

## PR203/PR205 Temperature and Humidity Acquisitor



It has 0.01% level accuracy, small in size and convenient to carry. Up to 72 channels' TCs, 24 channels' RTDs, and 15 channels' humidity sensors can be connected. The instrument has the powerful human interface, which can display the electric value and temperature / humidity value of each channel at the same time. It is a professional instrument for temperature and humidity uniformity acquisition. Equipped with S1620 temperature uniformity test software, the test and analysis of items such as temperature control error, temperature and humidity uniformity, uniformity and stability can be automatically completed.

### ● Product Features

#### 1. 0.1 second / channel inspection speed

Whether data acquisition for each channel can be completed in the shortest possible time is a key technical parameter of the verification instrument. The shorter the time spent on acquisition, the smaller the measurement error caused by the temperature stabilities of the space. During the TC acquisition process, the device can perform data acquisition at a speed of 0.1 S/channel under the premise of ensuring the accuracy of 0.01% level. In the RTD acquisition mode, data acquisition can be performed at a speed of 0.5 S/channel.

#### 2. Flexible Wiring

The device adopts a standard connector to connect the TC/ RTD sensor. It uses an aviation plug to connect to the sensor to make connection of the sensor simpler and faster under the premise of guaranteed connection reliability and performance indexes.



#### 3. Professional Thermocouple Reference Junction Compensation

The device has a unique reference junction compensation design. The temperature equalizer made of aluminum alloy combined with the internal high-precision digital temperature sensor can provide a compensation with an accuracy better than 0.2°C to the measuring channel of the TC.



#### 4. Thermocouple measurement accuracy meets the requirements of AMS2750E specifications

The AMS2750E specifications place high demands on the accuracy of the acquirers. Through the optimized design of the electric measurement and



the reference junction, the accuracy of the TC measurement of the device and the difference between channels are optimized by significantly, which can fully meet the demanding requirements of AMS2750E specifications.

## 5. Optional dry -wet bulb method to measure humidity

Commonly used humidity transmitters have many usage restrictions for continuous operations in high humidity environments. PR203/PR205 series acquirer can measure the humidity by using the dry-wet bulb method with a simple configuration, and measure the high humidity environment for a long time.

## 6. Wireless communication function

Through a 2.4G wireless network, a tablet or a notebook, up to ten devices can be connected at the same time. Multiple acquisition instruments can be used at the same time to test the temperature field, which effectively improves the working efficiency. In addition, when testing a sealed device such as an infant incubator, the acquisition instrument can be placed inside the device under test, simplifying the wiring process.



## 7. Support for Data Storage

The instrument supports the USB disk storage function. It can store the acquisition data in the USB disk during operation. The storage data can be saved as CSV format and can also be imported into special software for data analysis and report / certificate export. In addition, in order to solve the security, non-volatile issues of the acquisition data, PR203 series has built-in large flash memories, when working with a USB disk, the data will be double backed up to further enhance data security.

## 8. Channel expansion capability

The PR203/PR205 series acquisition instrument supports the USB disk storage function. It can store the acquisition data in the USB disk during operation. The storage data can be saved as CSV format and can also be imported into special software for data analysis and report / certificate export. In addition, in order to solve the security, non-volatile issues of the acquisition data, PR203 series has built-in large flash memories, when working with a USB disk, the data will be double backed up to further enhance data security.



## 9. Closed design, compact and portable

The PR205 series adopts a closed design and the safety protection level reaches IP64. The device can work in a dusty and harsh environment such as a workshop for a long time. Its weight and volume are much smaller than that of desktop products of the same class.

## 10. Statistics and data analysis functions

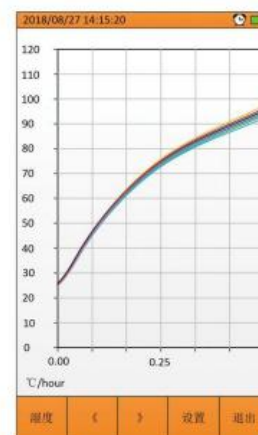
By using more advanced MCU and RAM, PR203 series has a more complete data statistics function than PR205 series. Each channel has independent curves and data quality analysis, and may provide a reliable basis for the analysis of the pass or fail of the test channel.

## 11. Powerful human interface

The human interface interface consisting of the touch screen and mechanical buttons can not only provide convenient operations, but also meet the requirements for reliability in the actual work process.

PR203/PR205 series has an operation interface with enriched content, and the operable content includes: channel

setting, acquisition setting, system setting, curve drawing, calibration, etc., and the data acquisition can be independently completed without any other peripherals at the test field.



## ● Differences of all models

Items/model	PR203AS	PR203AF	PR203AC	PR205AF	PR205AS	PR205DF	PR205DS
Products name	Temperature and Humidity Acquisitor					Data recorder	
Number of thermocouple channels	32			24			
Number of thermal resistance channels	16			12			
Number of Humidity channels	5			3			
Wireless communication	RS232	2.4G wireless	IOT	2.4G wireless	RS232	2.4G wireless	RS232
Supporting PANRAN Smart Metrology APP			●				
Battery life	15h	12h	10h	17h	20h	17h	20h
Connector mode	Special connector					aviation plug	
Additional number of channels to expand	40 pcs thermocouple channels/8 pcs RTD channels/3 humidity channels						
Advanced data analysis capabilities	●						
Basic data analysis capabilities				●			
Double backup of data	●						
History data view	●						
Modification value management function	●						
Screen Size	Industrial 5.0 inch TFT color screen			Industrial 3.5 inch TFT color screen			
Dimension	307mm*185mm*57mm			300mm*165m*50mm			
Weight	1.2kg(No charger)						

Working environment	Temperature: -5°C~45°C ; Humidity: 0~80%,Non condensing
Preheating time	10 minutes
Calibration period	1 year

● *Performance index*

**Electrical technology index**

Range	Measurement range	Resolution	Accuracy	Number of channels	Remarks
70mV	-5mV~70 mV	0.1uV	0.01%RD+5uV	32	Input impedance≥50MΩ
400Ω	0Ω~400Ω	1mΩ	0.01%RD+0.005%FS	16	Output 1mA excitation current

**Temperature Sensor**

Range	Measurement range	Accuracy	Resolution	Sampling speed	Remarks
S	100.0°C~1768.0°C	600°C,0.8°C	0.01°C	0.1s/Channel	Conform to ITS-90 standard temperature; A type device include reference junction compensation error
R		1000°C,0.9°C			
B	250.0°C~1820.0°C	1300°C,0.8°C			
K	-100.0~1300.0°C	≤600°C,0.6°C >600°C,0.1%RD			
N	-200.0~1300.0°C				
J	-100.0°C~900.0°C				
E	-90.0°C~700.0°C				
T	-150.0°C~400.0°C				
Pt100	-150.00°C~800.00°C	0°C,0.06°C 300°C,0.09°C 600°C,0.14°C	0.001°C	0.5s/Channel	1mA excitation current
Humidity	1.0%RH~99.0%RH	0.1%RH	0.01%RH	1.0s/Channel	No contain humidity transmitter error

**Accessory selection**

Accessory model	Functional description
PR2055	Expansion module with 40-channel thermocouple measurement
PR2056	Expansion module with 8 platinum resistance and 3 humidity measurement functions
PR2057	Expansion module with 1 platinum resistance and 10 humidity measurement functions
PR1502	Low ripple noise external power adapter