ONMEAS®

Rev.A1

AT4900

Data Logger



User's Guide

Scan QR code for operation video

Statement

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Safety Information

⚠Warning⚠Dangerous： To avoid possible electric shock and personal safety, please follow these guidelines.

Disclaimer	Please read the following safety information carefully before starting to use the instrument. Onmeas Instruments will not be responsible for any personal safety and property damage caused by the user's failure to comply with the following terms.
Ground The Instrument	To prevent the danger of electric shock, please connect the power ground wire.
Do not use the instrument in an explosive atmosphere	Do not use the instrument in a flammable and explosive gas, vapor or dusty environment.Using any electronic device in such an environment is a risk to personal safety.
Do not open the instrument case	Non-professional maintenance personnel should not open the instrument case in an attempt to repair the instrument.The instrument may still have undischarged charges for a period of time after it is turned off, which may cause an electric shock hazard to persons.
Do not use instruments that work abnormally	If the instrument is not working properly and its danger is unpredictable, disconnect the power cord, do not use it, and do not attempt to repair it yourself.
Do not use the instrument in a manner other than that specified in this manual	Beyond the range, the protection provided by the instrument will be invalid.
⚠	**Warning**： Do not apply over 350V DC or 230V AC to the test terminals. This will damage the instrument.

Safety Sign：



Equipment protected by double insulation or reinforced insulation.

Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC



Do not throw in trash can

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Onmeas provides a one-year free warranty from the date of shipment, which also includes VFD or LCD. During the warranty period, the instrument is damaged due to improper operation by the user, and the maintenance cost shall be borne by the user.After two years until the life of the instrument, Onmeas will provide maintenance for a fee.For VFD or LCD replacement, the fee is charged at the current cost price.

If the product is found to be damaged, please contact Onmeas for information on agreeing to return or exchange.After that, please send this product to the seller for return.Be sure to state the reason for the damage to the product, and prepay postage and insurance to the destination.For the repair or replacement of the product within the warranty period, Onmeas will be responsible for the return shipping cost.For the repair of non-guaranteed products, Onmeas will estimate the repair cost, and only carry out the repair under the premise of obtaining your consent. All costs incurred by the repair will be borne by the user, including the return shipping cost.

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People's Republic of China
Jiangsu Province
Changzhou Onmeas Instruments Ltd.
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1.The Install and Setup Wizard

Thank you for buying our company's product! Please read this chapter carefully before use.
You will learn the following information in this chapter

- Packing List
- Power Requirement
- Operation Environment
- Cleaning

1.1 Packing List

Before formally using the instrument, please first:

1. Check whether the appearance of the product is damaged to damage, scratches and other bad phenomena;

2. Check whether the instrument accessories are lost against the instrument packing list.

If there is any damage or insufficient accessories, please contact the Applent equipment sales department or the seller immediately.

1.2 Power Requirement

ATQ4900 data logger can only be used in the following power supply conditions:

Voltage：100V-240VAC

Frequency：47.5-52.5Hz

Power Supply：Max 50VA

WARNING: To prevent the risk of electric shock, ensure that the power ground is properly connected.
If the user has replaced the power cord, ensure that the new power cord is reliably grounded.

1.3 Operation Environment

ATQ4900 must be used in the following environment conditions:

Temperature：0℃～55℃,

Humidity：23℃, < 70%RH

Altitude：0~2000m

1.4 Cleaning

Do not clean the inside of the instrument

Note：Instruments should not be cleaned with solvents (alcohol or gasoline, etc.).

Before cleaning, the power cord must be unplugged, clean the shell and panel with a clean cloth.

6.SYSTEM CONFIG

You will learn the following information in this chapter:

