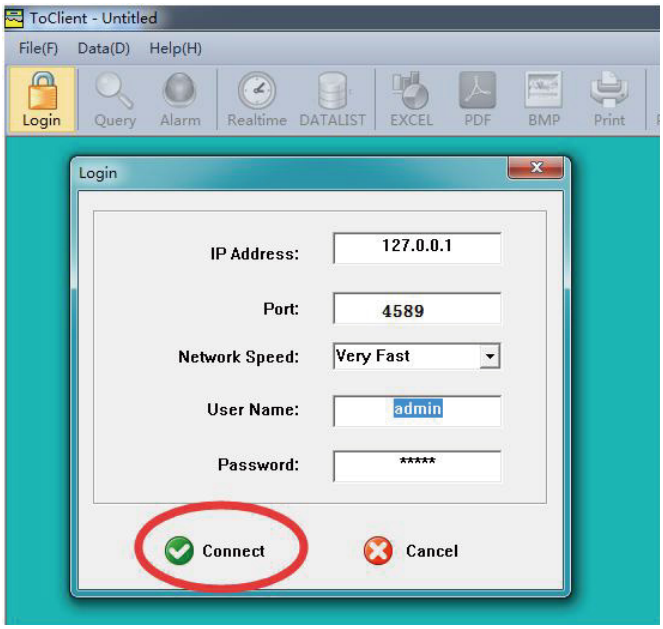
- After clicking on 【Property】, we enter the following interface.
- Click on 【Get】 to get property of the logger.
- Then synchronize property we set in the previous and change in this interface by clicking on 【Sync】.
- Click on 【Exit】 to go back to previous interface, then click on 【Apply】 and 【Exit】.
- Wait for a few seconds, data collected from the loggers will show on the monitor.

