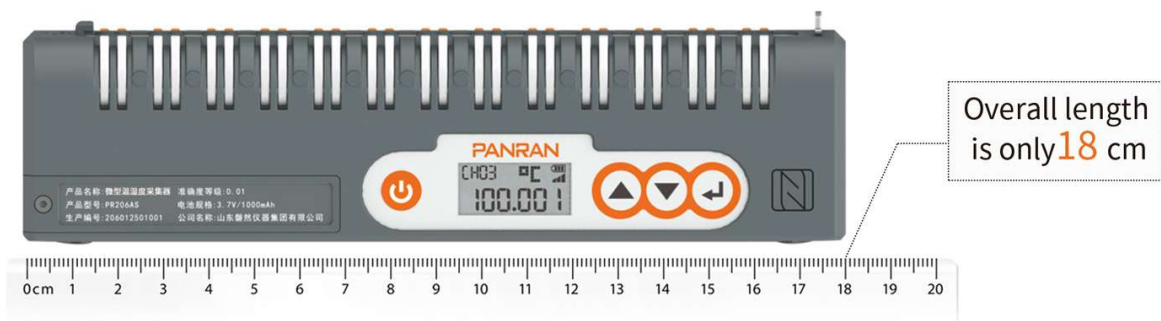


PR206 Series Micro Temperature and Humidity Acquisitor



PANRAN

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1. Overview

The PR206 series micro temperature and humidity acquisitor has an extremely light appearance. The self-locking connector integrated on the top can quickly connect various thermocouples, thermal resistors and humidity transmitters, and together with various sensors, it forms a wireless temperature and humidity test unit that does not require frequent disassembly. This series of acquisitors can be connected to mobile phones, PCs or dedicated portable data servers via Bluetooth communication to realize rich human-computer interaction functions, and can flexibly form a 12~120 channels distributed wireless temperature and humidity test system according to different test requirements.

The PR206 series acquisitor is not just a temperature and humidity collection module or unit. Despite its limited size, the acquisitor still has a screen and several function buttons, which can display a number of basic information and data during the inspection process. It can also manually switch channels, set inspections, start and stop inspections, etc. through the function buttons. These functions make the preparation work before the test more convenient. At the same time, the mobile APP, PC and cloud platform provide many software functions including inspection configuration, sensor correction, data statistics, curve display, etc., and can automatically test and analyze the temperature control deviation, temperature field, humidity field, uniformity, volatility and other parameters of heat treatment furnaces and temperature (humidity) environment experimental equipment online.

2. Features

- Excellent electrical test performance, with 0.01 level electrical measurement accuracy. The channel switching of type A products adopts a mechanical relay array to avoid additional electrical measurement errors due to leakage current, thereby achieving excellent channel consistency.
- Input protection function, when the thermocouple function is in place, all measurement ports can withstand 220V high voltage accidentally entering, effectively avoiding hardware damage caused by AC leakage during the heat treatment furnace temperature measurement process.

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- Multifunctional and small size, it can independently complete inspection and data storage without connecting other peripherals, and the palm-sized size makes it easy to carry.
- Self-locking connector, 12-channel self-locking connector can quickly connect the temperature and humidity sensors for testing without using other tools, greatly simplifying the wiring work.
- Flexible combination, after connecting to a mobile phone or other terminal via Bluetooth function, a variety of parameter configuration and data processing can be performed through rich APP functions. The APP can connect multiple PR206 series acquisitors at the same time, thus forming a large wireless temperature and humidity test system.
- Convenient connection, you can quickly identify and connect the acquisitor by touching the NFC area with your phone or using the APP to scan the QR code on the body, simplifying the on-site networking process.
- In U disk mode, you can charge or transmit data with the host computer through the TYPE-C interface. When data transfer is selected, the acquisitor will enter into U disk mode, which is convenient for copying and deleting recorded files.
- Reference end compensation, the A-type acquisitor can perform independent reference compensation for each measurement channel, and the compensation error is better than 0.3°C.

3. Product Related Pictures



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4. Introduction to the Functions of PANRAN Smart Metrology APP

Smart metrology APP can run on Android or IOS systems, and can interconnect data with many types of instruments and equipment of PANRAN through wifi, Bluetooth, etc. The functions that can be realized include three categories:

- Conventional control functions, remote/local real-time control, monitoring, recording, alarm and other functions.
- Data processing functions, supports real-time processing of calibration data, historical data query, and cloud storage. It can generate reports and certificates according to various regulations or custom calibration rules.
- Permission management function, with rich permission configuration modules, support the simultaneous online access of multiple users and the configuration of different user permission levels.