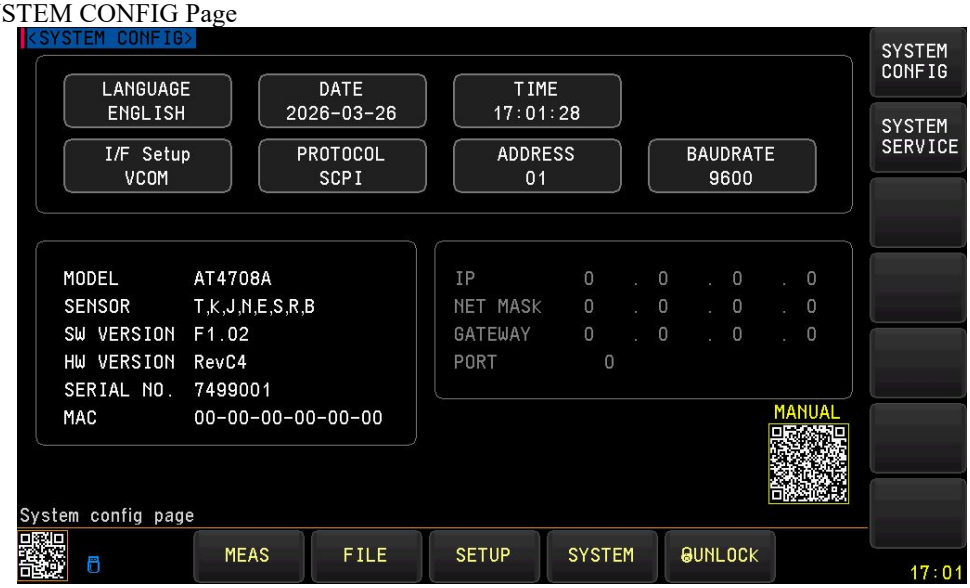
- <SYSTEM CONFIG> Page
- <SYSTEM SERVICE> Page

6.1 <SYSTEM CONFIG>Page

At any time, Press the【Setup】key, select the【System】key to enter the **<SYSTEM CONFIG>**page.
<**SYSTEM CONFIG**>page includes the following settings:

- LANGUAGE
- DATA
- TIME
- I/F Setup
- PROTOCOL
- ADDRESS
- BAUDRATE

Figure 6-1 SYSTEM CONFIG Page



6.1.1 【LANGUAGE】

The instrument supports both English and Chinese

■ Steps to set the language:

Step 1	Select the【System】key to enter the <System Configuration>page.	
Step 2	Select 【Language】field.	
Step 3	Use the function key to select language	
	Soft keys	Function
	中文（CHS）	Chinese
	ENGLISH	English

6.1.2 【DATA】

■ Steps to set the data:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Use the cursor key to select the【DATA】	
Step 3	Use the function key to select the data	
	Soft keys	Function
	YEAR INCR+	+1 year
	YEAR DECR-	-1 year
	MONTH INCR+	+1 month
	MONTH DECR-	-1 month
	DAY INCR+	+1 day
	DAY DECR-	-1 day

6.1.3 【TIME】

The instrument uses 24-hour time format

■ Steps to set the time:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Use the cursor key to select the【TIME】	
Step 3	Use the function key to set the time	
	Soft keys	Function
	HOUR INCR+	+1 hour
	HOUR DECR-	-1 hour
	MINUTE INCR+	+1 minute
	MINUTE DECR-	-1 minute
	SECOND INCR+	+1 second
	SECOND DECR-	-1 second

Note: If the internal battery is low, the clock will stop working. In this case, the battery needs to be replaced.

6.1.4 【I/F Setup】

The instrument supports VCOM、USB-232、RS-232 and LAN interface

Steps to set the interface:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Use the cursor key to select the【I/F Setup】	
Step 3	Use the function key to set interface.	
	Soft keys	Function
	MAP DISK	The computer can access the instrument's internal memory via the TYPE-C interface. You can copy and delete data files on the internal memory on the computer.
	VCOM	The host computer obtains real-time acquisition data via the TYPE-C interface.
	USB-232	The host computer obtains real-time acquisition data via the TYPE-C interface.
	RS-232	The host computer obtains real-time acquisition data via the RS-232 interface.
	LAN	The instrument has a built-in LAN interface. You can connect the instrument to the company's internal local area network to enable other computers on the network to control the instrument and

		perform data acquisition. Before using the LAN interface, you must assign an IP to the instrument and specify the gateway of the local area network.

6.1.5 【PROTOCOL】

The instrument supports SCPI and MODBUS communication protocols.

Steps to set the communication protocol:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Use the cursor key to select the【PROTOCOL】	
Step 3	Use the function key to set the communication protocol.	
	Soft keys	Function
	SCPI	Select SCPI as the host computer communication protocol. For protocol details, refer to Chapter 8.
	MODBUS	Select MODBUS as the host computer communication protocol. For protocol details, refer to Chapter 9.