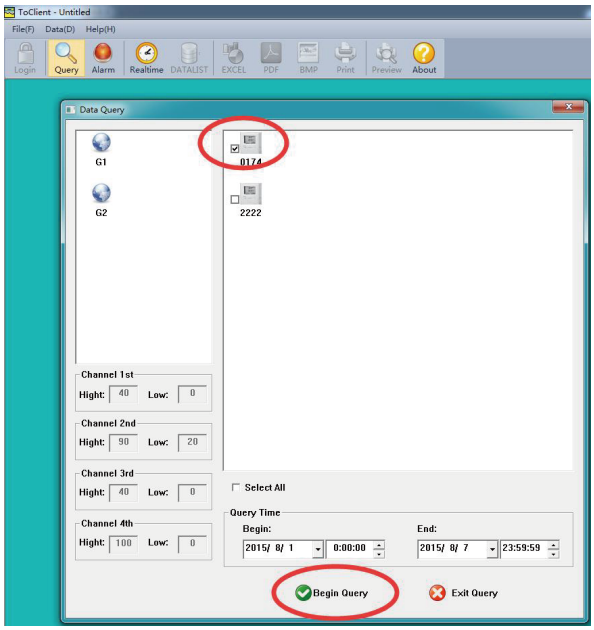




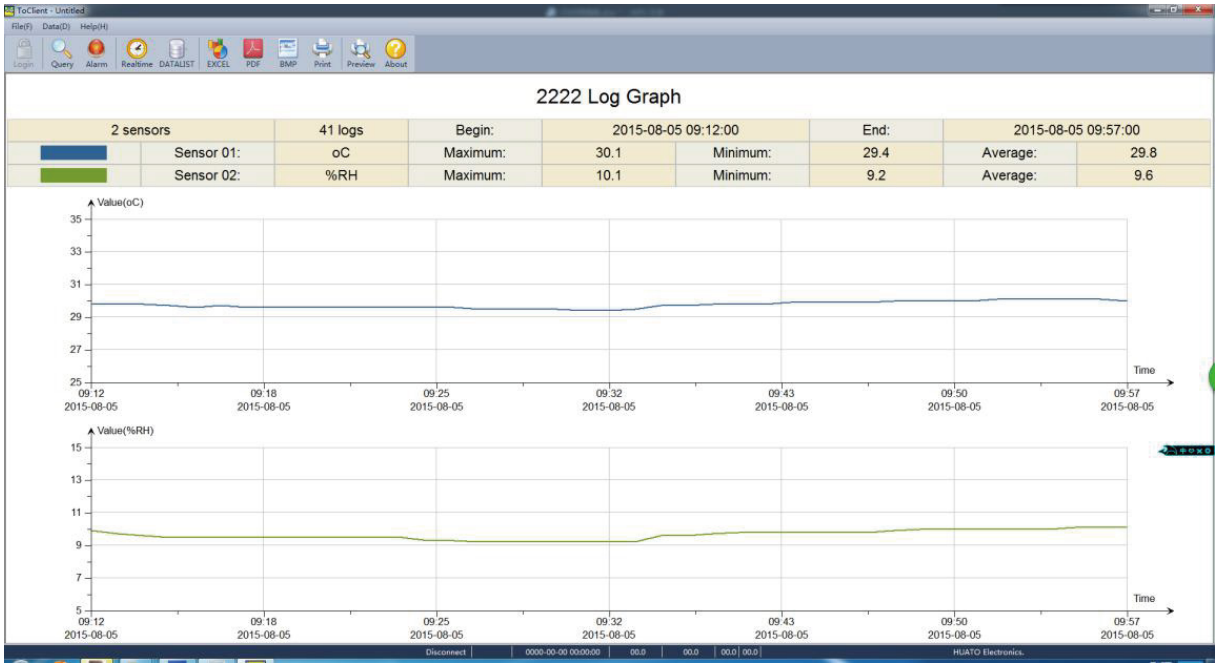
5. Data Query and Analysis

- Find ToClient8.exe file in the software folder, and click on it (Noice that ToCLient8 can be used only when ToMonitor is open).
- Connect to ToCLient(Input setting as follows, and User name: admin & Password: admin.
- Choose the logger we want to query.





- Data will display in the following graph.

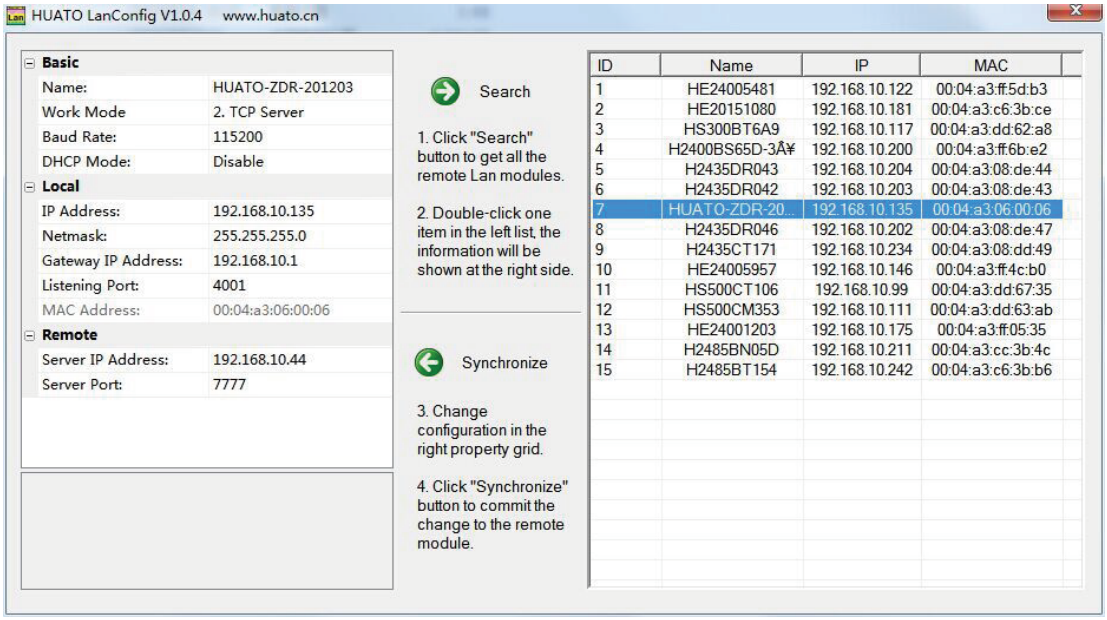


- Click on 【DATALIST】 to list data recorded from the logger we chose.