The PR206 micro temperature and humidity acquisitor can perform basic operations such as calibration, data recording, and data processing. PANRAN instruments are available in South Africa from Intercal (Pty) Ltd

as viewing measurement data, starting and stopping inspections, single-channel tracking, and setting inspection cycles through its own screen and buttons. If you want to realize more complex human-computer interaction, you need to use the PANRAN Smart Metrology APP. By connecting a mobile phone or tablet computer with the Smart Metrology APP installed, a single or multiple PR206 temperature and humidity acquisitors can form a powerful distributed temperature and humidity measurement system, which can realize complex operations such as inspection configuration, data viewing, sensor correction, data statistics, and curve display. The cloud metrology function can also be used to automatically test and analyze parameters such as temperature control deviation, temperature field, humidity field, uniformity, and volatility of heat treatment furnaces and temperature (humidity) environment experimental equipment online.



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5. Technical Parameters

5.1 General Technical Parameters

Model	PR206AS	PR206BS
TC measurement function	•	\
Switch type	Relay switch	Analog switch
Weight	280g	210g
Number of multi-function channels	12	
Dimension	180mm×45mm×30mm	
Working temperature	-5°C~45°C	
Working humidity	(0~80)%RH, Non-condensing	
Wireless communications	Bluetooth 5.2, effective communication distance ≥ 20 meters	
Battery type	3.7V 1000mAh rechargeable lithium battery	
Charging port	Type-C	
Battery duration	≥14h	≥11h
Warm-up time	Effective after 10 minutes warm-up	

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Calibration period	1 year
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5.2 Electrical Technical Parameters

Range	Measuring range	Resolution	Accuracy	Max. difference between channels	Acquisition speed
60mV	-5mV~60mV	0.1μV	0.01%RD+6μV	2μV	High speed: 0.2 s/channel Medium speed: 0.5 s/channel Low speed: 1.0 s/channel
400Ω (PR206A)	0Ω~400Ω	1mΩ	0.01%RD+12mΩ	3mΩ	High speed: 0.5 s/channel Medium speed: 1.0 s/channel Low speed: 2.0 s/channel
400Ω (PR206B)			0.01%RD+20mΩ	10mΩ	
1V	0V~1V	0.01mV	0.2mV	0.1mV	High speed: 0.5 s/channel Medium speed: 1.0 s/channel Low speed: 2.0 s/channel

Note 1: The above parameters are tested in an environment of 23±5°C, and the maximum difference between channels is measured in the inspection state.

Note 2: The input impedance of the voltage-related range is ≥50MΩ, and the output excitation current of the resistance measurement is ≤1mA.

5.3 Temperature Technical Parameters

Range	Measuring range	Resolution	Accuracy	Remarks
S	0°C~1760.0°C	0.01°C	@ 600°C, 0.9°C	Conforms to ITS-90 temperature scale Including reference end compensation error
R			@ 1000°C, 0.9°C	
B	300.0°C~1800.0°C		@ 1300°C, 0.9°C	
K	-100.0°C~1300.0°C		≤600°C, 0.6°C >600°C, 0.1%RD	
N	-200.0°C~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 (PR206A)	-200.00°C~800.00°C	0.001°C	@ 0°C, 0.06°C @ 300°C, 0.09°C	Output 0.5mA excitation current

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			@ 600°C, 0.13°C	
Pt100 (PR206B)			@ 0°C, 0.08°C @ 300°C, 0.11°C @ 600°C, 0.16°C	
Humidity	1.00%RH~99.00%RH	0.01%RH	0.1%RH	Transmitter error is not included

6. Packaging Information

	No.	Name & description	Quantity
Standard accessories	1	Micro temperature and humidity acquisitor	1 Piece
	2	Portable bag	1 Piece
	3	Type-C data cable (1 meter)	1 Piece
	4	Operating instructions/product warranty card/certificate of conformity/test report	1 piece each

Optional accessories	No.	Name & description
	1	Four-wire Pt100
	2	Thermocouple (S, R, B, K, N, J, E, T)

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