6.1.6 【ADDRESS】

The instrument address only support values from 1 to 20

Steps to set the communication address:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Use the cursor key to select the【ADDRESS】	
Step 3	Use the function key to set the communication address.	
	Soft keys	Function
	1	Set the instrument communication address to 1.
	2	Set the instrument communication address to 2
	...	...
	20	Set the instrument communication address to 20

6.1.7 【BAUDRATE】

BAUDRATE

Steps to set the baud rate:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Use the cursor key to select the【BAUDRATE】	
Step 3	Use the function key to set the baud rate.	
	Soft keys	Function
	9600	Set the instrument communication baud rate to 9600.
	19200	Set the instrument communication baud rate to 19200
	38400	Set the instrument communication baud rate to 38400
	57600	Set the instrument communication baud rate to 57600
	115200	Set the instrument communication baud rate to 115200

6.1.8 【IP】

Steps to set the IP address:

Step 1	Select the【System】key to enter the <System Configuration>page
Step 2	Select the【IP】field.
Step 3	Use the function key to set the IP address.

	Soft keys	Function
	192.168.1.1	Set the IP address of this instrument

6.1.9 【NET MASK】

Steps to set the net mask:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Select the【NET MASK】field.	
Step 3	Use the function key to set the net mask.	
	Soft keys	Function
	255.255.255.0	Set the net mask of this instrument.

6.1.10 【GATEWAY】

Steps to set the gateway:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Select the【GATEWAY】field.	
Step 3	Use the function key to set the gateway.	
	Soft keys	Function
	192.168.1.1	Set the gateway of this instrument.

6.1.11 【PORT】

Steps to set the network port:

Step 1	Select the【System】key to enter the <System Configuration>page	
Step 2	Select the【PORT】field.	
Step 3	Use the function key to set the port.	
	Soft keys	Function
	2000	Set the network port of this instrument.



NOTE!
Due to hardware limitations of the instrument, the IP address and gateway cannot be obtained automatically. You must obtain them from your network administrator.

6.2 <SYSTEM SERVICE>Page



WARNING
This page is not accessible to users. It is used for factory calibration.Do not attempt to enter without professional guidance.Otherwise, calibration data may be lost, resulting in significant measurement errors.

7.FILE Page

You will learn the following information in this chapter:

- <FILE>Page

7.1 <FILE>Page

At any times,press the【Meas】or【Setup】key,select the【FILE】key to enter the <FILE>page
<FILE>page includes the following setting:

- FILE

Figure 7-1 File Page



■ Steps to set file:

Step 1	Press the [Setup] shortcut key to enter the main page.	
Step 2	Press the function key【FILE】to enter the <File> page.	
Step 3	Use the cursor keys to select the [SYSTEM DEFAULT] field.	
Step 4	Use the function keys on the sidebar to configure file operations.	
	Soft keys	Function
	SAVE	Save the current instrument settings.
	RECALL	Load the saved instrument settings
	ERASE	Delete the saved instrument settings

13. Specification

You will learn about the following in this chapter:

- Qualification
- Specifications
- Outline dimension

13.1 Qualification

The following data were measured under the following conditions:

- Temperature condition: 23℃±5℃
- Humidity condition: ≤65% R.H.
- Pre-heating time: >60 minutes
- Calibration time: 12 months

Measurement Environment:

- Index: Temperature 15℃~35℃ Humidity <80% RH
- Operation : Temperature 10℃~40℃ Humidity 10~90% RH
- Storage: Temperature 0℃~50℃ Humidity 10~90% RH

Thermocouple Type:	T,K,J,N,E,S,R,B
Display Digits:	5 digits for main parameter
Measurement Speed:	Fast,Slow
Maximum Reading:	1800.0
Minimum Reading:	-200.0
Data Logging:	USB Memory,internal memory
Beep:	ON/OFF
Communication:	LAN,TYPE-C,RS-232,USB
Programming Language:	SCPI,MODBUS

13.2 Specification

- 7-inch touchscreen TFT-LCD true-color display, resolution: 800×480
- Comparator (sorting) function: built-in sorting records
- Chinese/English language switching
- Compatible with SCPI command set and MODBUS command set
- Weight: 5000g

13.3 Measurement Accuracy

The instrument accuracy does not include the accuracy of standard junction compensation.