Section 2.7 - RJ45 Software Operation Instructions

2.7.1 - Configuring RJ45 instrument parameters using LanConfig

1. Open LanConfig software to finish LAN configuration, we shall see the following interface. Press the "Search Modules" button to get following interface. This is to find RJ45 loggers connected to the same router as this computer.



2. Double click name of one logger to get properties of that logger. Description of each item is list below.

   Name: This is serial number of the logger.

   Work Mode: Working mode of this logger. For RJ45 loggers, it can switch from TCP server and TCP client.

   Baud Rate: Keep 19200 unchanged.

   DHCP Mode: Always set this one disable.

   IP Address: IP address for this logger, which should not conflict with other IP of other device in the LAN.

   Gateway IP: IP address of customer's router.

   Listening Port: Logger's com port to receive data package from monitoring computer.

   MAC Address: Mac address of this logger.

   Object IP: IP address of monitoring computer, which should be unique in the local network.

   Object Port: Com port of monitoring computer to receive data package from loggers.

3. After LAN configuration, next step is to add loggers to ToMonitor system so that loggers can be monitored real-timely and data recorded. Open the ToMonitor application file in the software folder.
4. Click 【Loggers】on to add loggers to ToMonitor system so that loggers can be monitored real-timely.
5. In the following interface, fill in related logger information according to customer's need. SN should be the same as name in step 2 above;

   In the Sensor One block, high defines upper alarming limit for temperature, low defines lower alarming limit.

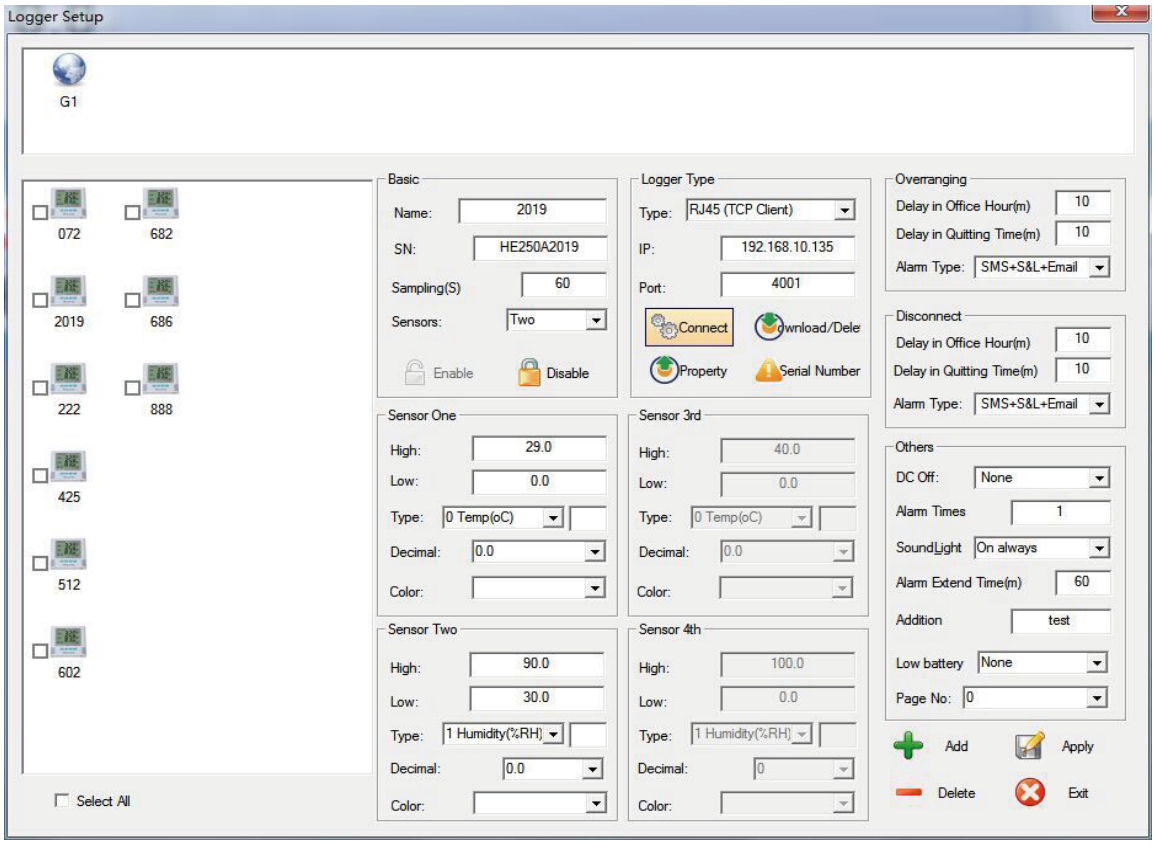
   In the SensorTwo block, high defines upper alarming limit for humidity, low defines lower alarming limit.

