

# PR205 Series Temperature and Humidity Data Acquisitor

**PANRAN**

PANRAN instruments are available in South Africa from Intercal (Pty) Ltd

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PR205 series temperature and humidity acquirers, with accuracy of 0.01%, and can connect up to 64 thermocouples, 20 thermal resistances, and 13 humidity transmitters. With rich human-computer interaction functions, it can display the electric data and temperature data of each channel at the same time. It is a special portable instrument for temperature and humidity field testing. After connecting to the host computer, it can realize automatic testing and analysis of temperature control deviation, temperature field, humidity field, uniformity and fluctuation of heat treatment furnace and temperature (humidity) environmental experimental equipment. the standards, methods and specifications based on the test cover national standards, military standards and various current specifications. At the same time, this series of products adopts a closed design, which can work for a long time in the harsh environment with many dusts such as workshops.

## I. Features

### ■ Acquisition Speed of 0.1s / channel

Under the premise of ensuring the accuracy of 0.01%, data acquisition can be performed at a speed of 0.1 S/channel. In the RTD acquisition mode, data acquisition can be performed at a speed of 0.5 S /channel.

### ■ Flexible Connection Method

Using standard connectors as connecting parts makes the connection of thermocouples and thermal resistances easier and faster.



Quick connector

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■ **Professional Processing of TC Reference Junction**

The aluminum alloy thermostatic block with the built-in high-precision temperature sensor can provide CJ compensation with an accuracy better than 0.2°C for the thermocouple measurement channel.

■ **Channel Detection Function**

Before the acquisition, it will automatically detect whether all channels are connected to sensors. During the acquisition, the channels that are not connected to sensors will be automatically closed according to the detection results.

■ **Channel Expansion Function**

Channel expansion is realized by connecting supporting modules. The connection between the module and the host only needs to be connected through the special connector to complete the operation of adding modules.



PR2055 Thermocouple expansion module



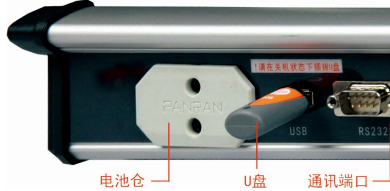
PR2056 RTD expansion module

■ **Optional Wet and Dry Ball Method to Measure Humidity**

Commonly used humidity transmitters have many limitations in continuous work in high humidity environments. The PR205 series acquisitors can measure humidity by using the wet and dry bulb method through simple configuration, and can measure high humidity environments for a long time.

■ **USB Disk Storage Function**

PR205 series acquisitors can store acquisition data in a U disk during the independent operation. The stored data in the U disk can be browsed or processed by Excel and other tools, or imported into special software for data analysis and output as reports and certificates.



Partial view of the back

■ **Sensor Correction Function**

The data of all temperature and humidity channels can be automatically corrected according to the existing user configuration through the host computer software.

■ **Powerful Human-computer Interaction Functions**

The human-computer interaction interface composed of touch screen and mechanical buttons can not only provide convenient operation, but also meet the reliability requirements in the actual operation. The display content covers: channel settings, acquisition data, system settings, curve drawing, etc.

■ **Detachable High-capacity Lithium Battery**

The large-capacity lithium battery can work continuously for more than 20 hours, and can avoid measurement disturbance caused by the use of AC power.

**II. Technical Parameter**

■ **Model Selection**

Function \ Model	PR205AF	PR205AS
Communication method	2.4G local area network	RS232
Battery duration	17h	20h
Number of TC channels	24	
Number of RTD channels	12	
Number of humidity channels	3	
Number of additional channel expansions	40 TC channels/8 RTD channels/10 humidity channels	
Basic data analysis functions	●	
Screen dimensions	Industrial-grade 3.5-inch monochrome screen	
Dimensions	300mmX165mmX50mm	
Weight	1.2kg(without charger)	

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Working environment	Working temperature: -5°C~45°C; Working humidity: 0~80%RH, non-condensing
Warming-up time	Valid after 10 minutes of warm-up
Recalibration Period	1 year

**■Regulations, Specifications , Standards that are Implemented and Referenced**

No	Implementation standard/specification code	Standard/Specification Name
1	JJF 1101-2019	Calibration Specification for Environmental Testing Equipment for Temperature and Humidity Parameters
2	JJF 1376-2012	Calibration Specification for Box-type Resistance Furnace
3	JJF 2019-2022	Measurement Specification for Temperature Performance of Liquid Constant Temperature Testing Equipment
4	JJF 2168-2024	Calibration Specification for Salt Mist Testing Chambers
5	JJF 1564-2016	Calibration Specification for Temperature and Humidity Standard Chambers
6	GB/T 9452-2023	Test method for qualified work zone of heat treatment furnace
7	GB/T 5170.1-2016	Inspection methods for environmental testing equipment for electric and electronic products -- Part 1: General
8	GB/T 5170.2-2017	Inspection methods for environmental testing equipment -- Part 2: Temperature testing equipment
9	GB/T 5170.5-2016	Inspection methods for environmental testing equipment for electric and electronic products -- Part 5: Damp heat testing equipment
10	GB/T 5170.8-2017	Inspection methods for environmental testing equipment -- Part 8: Salt mist testing equipment
11	HB 5425-2012	Determination method of effective heating area of heat treatment furnace for aviation parts
12	HB 6783.3-93	Verification method for climate environment test chamber (room) for military airborne equipment
13	GJB 509B-2008	Heat treatment process quality control

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14	QJ 1428A-2012	Heat treatment furnace temperature control and measurement
15	JB/T 5520-91	Drying oven technical conditions
16	AMS2750	AEROSPACE MATERIAL SPECIFICATION(R) Pyrometry

■ Specifications

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

Range	Measuring range	Accuracy	Resolution	Acquisition speed	Remarks
S	0°C~1760°C	At 600°C, 0.8°C	0.01°C	0.1s/channel	Conforms to ITS-90 temperature scale
R		At 1000°C, 0.9°C			
B	300.0°C~1800°C	At 1300°C, 0.8°C			
K	-100.0°C~1300.0°C	When ≤600°C, 0.6°C When >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				
WRe3/25	0°C~2300°C	When ≤600°C, 0.6°C	0.01°C	0.1s/channel	Conforms to ITS-90 temperature scale
WRe5/26		When >600°C, 0.1%RD			
PT100	-200°C~800°C	At 0°C, 0.06°C At 300°C, 0.09°C At 600°C, 0.14°C	0.001°C	0.5s/channel	Output 1mA excitation current
Humidity	1.00%RH~99.00%RH	0.1%RH	0.01%RH	1.0s/channel	Humidity transmitter error is not included.

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