Model	Test Temperature Range (℃)	Measurement Accuracy (℃)
Type T Thermocouple	-200℃ ~ 0℃ 0℃ ~ 400℃	±1.0℃ ±0.8℃
Type K Thermocouple	-200℃ ~ 0℃ 0℃ ~ 1350℃	±1.2℃ ±0.8℃
Type J Thermocouple	-200℃ ~ 0℃ 0℃ ~ 1200℃	±1.0℃ ±0.7℃
Type N Thermocouple	-200℃ ~ 0℃ 0℃ ~ 1300℃	±1.5℃ ±0.9℃
Type E Thermocouple	-200℃ ~ 0℃ 0℃ ~ 850℃	±0.9℃ ±0.7℃
Type S Thermocouple	0℃ ~ 100℃ 100℃ ~ 300℃ 300℃ ~ 1750℃	±4.5℃ ±3.0℃ ±2.2℃
Type R Thermocouple	0℃ ~ 100℃ 100℃ ~ 300℃ 300℃ ~ 1750℃	±4.5℃ ±3.0℃ ±2.2℃
Type B Thermocouple	600℃ ~ 800℃ 800℃ ~ 1000℃ 1000℃ ~ 1800℃	±5.5℃ ±3.8℃ ±2.5℃

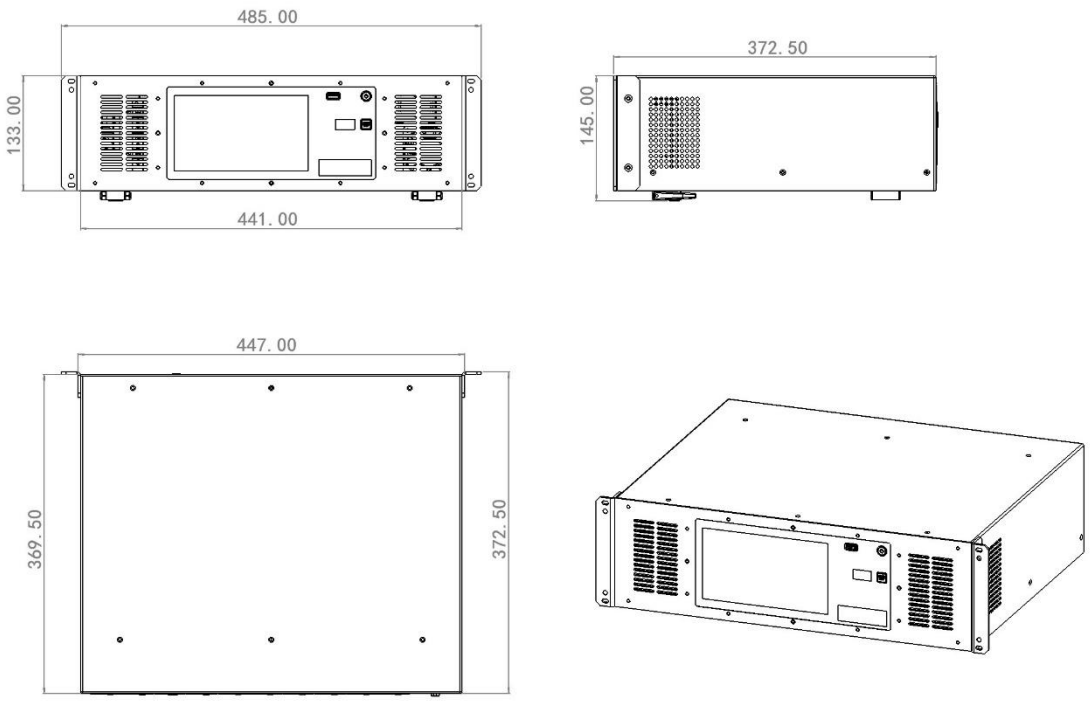
Standard junction compensation adds ±0.5℃ to the thermocouple measurement accuracy.

The measurement accuracy of the thermocouple sensor shall be subject to the standards of the sensor manufacturer.

DC Resistance Test Range	0.001mΩ ~ 200.000kΩ，0.1%±3dgt
DC Voltage Test Range	0.01mV ~ 100.00V，0.05%±3dgt
DC Current Test Range	0.001mA ~ 5.000A，0.3%±3dgt

13.4 Outline Dimension

(Schematic diagram)



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