   In Logger Type block, Type is the working mode, IPis IPaddress and Port is listening port from step 2.

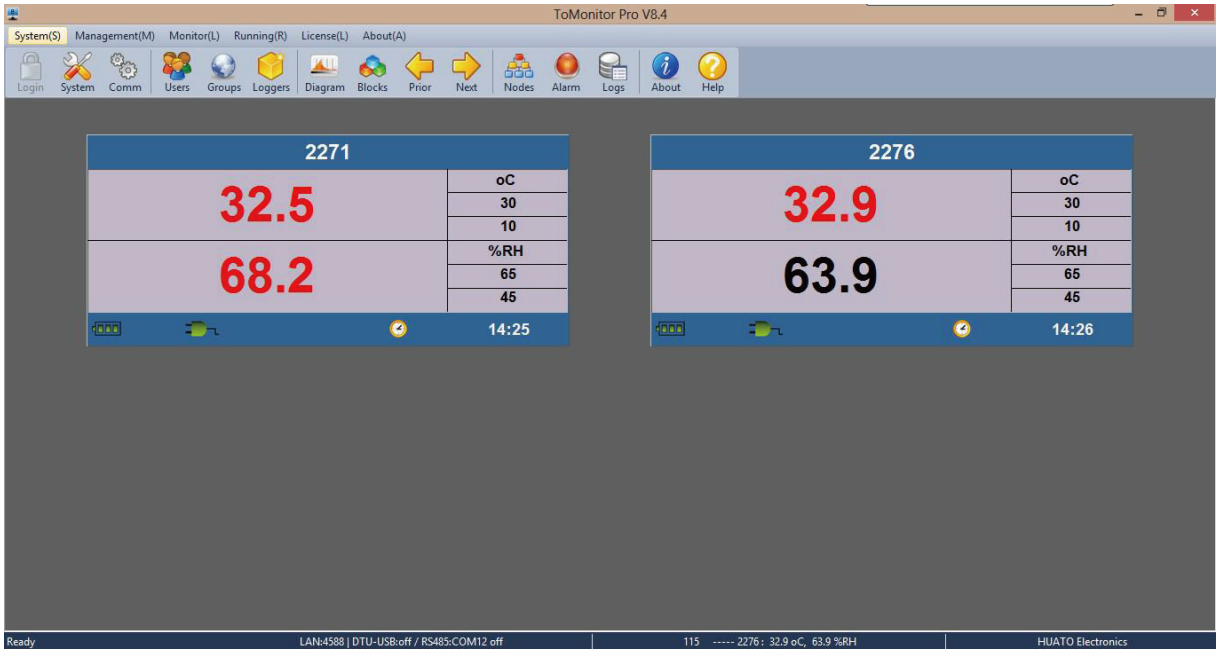
   After finishing essential setup, click onApply button at the right corner of the interface.

   To check if the logger has been connected to the monitoring system, click on 【Connect】 in the Logger Type block; To get property of this logger, click on 【Property】 .

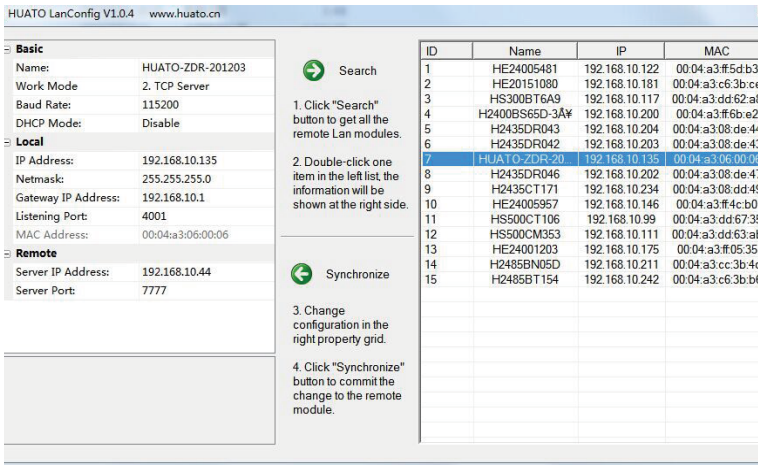
   Similarly, the other RJ45 loggers can be added to the monitoring system.

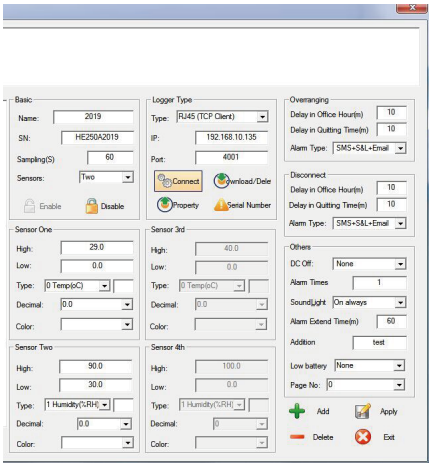


6. Click on 【Exit】at the right bottom, one will get into the monitoring window and will be able to monitoring the loggers real-timely.

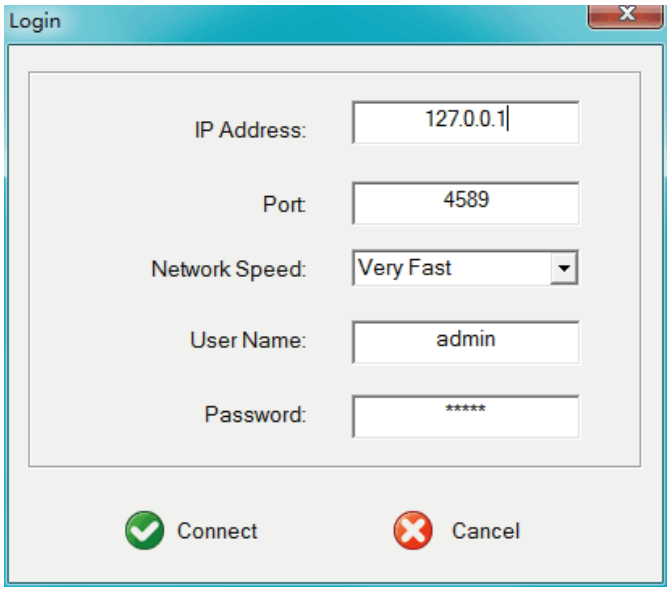


7. As mentioned above, previous steps are based on fact that customer choose "TCPServer" working mode. But one important functionality--automatic downloading-- must be setup at "TCPClient" working mode. That is, when customer shut down computer or ToMonitor software, RJ45 logger will still record data and automatic download to ToMonitor database when the software is up again. One needs to choose "TCPClient" working mode in the following two steps.





8. To check data stored in theToMonitor database, customer needs to open theToClient8 application and input admin for both user and password.



9. Click on , then choose the group, logger and query time, and click button, customer will be able to view the data recorded by the logger.Then, click on DataList Button to view graph and data at the same time.